

Appendix F – Update on Hazard Mitigation Goals

CAMDEN COUNTY – UPDATE ON HAZARD MITIGATION GOALS

HURRICANE MITIGATION STRATEGY

Goal 1: Minimize the Impact of Hurricane Wind Events

Objective 1: Improve the wind resistance of structures in the county.

1. Continue to enforce the North Carolina Building Code. The requirement that new structures or structures undergoing significant renovation be resistant to wind loads of 110 mph. is of particular importance.
 - Update – Ongoing through county inspection department.
- ~~2. Educate contractors about safe housing development through written materials or during county sponsored events.~~

Objective 2: Educate home and property owners about wind resistant measures.

1. Provide hazard mitigation information for the county residents including information on preparedness for all hazards significant to Camden County during various public events, in public buildings, and through media outlets.
 - Update – Ongoing (information is distributed during public events and is posted on Camden-Pasquotank Emergency Management Website and Facebook.
2. Provide homeowners information on wind resistant measures.
 - Update – Ongoing – Ongoing via talks to Civic Groups, social media and through Planning/Inspections Departments.

Objective 3: Maintain and publicize the Camden County hurricane evacuation route in order to facilitate evacuation to inland areas.

1. Post information about Camden County's emergency evacuation routes.
 - Update – Information provided during various public events/educational events. Also posted to EM website and via social media.

Objective 4: Maintain and publicize the Pasquotank – Camden – Elizabeth City County Multi-Hazard Operations plan.

1. Review the Pasquotank-Camden-Elizabeth City Multi-Hazard Operations Plan annually and update the plan as necessary. Ensure all departments establish guidelines for response to emergencies and to maintain departmental operations. Work with County departments to ensure each department possesses a clear understanding of department responsibilities as outlined in the Pasquotank-Camden-Elizabeth City Multi-Hazard Operations Plan.

- Update – Annual update of Multi-Hazard Plan, conduct exercises with departments addressing their roles and responsibilities as outlined in the Multi-Hazard Plan.

Objective 5: Reduce the impact of wind on trees near county structures.

1. Monitor trees and branches at risk of breaking or falling in windstorms. Prune or thin trees or branches on county property when they would pose an immediate threat to property, utility lines or other significant structures or critical facilities in the community.
 - Update – Ongoing actions through maintenance.
2. Install generator switches in new construction critical facilities. As projects go through Technical Review Committee, applicants should pre-wire facilities for a generator, new construction critical facilities that would benefit from pre-wiring include but are not limited to public schools, local government facilities, adult care facilities, emergency departments, etc.
 - Update – Ongoing. Camden Sheriff's Office has installed a generator for their department.

Objective 6: Reduce the vulnerability of local government agencies and facilities to hurricane events.

1. Continue efforts to develop continuity of operations plans (COOP) for county departments. Continuity of operations planning has been completed by several departments and additional planning efforts are currently underway.
 - Update – Ongoing - Completed by Camden Sheriff's Office and additional planning efforts are underway by other departments.

Objective 7: Reduce the time required to return the affected community to pre-storm status.

1. Continue efforts for post-storm planning. In addition to the debris removal contract and NCDOT MOA already in place consider having pre-bid debris removal monitoring contracts in place as well. Develop a Disaster Recovery Plan that will clearly outline the responsibilities of each department/agencies following a major hurricane.
 - Update – Camden County has just completed the RFP process for a new Debris Removal Contract and Debris Monitoring Contract. A Disaster Recovery Plan has been completed.

FLOOD MITIGATION STRATEGY

Goal 1. Identify and Map Areas Flooded by Previous Floods

Objective 1: Record all structures within the floodplain as well as areas of repetitive losses due to flooding.

1. Record all tax parcel information and floodplain locations in a GIS system including repetitive loss areas, areas of greatest risk, and vulnerable populations.
 - Update – Completed – Updated as needed.
2. In conjunction with NCEM/GTM, produce an up-to-date flood map of Camden County that can be utilized to reduce development in the floodplain.
 - Update – Completed – Updated as needed.

Goal 3: Minimize the Impacts of Flooding

Objective 1: Minimize economic and property losses due to flooding.

1. Continued compliance with NFIP – participate in the Community Rating System (CRS).

The National Flood Insurance Program’s (NFIP) Community Rating System (CRS) allows counties and municipalities to reduce flood insurance rate premiums for citizen property owners. In order to capitalize on these reductions, counties and cities must take specific steps to improve upon the minimum floodplain management requirements of the NFIP. The CRS awards flood insurance premium discounts from 5-45% for eighteen different flood management activities that fall into the following four categories: public information, mapping and regulation, flood damage reduction, and flood preparedness. Participation in the CRS, which is contingent upon county compliance with NFIP rules, provides Camden County the opportunity to dramatically reduce flood insurance rate premiums for its residents. In order to participate, the county must designate a CRS coordinator to handle the application and serve as a liaison between the county and the Federal Emergency Management Agency. Camden County will continue to update and enforce floodplain management ordinances to minimize future flood losses by new construction, will encourage homeowners in flood zones to mitigate their properties and provide homeowners information on the NFIP. The county should take steps towards participation in the CRS.

 - Update – Continued compliance with NFIP – County does not participate in CRS
2. Camden County’s 15-member stormwater advisory committee should continue its work in identifying some of the major drainage issues in the four stormwater districts. Coordination should continue with the state in regards to the state spraying program to kill alligator weed which has already been identified as a problem throughout the county; notably in Joyce Creek and Bell Ditch. Maintenance of ditches, woods and swamps is also necessary and the committee should continue their work to identify what level of maintenance is needed in these areas. The Joyce Creek Stormwater District has a 2 cents tax per \$100 of land valuation to maintain the two main tributaries that feed into the creek, the committee should continue

to seek means to identify a budget to help maintain the drainage system in the remaining three districts.

- Update – Camden County has established a stormwater program and fee to conduct clearing and snagging maintenance activities on the County’s major streams and ditches, and perhaps some dredging where permitted by the Army Corp of Engineers. The objective is to keep the downstream and forested areas clear of debris that impedes free flowing drainage.

Objective 2: Provide information to citizens on flooding preparedness.

1. As with other hazards of concern to Camden County, hazard mitigation information should be distributed to residents, including information on preparedness for all hazards significant to its jurisdiction. The information should educate on methods of elevation and flood proofing property.
 - Update – Ongoing – Information regarding flood proofing provided via various forums.
2. Distribute information identifying flood prone areas within the county. Sixty –seven percent of Camden County is within the flood zone. Evacuation and family preparedness information should be distributed to all residents living within flood prone areas and especially to the special needs population located within these areas.
 - Update – Ongoing. EM also maintains a Special Needs Registry – evacuation and family preparedness information is made available to this population as well as the non-english speaking population in Camden County.

Objective 3: Work with the National Weather Service to provide early warning to the community and critical facilities

1. Pasquotank-Camden Emergency Management Agency has been officially recognized by the National Weather Service as a NC StormReady Community. There is access to, and considerable cooperation from, local broadcast media to warn the public to the potential for flooding. Weather alert radios are also located in each school and many government agencies to provide early warning. In addition, a notification plan is in place to alert critical facilities of watches/warnings. Coordination with the NWS should continue and additional methods of disseminating early warnings to the community/critical facilities should be continually evaluated and explored.
 - Update – Ongoing (information is also disseminated via social media)

TORNADO MITIGATION STRATEGY

Goal 1: Minimize the Impacts of Tornadoes on life and property

Objective 1: Improve the wind resistance of structures in the county.

1. Continue to enforce the North Carolina Building Code. The requirement that new structures or structures undergoing significant renovation be resistant to wind loads of 110 m.p.h. is of particular importance.
 - Update - Ongoing through county inspection department.
- ~~2. Educate contractors about principles for quality redevelopment and safe housing development through written materials and county sponsored events.~~

Objective 2: Educate home and property owners about wind proofing measures.

1. Provide hazard mitigation information for the county residents including information on preparedness for all hazards significant to Camden County during various public events, in public buildings, and through media outlets.
 - Update – Ongoing (information is distributed during public events and is posted on Camden-Pasquotank Emergency Management Website and Facebook.
- ~~2. Provide new home and property buyers with information on wind proofing. This information may be most efficiently dispersed by the tax assessor's office because all home transactions are recorded there.~~
3. Educate mobile home contractors and owners about wind proofing measures, including wood and light steel construction connectors and anchoring systems.
 - Update - Mobile homes are only allowed in R-2 and R-1 residential zones. Single wides are permitted to be replaced on site, and moved around the county to R-1 zones or trailer parks – but are not allowed to be brought into county otherwise. All homes must meet 110 mph wind codes. Mobile homes older than 1993 when the wind regulations changed are not permitted.

Objective 3: Reduce the impact of wind on trees near county structures.

1. Monitor trees and branches at risk of breaking or falling in windstorms. Prune or thin trees or branches on county property when they would pose an immediate threat to property, utility lines or other significant structures or critical facilities in the community.
 - Ongoing actions through maintenance.

Objective 4: Maximize Citizen Preparedness for Tornadoes.

- ~~1. Zoning and Subdivision Ordinances should require storm shelters in all mobile home areas and subdivisions.~~

THUNDERSTORM MITIGATION STRATEGY

Goal 1: Minimize the Impacts of Severe Thunderstorms

Objective 1: Educate the public on the hazards of thunderstorms

1. As with other hazards of concern to Camden County, the county should provide hazard mitigation materials to county residents for all hazards significant to Camden County. This information may be made available during various public events, in public buildings, and through media outlets.
 - Update – Ongoing (information is distributed during public events and is posted on Camden-Pasquotank Emergency Management Website and Facebook.

Objective 2: Minimize the impacts of lightning strikes.

1. Zoning ordinances should require that lightning detection devices be installed in public outdoor gathering areas such as school stadiums and ball parks.
 - Update – Funds not available.
2. Continue to educate the public on severe thunderstorm safety and the safety measures to be taken to protect from lightning injuries.
 - Update – Ongoing (information is distributed during public events and is posted on Camden-Pasquotank Emergency Management Website and Facebook. Information is also shared in the Public Schools and during community meetings/trainings.

Objective 3: Improve the wind resistance of structures in the county.

1. Continue to enforce the North Carolina Building Code. The requirement that new structures or structures undergoing significant renovation be resistant to wind loads of 110 m.p.h. is of particular importance.
 - Update – Ongoing through county inspection department.
- ~~2. Educate contractors about principles for quality redevelopment and safe housing development through written materials or county sponsored events.~~

Objective 4: Educate home and property owners about wind proofing measures.

1. Provide hazard mitigation information for the county residents including information on preparedness for all hazards significant to Camden County during various public events, in public buildings, and through media outlets.
 - Update – Ongoing (information is distributed during public events and is posted on Camden-Pasquotank Emergency Management Website and Facebook.

- ~~2. Provide new home and property buyers with information on wind proofing. This information may be most efficiently dispersed by the tax assessor's office because all home transactions are recorded there.~~
3. Educate mobile home contractors and owners about wind proofing measures, including wood and light steel construction connectors and anchoring systems.
 - Update - Mobile homes are only allowed in R-2 and R-1 residential zones. Single wides are permitted to be replaced on site, and moved around the county to R-1 zones or trailer parks – but are not allowed to be brought into county otherwise. All homes must meet 110 mph wind codes. Mobile homes older than 1993 when the wind regulations changed are not permitted.

Objective 5: Reduce the impact of wind on trees near county structures.

1. Monitor trees and branches at risk of breaking or falling in windstorms. Prune or thin trees or branches on county/city property when they would pose an immediate threat to property, utility lines or other significant structures or critical facilities in the county.
 - Update – Ongoing actions through maintenance.

Objective 6: Increase driving safety during thunderstorms

1. Driving in storm conditions can create hazardous road conditions, including decreased ability for drivers to see road boundaries. To improve road visibility, reflector tape or paint along road edges and in the dividing line should be placed on all major roads throughout the county.
 - Update – As funds are available this is maintained by NCDOT.

WILDFIRE MITIGATION STRATEGY

Goal 1: Minimize Risk of Wildfires

Objective 1: Maintain a current action plan for wildfire response.

1. Conduct an annual review of the Pasquotank-Camden-Elizabeth City Multi-Hazard Operations Plan. Maintain current emergency contact information.
 - Update - Annual update of Multi-Hazard Plan. Emergency Management Coordinator attends annual NC Forest Service Cooperative Meeting. EM Coordinator maintains current contact information.

Objective 2: Ensure proper access and firefighting capacity in order to effectively respond to wildfires and protect property.

1. Continue inter-agency and multi-jurisdictional efforts to identify, contain and extinguish wildfires.
 - Update – Ongoing. NC Forestry representatives are also regular attendees at monthly Public Safety Meetings.

Objective 3: Educate home and property owners about Wildland/Urban Interface fire safety.

1. Educate homeowners within wildfire threat areas about Wildland/Urban Interface fire safety. Implement Firewise Program within hazard communities.
 - Update – Ongoing through local fire departments and NC Forest Service

~~Minimize the number of new structures that are built along the Wildland/Urban Interface as these structures would be particularly vulnerable to wildfire.~~

GOAL 1: Continue to improve stormwater drainage and land management preparation for flooding.

Action Steps	Hazard Addressed	Time Frame	Funding	Responsible Party	Status
a. Routinely inspect and clear debris from drainage system <i>Priority: High</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding	On going	County/NCDOT	NCDOT, Soil Conservation	Routinely checking
b. Create stormwater management ordinance <i>Priority: High</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding	Less than 5 years	General fund	County Engineer, Planning	Complete
c. Continue stormwater drainage studies and planning for known problem areas <i>Priority: High</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding	On going	Local service districts	Soil Conservation, County Engineer	Complete
d. Prepare and adopt a community-wide stormwater management master plan <i>Priority: High</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding	Less than 5 years	General fund Staff Time	County Engineer, Planning	Complete
e. Find funding for public hazard mitigation <i>Priority: Moderate</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding	On going	Impact Fees, Hazard Mitigation Grants	BOC, EM	Hazmit grant funds received for generators at shelters

GOAL 2: Improve traffic flow throughout Currituck County.

Action Steps	Hazard Addressed	Time Frame	Funding	Responsible Party	Status
a. Continue to identify bridges for retrofitting <i>Priority: High</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding, Earthquake	On going	NCDOT	NCDOT	Routinely checking
b. Evaluate congested areas on Hwy 12 and Caratoke Hwy and implement level of service standards for new development <i>Priority: High</i>	Hurricane	Less than 5 years	NCDOT	NCDOT, Planning	Complete
c. Continue road improvements (stop lights, turn/deceleration lanes, etc.)	Hurricane	On going	NCDOT	NCDOT, Planning	Routinely checking

<i>Priority: High</i>				New development projects		community outreach and making improvements
d. Continue Mid-County bridge project	Hurricane	More than 5 years	NC Turnpike Authority	NC Turnpike Authority, NCDOT, BOC	Project held up in Raleigh	
<i>Priority: Moderate</i>						

GOAL 3: Create a more thorough hazard mitigation plan which will aid our response in all hazards.

<i>Action Steps</i>	<i>Hazard Addressed</i>	<i>Time Frame</i>	<i>Funding</i>	<i>Responsible Party</i>	<i>Status</i>
a. Incorporate manmade hazards such as hazardous materials spills and terrorism <i>Priority: High</i>	All Hazards	Less than 5 years	Staff Time	Hazard Mitigation Planning Committee	Working on during this planning cycle
b. Explore regional hazard mitigation plans with surrounding counties. <i>Priority: Moderate</i>	All Hazards	More than 5 years	Hazard Mitigation Grant funds	Hazard Mitigation Planning Committee, Surrounding county officials	Working on during this planning cycle

GOAL 4: Encourage NC Building Code to strengthen building codes and incorporate those higher standards for hazard resistance to mitigate structure damage.

<i>Action Steps</i>	<i>Hazard Addressed</i>	<i>Time Frame</i>	<i>Funding</i>	<i>Responsible Party</i>	<i>Status</i>
a. Send delegation to Code Council <i>Priority: Moderate</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding, Winter Weather, Earthquake	Less than 5 years	Staff Time	Inspections	Incomplete

GOAL 5: Maintain participation and membership in the National Flood Insurance Program (NFIP)

<i>Action Steps</i>	<i>Hazard Addressed</i>	<i>Time Frame</i>	<i>Funding</i>	<i>Responsible Party</i>	<i>Status</i>
a. Support the NC Floodplain Mapping Program in updating flood maps as needed <i>Priority: High</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado	On going	Staff Time	Planning	Complete

GOAL 6: Continue participation in the Community Rating System (CRS) Program

Action Steps	Hazard Addressed	Time Frame	Funding	Responsible Party	Status
a. Adopt appropriate land use or other regulatory polices/ordinances that assist repetitive loss properties. <i>Priority: Moderate</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding, Winter Weather, Earthquake	More than 5 years	Staff Time	Planning	Complete
b. Investigate the feasibility of adopting higher standards such as freeboard and protection of critical facilities <i>Priority: High</i>	Nor'easter, Hurricane, Severe Thunderstorm, Tornado, Flooding, Winter Weather, Earthquake	More than 5 years	Staff Time	Planning	Complete
c. Develop a joint public outreach document that addresses all hazards (published by the Planning and Emergency Management Departments) <i>Priority: High</i>	All Hazards	Less than 5 years	Staff Time	Planning, Emergency Management	Incomplete

GOAL 7: Enhance existing or create new policies and ordinances that will help reduce the damaging effects of hazards on the environment.

Action Steps	Hazard Addressed	Time Frame	Funding	Responsible Party	Status
a. Protect/enhance landforms that serve as natural mitigation features by promoting dune grass plantings, installation of sand fencing and other appropriate measures <i>Priority: High</i>	Nor'easter, Hurricane, Flooding, Coastal Erosion	Less than 5 years	Staff	County Manager, Planning	Incomplete
b. Retain vegetation and require buffers in areas adjacent to wetlands, water bodies and Maritime forests <i>Priority: Moderate</i>	Nor'easter, Hurricane, Flooding, Coastal Erosion	Less than 5 years	Staff	Planning, Soil Conservation	Complete
c. Direct development away from high-risk and vulnerable areas and establish redevelopment standards that decrease hazard risk <i>Priority: Moderate</i>	Nor'easter, Hurricane, Flooding, Coastal Erosion	More than 5 years	Staff	Planning	Complete

GOAL 8: Continue to educate public about how to develop and retrofit their properties against hazards.

Action Steps	Hazard Addressed	Time Frame	Funding	Responsible Party	Status

a. Create an ordinance to require that all utility lines will be buried in areas of new development <i>Priority: Moderate</i>	Nor'easters, Hurricane, Severe Thunderstorm, Tornado	Less than 5 years	Staff time	Planning	Complete
b. Develop an annual household hazardous materials collection site. <i>Priority: High</i>	Flood, Extreme Heat	On going	Grant General Fund	Public Works	Complete
c. Open a permanent hazardous materials collection site <i>Priority: Moderate</i>	Flood, Extreme Heat	More than 5 years	Grant General Fund	Public Works	Incomplete
d. Encourage community participation in the Fire Wise program <i>Priority: High</i>	Wildfire	On going	Staff Time Grant	Fire Marshal	Complete
e. Encourage use of sprinkler systems in residential structures with emphasis on beach communities <i>Priority: Moderate</i>	Wildfire	On going	Staff Time Grant	Fire Marshal	Complete
f. Create fire/draught resistant plant list <i>Priority: High</i>	Wildfire, Drought	Less than 5 years	Staff	Planning	Complete
g. Provide and educate people about fire/draught resistant plant list <i>Priority: Moderate</i>	Wildfire, Drought	On going	Staff	Fire Marshal	Complete
GOAL 9: Protect the most vulnerable populations, buildings, and critical facilities through implementation of cost-effective and technically feasible mitigation actions.					
Action Steps		Time Frame	Funding	Responsible Party	Status
a. Survey County owned property to retrofit for hazards <i>Priority: High</i>	Nor'easter, Flood, Hurricane, Severe Thunderstorm, Tornado, Winter Weather, Wildfire, Earthquake	Less than 5 years	Staff time	Public Works	Incomplete
b. Survey County owned property to mitigate against hazards	Nor'easter, Flood, Hurricane, Severe Thunderstorm, Tornado, Winter Weather, Wildfire, Earthquake	More than 5 years	General Fund	County Engineer, Planning	Incomplete

<i>Priority: High</i>				Grant		
c. Establish appropriate buffers/setbacks between critical facilities and hazardous materials, operations and uses	Nor'easter, Flood, Hurricane, Severe Thunderstorm, Tornado, Winter Weather, Wildfire, Earthquake	On going	Staff	County Engineer, Planning		Incomplete
<i>Priority: High</i>			General Fund			
d. Continue to update and maintain flood maps and other hazard maps	Nor'easter, Flood, Hurricane, Severe Thunderstorm, Tornado, Winter Weather, Wildfire, Earthquake	On going	Staff	Planning, GIS		Complete
<i>Priority: High</i>						
e. Update and amend County ordinances as needed	Nor'easter, Flood, Hurricane, Severe Thunderstorm, Tornado, Winter Weather, Wildfire, Earthquake	On going	Staff	Planning		Complete
<i>Priority: High</i>						

GOAL 10: Enhance existing or create new policies and ordinances that will help reduce the damaging effects of hazards.

<i>Action Steps</i>	<i>Hazard Addressed</i>	<i>Time Frame</i>	<i>Funding</i>	<i>Responsible Party</i>	<i>Status</i>
a. Clarify and strengthen the Maritime Forest Ordinance	Flooding, Drought	Less than 5 years	Staff time	Planning	Complete
<i>Priority: High</i>					
b. Educate property owners and visitors on the benefits of dune grasses and vegetation preservation	Flooding, Drought	On going	Staff time	Tourism, PIO	Incomplete
<i>Priority: Moderate</i>					
c. Encourage clustering of residential lots outside of hazard areas in subdivision design/review and discourage development intensity and infrastructure improvements in known hazard areas	Flooding, Drought	Less than 5 years	Staff time	Planning	Complete
<i>Priority: High</i>					
d. Preserve natural environmental features to naturally absorb water run-off and serve as wind buffers	Nor'easter, Flood, Hurricane, Tornado	On going	Staff	Planning	Complete
<i>Priority: High</i>					

GOAL 11: Protect the public health, safety and welfare by increasing public awareness of hazards and by encouraging collective and individual responsibility for mitigating hazard risks.

Action Steps	Hazard Addressed	Time Frame	Funding	Responsible Party	Status
a. Educate on household hazardous materials <i>Priority: High</i>	Flood, Extreme Heat, Infectious Disease	On going	Staff time	PIO, EM	Incomplete
b. Expand publications to include other languages <i>Priority: Low</i>	All Hazards	Less than 5 year	Staff time	PIO	Incomplete
c. Continue communicating with other counties about hazard mitigation <i>Priority: Moderate</i>	All Hazards	On going	Staff time	EM	Complete
d. Continue to work on requirement for a real estate disclosure statement for home buyers and renters <i>Priority: Moderate</i>	Flooding	Less than 5 years	Local real estate Staff time	BOC, North Carolina Real Estate Commissions	Incomplete
e. Evaluate effectiveness of Currituck's warning systems <i>Priority: High</i>	All Hazards	On going	Staff Time	Public Safety Depts.	Complete
f. Continue to develop Community Emergency Response Teams (CERT) <i>Priority: High</i>	All Hazards	On going	Private, Staff time	EM	Complete
g. Create curriculums for all hazards preparedness to present at community meetings <i>Priority: High</i>	All Hazards	Less than 5 years	PIO, EM	PIO, EM	Incomplete

GOAL 12: Improve technical capability to respond to hazards and to improve the effectiveness of hazard mitigation action hazard risks.

Action Steps	Hazard Addressed	Time Frame	Funding	Responsible Party	Status
a. Improve radio communications throughout public safety <i>Priority: High</i>	All Hazards	Less than 5 years	Local, Grants	Public Safety Depts.	Complete
b. Maintain and improve current technology <i>Priority: High</i>	All Hazards	On going	Local/State/Federal	BOC, Public Safety Depts.	Complete

c. Provide continuous training and information for first responders in hazard response <i>Priority: High</i>	All Hazards	On going	Local Regional Grants	BOC, Public Safety Depts.	Complete
d. Improve water safety and water response <i>Priority: High</i>	Rip Currents	Less than 5 years	Local	Public Safety Depts., Property Management Companies, Realtors	Complete
e. Coordinate response to bridge incidents, most specifically the new Mid-County Bridge and Wright Memorial Bridge <i>Priority: Moderate</i>	All Hazards	Less than 5 years	Local, State	Local, State, Federal	Complete
f. Facilitate post-disaster and recovery plans with the private sector <i>Priority: High</i>	Nor'easter, Flood, Hurricane, Severe Thunderstorm, Tornado, Winter Weather, Wildfire	Less than 5 years	Staff Time	Public Safety Depts.	Complete
g. EOC/Public Safety Facility <i>Priority: High</i>	All Hazards	More than 5 years	Local, Regional Funding	Public Safety, BOC	Incomplete

Dare County Mitigation Status Update

PREVENTATIVE			
Goals: 1. Improve stormwater drainage and land management preparation for flooding. 2. Assist property owners with safe and efficient clean up after storm events			
Action	Hazard	Status	Comments
Identify Funding	Hurricanes, Nor'easters, Flooding, Thunderstorms, Tide Flooding	Ongoing	Work with Dare County Soil and Water board to identify and secure grants as opportunities are available.
Identify Problem Areas	Hurricanes, Nor'easters, Flooding, Thunderstorms, Tide Flooding	Not Complete	No dedicated County funding for stormwater drainage plan
Prioritize and Fund Critical Drainage Projects	Hurricanes, Nor'easters, Flooding, Thunderstorms, Tidal Flooding	Ongoing	Grants funds are secured when available to assist homeowners with drainage improvements
Enforce ordinance preventing fill or structures without a drainage plan	Hurricanes, Nor'easters, Flooding, Thunderstorms, Tidal Flooding	Ongoing/Met	Regulations from Flood Ordinances for V zone structural fill enforced as appropriate
2a Identify Available Resources	Hurricanes, Nor'easters, Flooding, Thunderstorms, Tide Flooding	Ongoing/Met	Resources are identified during individual storm events
2b Public Education	Hurricanes, Nor'easters, Flooding, Thunderstorms, Tidal Flooding	Ongoing	Annual CRS mailing addresses drainage methods/ storm recovery
2c Fund and Implement	Hurricanes, Nor'easters, Flooding, Thunderstorms, Tidal Flooding	Ongoing	Storm clean-up/debris removal activities completed as needed after any storm event

Property Protection Goals: 3. Increase the number of properties that meet and exceed BFE.			
Action	Hazard	Status	Comments
3a Identify the Most Vulnerable Structures Within the County	Hurricanes, Nor'easters, Flooding, Thunderstorms, Coastal Erosion, Tidal Flooding, Tsunami	Ongoing	New FIRM map expected to be released in 2014; to be effective in 2015
3b Develop Plan	Hurricanes, Nor'easters, Flooding, Thunderstorms, Coastal Erosion, Tidal Flooding, Tsunami	Ongoing / Being Reviewed	Hazard Mitigation Plan scheduled for update in 2015, initial meeting with committee scheduled for early December 2013.
3c Identify Funding	Hurricanes, Nor'easters, Flooding, Thunderstorms, Coastal Erosion, Tidal Flooding, Tsunami	Ongoing	Additional grant funding to elevate 44 homes secured by Dare County after Hurricane Irene, work on elevation to be completed by 2015
3d Prioritize Funding	Hurricanes, Nor'easters, Flooding, Thunderstorms, Coastal Erosion, Tidal Flooding, Tsunami	Ongoing	Elevation of structures identified as preferred mitigation activity for grant funds.
3e Implement Plan to Reduce Potential Damage in Future	Hurricanes, Nor'easters, Flooding, Thunderstorms, Coastal Erosion, Tidal Flooding, Tsunami	Ongoing / Being Reviewed	Repetitive loss map/plan identified as CRS goal for 2015 update
Natural Resource Protection			
Goals: 4. Advocate the Use of Existing (2002) State and Federal Regulatory Programs for Protecting and Preserving Coastal Wetland Areas of Environmental Concern. 5. Continue to Support the U.S. Army Corps of Engineers Permit Program.			
Action	Hazard	Status	Comments
4a Implementation and Enforcement of CAMA Use Standards for Coastal Wetland AECs as Identified under 15NCAC7H, Section 020S and 0208	Hurricanes, Nor'easters, Tidal Flooding	Ongoing	Dare County works with CAMA for coastal wetlands issues
4b Continue to Administer the CAMA Local Enforcement Program and Maintain the Staff Necessary for this Work	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	Dare County continues to provide LPO assistance in unincorporated Dare County
5a Refer Applicants to U.S. Army Corps of Engineers Permit Program, Specifically Section 404	Flooding	Ongoing	As needed for individual development projects and subdivision projects
5b Facilitate Implementation of Permit Program for Wetland Management	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	No local wetland permit program established, continue to rely on Federal and State programs

Structural Projects			
Goal: 6. Improve traffic flow on NC 12 7. Protect transportation routes, including the Bonner Bridge			
Action	Hazard	Status	Comments
6a Two lane highway NC 12 to improve traffic flow	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	County staff works closely with NCDOT officials
6b Coordinate traffic lights to create efficient flow	Flooding	Ongoing	County staff works closely with NCDOT officials
7a Replace the Bonner Bridge	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	NCDOT working to replace bridge; lawsuits from environmental courts have resulted in delays
Public Information			
Goals: 8. Require Realtors to Disclose Flood Zones. 9. Enhance NFIP Information. 10. Develop Emergency Response Plan for Road/Bridge Loss. 11. Advocate for Beach Replacement. 12. Develop Educational Brochures on Additional Hazards that could Possibly Occur Within the County.			
Action	Hazard	Status	Comments
Ba Develop Relations with Real Estate Community	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	As needed
Sb Meet With Realtors to Coordinate Public Education Activities	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	As needed
Be Develop Floodplain Map for Public Dissemination	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Met	Flood zones on County webpage
Bd Lobby State Legislators	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	As needed
Be Lobby Local Realtors Board	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	As needed
9a Circulate Brochure on NFIP	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	CRS outreach activities completed annually; brochures available in Planning offices
9b Put Flood Maps on the County's Website	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Met	Flood maps on County webpage
9c Continue to Participate in CRS Activities	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	CRS participation continues
9d Update F.I.R.M.	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	New FIRM for Dare County expected to be released in 2014; effective 2015
9e Continue Storm Readiness	Hurricanes, Nor'easters, Tidal Flooding, Flooding	Ongoing	
Develop Emergency Response Plan for Road/Bridge Loss			
B Advocate for Beach Replacement	Bridge Collapse Coastal Erosion	Ongoing	County staff works closely with NCDOT officials County working with NCDOT for

CRS 510 Floodplain Management
Progress Report for
Floodplain Management/Hazard Mitigation Plan

1. Name of Plan: Dare County Multi-Jurisdictional Hazard Mitigation Plan
Date Adopted: July 7, 2010
Location where copies are available for review: Town of Duck Administration Offices

Duck Hazard Mitigation Action Plan (Updated Items Highlighted in Yellow)

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
Preventive Goals:						
1. Continue enforcement of current hazard mitigation regulations						
2. Locate a regional debris removal area						
3. Improve stormwater drainage in vulnerable areas						
4. Preserve, protect, and enhance the Atlantic Ocean and Currituck Sound shorelines and ensure future generations are able to enjoy its beauty and bounty and can continue to use the beach and water for active and passive recreation and leisure activities						
5. Reduce loss of life, property, and resources due to wildland/urban interface fires						
1a	Hurricanes, Nor'easters	General Fund	Town Council	Ongoing	High	Ongoing/met
2a	Hurricanes, Nor'easters, Thunderstorms	General Fund	Town Manager	January 2005	High	Completed (Identification of the Newbern property)
3a	Hurricanes, Nor'easters, Thunderstorms	General Fund	Planning Board	Ongoing	High	NCDOT drainage study completed – January 2006; additional work continues to resolve localized roadway flooding
3b	Coordinate town roles and state roles in stormwater management problems	General Fund	Planning Board	Ongoing	High	Same as above

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
3c Provide funding for stormwater improvements	Hurricanes, Nor'easters, Thunderstorms	General Fund	Town Council	Ongoing	Medium (environmentally sound and technically feasible)	Town/NC DOT have completed major stormwater project on NC 12 in South Duck. Engineering has been completed to rectify localized drainage projects on other parts of NC 12 and funding is being provided in the CIP annually. Drainage Project on NC 12 at Waterfront Shops/Ston White has been funded in CIP for FY 2014.
4a Adopt and apply development policies that balance protection of natural resources and fragile areas with residential and economic development	Hurricanes, Nor'easters, Thunderstorms, Wildfire, Flooding	N/A	Town Council	Ongoing	Medium (environmentally sound and technically feasible)	Ongoing – Adopted Town Code amendments including Tree and Vegetation Preservation, Land Disturbing Activities, Beach and Dune Management, Wind and Solar Energy, Ocean and Sound Overlay, Parking, Lot Coverage, etc. Currently working on ordinances related to Stormwater Management and low-impact development.
4b Develop policies that minimize threats to life, property, and natural resources resulting from development located in or adjacent to hazard areas, such as those subject to erosion, high winds, storm surge, flooding, or sea level rise	Hurricanes, Nor'easters, Thunderstorms, Wildfire, Flooding	N/A	Town Council	Ongoing	Medium (environmentally sound and technically feasible)	Ongoing – Adoption of revised Flood Insurance Rate Maps and Flood Damage Prevention Ordinance, Local Participation in CAMA LPO program, completed enrollment in FEMA Community Rating System, Enforcement of NC State Building Code Revisions and Amendments including Wind-Borne Debris Provisions. The Town has also revised policies related to oceanfront development including additional setbacks for accessory structures, new dune walkway standards, and remedies for structures encroaching on the ocean beach.
4c Develop location, density, and intensity criteria for new, existing development and redevelopment including public facilities and infrastructure so that they can better avoid or withstand natural hazards	Hurricanes, Nor'easters, Thunderstorms, Wildfire, Flooding	N/A	Town Council	Completed 2012	Medium (environmentally sound and technically feasible)	Ongoing – Town Code revisions including lot coverage regulations, limitations on residential dwelling size (ratio of number of bedrooms to lot area), increased setbacks for accessory structures, additional elevation requirements for V-Zone structures.

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
5a	Identify areas most at risk and investigate strategies to reduce risk from wildland/urban interface fires	N/A	Fire Department/ Town Staff	Ongoing	Medium (environmentally sound and technically feasible)	<i>New Action Item</i>
5b	Investigate how the Town of Duck can become a Firewise Community	N/A	Fire Department/ Town Council	Ongoing	Medium (environmentally sound and technically feasible)	<i>New Action Item</i>
5c	Collaborate with DVFD and the Town of Duck to educate the homeowners, developers and landscapers on designing fire safe communities.	N/A	Fire Department/ Town Council	Ongoing	Medium (environmentally sound and technically feasible)	<i>New Action Item</i>
Property Protection Goals:						
6.	Educate property owners on dune maintenance effectiveness					
7.	Develop policies and educate property owners on proper siting and coastal construction techniques					
8.	Encourage and promote through various methods the proper installation, use, and storage of propane					
6a	Develop dune maintenance education materials	General Fund / CAMA grants	Consultant / NC Division of Coastal Management/Sea Grant	Ongoing	High	Ongoing – Town distributes information regarding proper sand fence installation techniques and native vegetation information; the Town also provides copies of the NC Sea Grant Publication “The Dune Book”, upon request.
6b	Make education materials available on-line	General Fund	Duck Webmaster	Ongoing	High	Partially Complete – Town maintains links to FEMA and Division of Coastal Management websites regarding NFIP and CAMA. Additional information needs to be provided regarding coastal construction techniques, retrofitting, and anchoring of underground storage tanks.
7a	Provide information on good construction techniques for coastal communities	General Fund	Duck Webmaster/ Town Staff	Ongoing	High	Ongoing – Provide FEMA/NC Department of Insurance publications/ resources as mentioned above.

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
7b Develop good construction materials information	Hurricanes, Nor'easters	General Fund	Planning Board	Ongoing	High	New strategy implemented to provide existing FEMA publications to the general public via the internet and maintain an in-house library of these materials.
7c Enroll in the FEMA Community Rating System and take advantage of the various mitigation strategies promoted by this program	Hurricanes, Nor'easters, Flooding	General Fund	Town Council/ Department of Community Development	Ongoing	High	Enrollment in the program has been completed. However, the Town continues to develop actions and strategies that will lower its CRS rating and therefore provide lower flood insurance premiums to property owners within the Town.
8a Research the use and storage of propane	Hurricanes, Nor'easters, Flooding	General Fund	Fire Department / Planning Board	Ongoing	High	Not Complete – The Town needs to investigate the legal authority to regulate underground storage tanks since they are under the control of the NC Dept. of Agriculture.
8b Draft a “propane” ordinance	Hurricanes, Nor'easters, Flooding	General Fund	Planning Board	Ongoing	High	Not Complete – The Town needs to investigate the legal authority to regulate underground storage tanks since they are under the control of the NC Dept. of Agriculture.

Natural Resource Protection Goals:

9. Mitigate ocean overwash and sound erosion
10. Develop and dedicate more open space
11. Support the continued management of oceanfront shoreline development to protect and preserve the natural and recreational resources along the oceanfront
12. Re-nourish and maintain the ocean beach

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
9a Identify vulnerable areas and conditions	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Town Council	Ongoing	High	Ongoing – The Town has been monitoring high oceanfront erosion areas by documenting storm damage and taking photos/video. The Town has used GIS information provided by Dare County and the North Carolina Division of Coastal Management to monitor movement of the oceanfront shoreline. Additionally, a beach erosion study has been developed for the Town by the USACOE and Coastal Planning and Engineering which documents erosion patterns and existing conditions. NCDOT in conjunction with the Towns of Duck and Southern Shores conducted a drainage study on NC 12 to determine areas vulnerable to flooding. The Town needs to develop a method to track soundside erosion.
9b Develop public information about the uses of sand, grasses, and fences	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Town Council	Ongoing	High	Completed – The Town distributes information regarding proper sand fence installation techniques and native vegetation information; the Town also provides copies of the NC Seagrant Publication, "The Dune Book", upon request.
9c Disseminate the public information	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Town Council	Ongoing	High	Ongoing – the Town maintains a database of oceanfront property owner contact information and routinely distributes information on dune planting and sand fencing, oceanfront building regulations, and efforts to re-nourish areas with eroded beaches.
10a Identify available property for open space	Hurricanes, Nor'easters, Coastal Erosion, Wildfire	General Fund	Town Council	Ongoing	High	Ongoing – The Town has purchased an 11-acre park in the center of the Village Commercial area which is partially maintained as open space. The Town is 90 percent developed and there are few other areas available to purchase and maintain as open space. Town funds for this activity are limited. Future activities in this area will largely depend on the success of the Town in acquiring property with available grants.

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
10b Acquire the property through donation and purchase or dedication of easements	Hurricanes, Nor'easters, Coastal Erosion, Wildfire	General Fund	Town Council	Ongoing	Medium (environmentally sound and technically feasible)	Ongoing. The Town is in the process of acquiring easements to construct an elevated soundside boardwalk. No other projects are being considered at this time.
10c Develop and maintain the open space	Hurricanes, Nor'easters, Coastal Erosion, Wildfire	General Fund	Town Council	Ongoing	Medium (environmentally sound and technically feasible)	Ongoing. The Town drafted a Municipal Property Master Plan in 2004 in order to develop the Town Park property and this has now been completed. No other open space areas are currently being pursued for acquisition by the Town.
11a Support programs and initiatives to annually assess shoreline changes (erosion and accretion)	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Town Council	Ongoing	High	Ongoing – The Town has been monitoring high oceanfront erosion areas by documenting storm damage and taking photos/video. The Town has used GIS information provided by Dare County and the North Carolina Division of Coastal Management to monitor movement of the oceanfront shoreline. Additionally, a beach erosion study has been developed for the Town by the USACOE and Coastal Planning and Engineering which documents erosion patterns and existing conditions. The Town has enacted an additional tax to support beach management activities. It is anticipated that some of the revenue will be used in future years to collect detailed beach and dune profile information that will allow the town to track shoreline change.
11b Develop policies to deal with encroaching development on the Town beaches.	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Town Council/ Town Manager	September 2011	High	The Town has adopted an ordinance to limit the encroachment of structures on the beach. Additionally, new setbacks have been adopted for accessory structures such as pools and dune decks to provide additional protection to the dune system. The Town has also prohibited sandbags.

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
11c Develop policies to preserve native dune plants and vegetation within the Town's Dune System	Hurricanes, Nor'easters, Coastal Erosion	N/A	Town Council	April 2009	High	An ordinance was adopted to prohibit destroying dune vegetation and altering dunes. The Town annually funds dune planting and sand fencing projects.
12a Stay informed and involved relative to Federal, State, and/or regional studies and initiatives concerning beach re-nourishment and maintenance	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Town Council	Ongoing	High	Ongoing. The Town participates in the annual program established by the Dare County Shoreline Commission to provide funds for beach maintenance. The Town is actively participating in a beach nourishment project in conjunction with Dare County and the Towns of Kill Devil Hills and Kitty Hawk.
12b Work with and support efforts by CAMA concerning beach re-nourishment and maintenance	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Town Council	Ongoing	High	Ongoing. The Town participates in the CAMA LPO program and issues permits for regulated beach activities. The Town has adopted a Beach and Dune Management ordinance to protect dunes and dune vegetation. The Town is currently pursuing a strategy to nourish the beach.
12c Seek ways to ensure residents receive information and links to technical assistance from the Division of Coastal Management concerning beach re-nourishment and maintenance activities and options such as sand fencing	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Town Council	Ongoing	High	Ongoing. The Town provides information and issues CAMA permits to oceanfront property owners seeking to maintain their primary and frontal dunes. The Town website is used to provide this information as well.

Structural Project Goals:

13. Build the Mid-County Bridge
14. Address localized drainage problems on NC 12

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
13a Lobby the NC Board of Transportation and the NC Department of Transportation and NC Turnpike Authority (resolution and letter to staff members regarding environmental studies, attendance at meetings./public hearings	Hurricanes	NC DOT	Town Council	Ongoing	High	Ongoing. The Town Council has issued several resolutions to support the construction of the Mid-Currituck Bridge and to identify the Town's preferred design alternative for the project. The Town has sent letters to NCDOT and NC Turnpike Authority Staff providing comments on the project studies that have been underway for several years. The Town frequently discusses the project at regular Town Council meetings and is kept informed of the status of the project by Town staff and residents who serve on a local committee to support construction of the bridge.
14a Lobby the NC Board of Transportation and the NC Department of Transportation	Hurricanes	NC DOT	Town Council	Ongoing	High	Ongoing. The Town has worked with NCDOT to develop solutions to localized drainage problems on NC 12. NCDOT has completed a project to raise NC 12 in the southern portion of Town to address a flooding issue.
14b Identify capital projects to address drainage issues on NC 12	Hurricanes, Nor'easters, Flooding	General Fund	Town Council	Ongoing	High	Engineering has been completed to rectify localized drainage projects on other parts of NC 12 and funding is being provided in the CIP annually. Drainage Project on NC12 at Waterfront Shops/Stan White has been funded in CIP for FY 2014.
Public Information Goals:						
15.	Develop an emergency communications network					
16.	Develop effective public information regarding natural hazards and disseminate to citizens					
17.	Communicate hurricane information to tourists					
18.	Improve methods to communicate with property owners in areas most vulnerable to storm damage					
19.	Improve Ocean and Beach Safety through public education efforts and continued training of Ocean Rescue Personnel					
15a	Maintain a roster of business owners and homeowners associations	General Fund	Town Council	Ongoing	High	This Town is actively maintaining this information.

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority	Implementation Status
15b Continue to research methods to disseminate information	Hurricanes, Nor'easters, Tornadoes	General Fund	Town Council	Ongoing	High	Major improvements have been made to communicate with stakeholders. Use of social media and internet based communication tools has drastically improved the town's ability to disseminate and receive information.
16a Continue to identify who needs natural hazards information	Hurricanes, Nor'easters, Tornadoes	General Fund	Town Council	Ongoing	High	Ongoing
16b Continue to develop/disseminate this information (dune protection, wind, erosion)	Hurricanes, Nor'easters, Tornadoes	General Fund	Town Council	Ongoing	High	Ongoing.
16c Continue to research methods to get information to citizens	Hurricanes, Nor'easters, Tornadoes	General Fund	Town Council/Town Manager	Ongoing	High	Ongoing.
17a Develop/disseminate hurricane information to provide to tourists	Hurricanes, Nor'easters, Tornadoes	General Fund	Town Council	Ongoing	High	Ongoing.
17b Continue to disseminate the information through realtors and businesses	Hurricanes, Nor'easters, Tornadoes	General Fund	Town Council	Ongoing	High	Ongoing.
18a Develop and maintain a database of contact information for oceanfront property owners where storm damage is likely to occur	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Department of Community Development	Ongoing	High	This information has been collected and is being actively maintained by the Town.
18b Develop a method to post storm damage information on the Town website including property specific damage information	Hurricanes, Nor'easters, Coastal Erosion	General Fund	Department of Community Development	Ongoing	High	Property specific data has been posted to the Town's website via spreadsheet as it is collected by Damage Assessment teams. Photos of general damage have been posted to Facebook and other social media outlets to provide a summary of storm impacts.
19a Develop public education materials to educate beachgoers on beach safety (rip currents, beach holes, beach fires, etc.)	Rip Currents	General fund	Town Manager/ PIO/ Ocean Rescue	Ongoing	High	New signs have been developed for beach safety and beach rules. Additional rip current signs have been posted on rip-currents provide by NC SeaGrant

Kill Devil Hills Hazard Mitigation Action Plan

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority
Preventive Goals: <ol style="list-style-type: none"> 1. Reduce damages to existing and future development 2. Assist in maintaining a stable tax base by providing for sound use of land which may be located in storm hazard areas 3. Continue to monitor changes in building codes and materials and research construction techniques that can mitigate storm Damage 					
Planning and Zoning – Continue to enforce the zoning ordinance and amend when necessary Ordinances were enforced and amended.	Flooding, Hurricanes, Tropical Storms, Nor'easters	General Fund	Planning Dept, Board of Commissioners, Building Inspec.	Ongoing	High
Floodplain Regulations – Provide technical assistance to customers/citizens and continue to enforce current flood hazard ordinance Customers were provided technical assistance and flood damage prevention ordinance was enforced. Difficult construction below BFE violations were corrected and others in process.	Flooding, Hurricanes, Tropical Storms, Nor'easters	General Fund	Planning Dept, Building Inspector, Board of Commissioners	Ongoing	High
Open Space Preservation – Support efforts to preserve natural areas The Town took no action other than to maintain ownership of its natural areas	Flooding, Hurricanes, Tropical Storms, Nor'easters	N/A	Planning Dept	Ongoing	High
Stormwater Management – Continue to implement the stormwater management plan. The Stormwater Management Plan Update August 8, 2011. Concepts were implemented through site plan review. Drainage projects implemented through Streets Division.	Flooding, Hurricanes, Tropical Storms, Nor'easters	General Fund	Planning Dept, Public Services	Ongoing	Medium (environmentally sound and technically feasible)
Drainage System Maintenance – Continue mowing drainage ditches and conduct normal maintenance and storm event driven maintenance. Ditch maintenance was accomplished as scheduled throughout the year as well as	Flooding, Hurricanes, Tropical Storms, Nor'easters	General Fund	Public Services, NC DOT	Ongoing	High

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority
prior to and after storm events.					
Building Code – Monitor changes to the State Building Code and modify local regulations as necessary to minimize damage. Inspectors accomplished annual training and enforced revisions to building codes which became effective in 2012.	Flooding, Hurricanes, Tropical Storms, Nor'easters	N/A	Planning Dept, Building Inspector	Ongoing	High
Property Protection					
Goal: Minimize losses associated with storm events to individual properties and provide a framework for storm event reconstruction					
Relocation – Expedite permitting for the relocation of repetitive loss situations. No repetitive loss relocation opportunities were presented.	Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion	General Fund	Planning Dept	Ongoing	Low
Acquisition – Encourage repetitive loss properties to consider acquisition as a possible solution. The Town took no action other than outreach efforts.	Flooding, Hurricanes, Tropical Storms, Nor'easters	NC Division of Emergency Management, FEMA	Planning Director, Board of Comm.	Ongoing	Low (environmentally sound and technically feasible)
Building Elevation – Continue enforcing the base flood elevation requirement of the Town's Flood Damage Prevention Ordinance. The Town continued to enforce FDPO requiring documentation for new construction and additions to existing structures.	Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion	General Fund	Asst Planning Director, Building Inspector	Ongoing	High
Insurance – Maintain outreach efforts and continue making flood insurance available to the Town's residents. The Town continued its outreach efforts to educate citizens about flooding, flood insurance and the Biggert-Waters Insurance Reform Act of 2012 and Grimm Waters Act of 2014.	Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion	General Fund	Planning Dept, Town Clerk	Ongoing	High

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority
<p>Dune and Beach Maintenance – Continue ongoing beach nourishment efforts. The Town contracted an engineering consultant to provide engineering support and permitting services and offshore sand search for beach renourishment.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion</p>	<p>General Fund, US Army Corps of Engineers</p>	<p>Planning Director, Board of Comm.,</p>	<p>Ongoing</p>	<p>High</p>
<p>Natural Resource Protection Goal: Preserve and restore natural areas while maintaining the function of the floodplain</p>					
<p>Wetlands Protection – Continue to utilize the zoning ordinance and the Land Use Plan to protect wetlands. The Town continued implementation of the zoning ordinance and Land Use Plan to protect wetland areas.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters</p>	<p>General Fund</p>	<p>US Army Corps of Engineers, Planning Dept, NCDENR</p>	<p>Ongoing</p>	<p>High</p>
<p>Coastal Barrier Protection – Continue to support coastal barrier protection efforts by the State. The Town continued to support the State's coastal barrier protection by educating public on these efforts.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion</p>	<p>N/A</p>	<p>CAMA, Planning Dept</p>	<p>Ongoing</p>	<p>High</p>
<p>Erosion and Sediment Control – Continue to enforce local and state regulations. The Town continued to participate and enforce Erosion and Sediment Control Ordinance through plan approvals, site inspections and reporting to the State.</p>	<p>Flooding, Coastal Erosion</p>	<p>General Fund</p>	<p>Planning Dept</p>	<p>Ongoing</p>	<p>High</p>
<p>Areas of Environmental Concern (AECs) – Support local CAMA officer with compliance efforts within the AECs. The Town continued to participate, remain active, train and implement the CAMA Local Permit Officer Program.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion</p>	<p>General Fund</p>	<p>CAMA LPO</p>	<p>Ongoing</p>	<p>High</p>

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority
<p>Surface Water Quality – Preserve surface water quality and enhance water quality through stormwater management and zoning. The Stormwater Management Plan Update was implemented through site plan review (zoning). The update has a greater focus on water quality and includes strategies to preserve and enhance water quality.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion</p>	<p>General Fund</p>	<p>Planning Dept, Public Services</p>	<p>Ongoing</p>	<p>Medium (environmentally sound and technically feasible)</p>
<p>Maritime Forest Environmental Zoning District – Continue to enforce the Maritime Forest Environmental Zoning District. The Town continued to enforce the Maritime Forest Environmental District Ordinance (Zoning) to preserve the Town's maritime forest.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Wildfire</p>	<p>General Fund</p>	<p>Planning Dept</p>	<p>Ongoing</p>	<p>High</p>
<p>Emergency Services Goals: 1. Facilitate a safe and efficient evacuation and, where possible, reduce damage 2. Promote rebuilding and reconstruction in a prompt and orderly manner 3. Minimize prolonged business interruption, especially involving businesses providing critical supplies and services 4. Restore the community by minimizing difficulties in continuation of essential public and private services</p>					
<p>Flood Warning – Facilitate evacuation The Town continued to coordinate and participate with the Dare County Control Group in event of evacuation.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters</p>	<p>General Fund</p>	<p>Dare County Control Group</p>	<p>Ongoing</p>	<p>High</p>
<p>Flood Response – Coordinate efforts to expedite reconstruction and rebuilding efforts in cooperation with Dare County Emergency Management staff. The Town continued to coordinate and participate with the Dare County Emergency Management staff and Town staff.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion, Winter Storms,</p>	<p>General Fund</p>	<p>Planning Dept</p>	<p>Ongoing</p>	<p>High</p>

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority
<p>Flood Recovery – Coordinate efforts to expedite recovery. The Town continued to coordinate efforts within its organization and with state and local agencies.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion, Winter Storms</p>	<p>General Fund</p>	<p>Board of Commissioners, Planning Dept</p>	<p>Ongoing</p>	<p>High</p>
<p>Critical Facilities Protection – Take appropriate actions to prevent and/or minimize damages to critical facilities. The Town continued to train for preparedness, response and recovery and to protect critical facilities by utilizing shutters on windows of Town buildings. Accomplished scheduled maintenance of Town drainage ditches.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion, Winter Storms, Wildfire</p>	<p>General Fund</p>	<p>Police, Fire & Rescue, Public Works, NC Dominion Power</p>	<p>Ongoing</p>	<p>High</p>
<p>Health and Safety Maintenance – Develop ongoing protocols to assure the maintenance of critical public services. Town Departments were exercised and trained for preparedness, response and recovery.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion, Winter Storms, Wildfire</p>	<p>General Fund</p>	<p>Police, Fire & Rescue, Public Works, Dare County Emergency Management</p>	<p>Ongoing</p>	<p>Medium (environmentally sound and technically feasible)</p>
<p>Structural Projects</p>					
<p>Goal: Implement flood control measures to protect people and property and assure continuation of essential public services</p>					
<p>Reservoirs –</p> <ol style="list-style-type: none"> Continue protection efforts concerning the Fresh Pond. The Town continued to support Fresh Pond AEC although it is no longer used as a potable water source. Maintain liaison with NC Division of Coastal Management concerning the development of the Kill Devil Hills Land Use Plan. The Town continued progress on update of its comprehensive Land Use Plan for review and approval by the Coastal Resources 	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Winter Storms</p>	<p>General Fund</p>	<p>Planning Dept, CAMA</p>	<p>Ongoing</p>	<p>High</p>

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority
Commission.					
Stormwater Management – Continue to implement the stormwater management plan. The Stormwater Management Plan Update August 8, 2011. Concepts were implemented through site plan review.	Flooding	General Fund	Public Services	Ongoing	Medium (environmentally sound and technically feasible)
Beach Nourishment – Encourage beach nourishment as a storm protection measure and search for funding. The Town contracted an engineering consultant to provide engineering support and permitting services and offshore sand search for beach renourishment.	Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion	Town of Kill Devil Hills and Dare County	Board of Commissioners, Dare County Commissioners	Ongoing	High
Public Information Goal:					
<ol style="list-style-type: none"> 1. Inform and advise property owners and visitors about potential damage from flooding 2. Use the Town's website to disseminate hazard mitigation information 					
Map Information – Maintain updated flood map information for citizens and customers. The Town continued to maintain updated flood maps and provided information to citizens through public outreach and customers.	Flooding, Hurricanes, Tropical Storms, Nor'easters	NC Division of Emergency Management	NC Division of Emergency Management, Planning Dept	Ongoing	High
Library – Compile and maintain current information in the Kill Devil Hills Floodplain Management Library. The Town continued to maintain current information in the Floodplain Management Library. The Town began scanning old documents to maintain and enhance digital archives.	Flooding, Hurricanes, Tropical Storms, Nor'easters	General Fund	CRS Coordinator	Ongoing	Medium (cost-effective and technically feasible)

Goals and Actions	Hazard	Funding Sources	Responsibility	Target Completion Date	Priority
<p>Technical Assistance – Continue to utilize technical assistance from state and federal agencies and private consultants to provide appropriate technical assistance to citizens and customers. The Town continued to utilize outside resources to provide high level of service to its citizens.</p>	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion, Winter Storms, Wildfire</p>	<p>N/A.</p>	<p>Building Inspector, Planning Dept.</p>	<p>Ongoing</p>	<p>High</p>
<p>Outreach Projects –</p> <ol style="list-style-type: none"> 1. Initiate outreach projects to inform the public on Town and County initiatives that will reduce hazard related losses of property and life. The Town continued annual outreach projects through joint mailings, public library and Town website. 2. Work with print, radio, and television media to effectuate outreach efforts in cooperation with Dare County and neighboring municipalities. The Town provided printed information and continues to air a hurricane awareness video for television and provided web site updates for its citizenry. 	<p>Flooding, Hurricanes, Tropical Storms, Nor'easters, Coastal Erosion, Winter Storms, Wildfire</p>	<p>General Fund</p>	<p>CRS Coordinator</p>	<p>Ongoing</p>	<p>High</p>

CRS 510 Floodplain Management 2014 Progress Report for Floodplain Management /Hazard Mitigation Plan

TOWN OF KILL DEVIL HILLS Hazard Mitigation Plan - Adopted July 12, 2010
Copies available for review at the Kill Devil Hills Planning Department

Review of Action Plan

Action Plan review is below in red text

Implementation

Most action items found in the plan were implemented in the past year. Following is a discussion on why some objectives were not fully implemented:

Open space preservation – The Town was unable to secure more open space in the floodplain due to budgetary concerns, however was able to maintain existing inventory of open space. The Town established a committee to study the remaining 41 acres of open space on the Baum Tract.

Relocation/acquisition of repetitive loss properties - The Town was unable to relocate or acquire repetitive losses due to budgetary limitations however relocation or elevation of structures was encouraged.

Compile and maintain current information in the Kill Devil Hills Floodplain Management Library – Archives Flood Maps have been scanned and are stored on the Town server which is regularly backed up. All elevation Certificates received to date have been scanned and cataloged in laser fiche in the Planning Department. This is a useful tool for citizens and staff.

Recommendations

No recommendations are included for new or revised projects.

Dissemination

The 2014 Progress Report will be submitted to the Kill Devil Hills Board of Commissioners, October 13, 2014 and released to the media and public on that date.

September 16, 2014

Memorandum

To: Planning Board

From: Meredith Guns, Assistant Planning Director

Subject: 2014 Progress Report for Floodplain Management/Hazard Mitigation Plan

Attached is a progress report on action items in the Town's Hazard Mitigation Plan. As you may recall, the Town joined the county in a multijurisdictional Hazard Mitigation Plan in 2010. Our plan is an appendix of the Dare County Plan. To maintain Town participation in the National Flood Improvement Program/Community Rating System, the action items outlined in the plan must to be reviewed yearly. The progress report reviews each action item outlined in the plan including accomplishments for the year. This report also analyzes implementation of the action items and provides recommendations for new projects or new objectives for the upcoming year.

In order to meet the requirements of the CRS, the progress report must be reviewed in an open meeting, released to the media and available to the public each year.

No action is required on this item.

October 13, 2014

Memorandum

To: Debbie Diaz, Town Manager

From: Greg Loy, Planning Director

Subject: 2014 Progress Report for Floodplain Management/Hazard Mitigation Plan

Attached is a progress report on action items in the Town's Hazard Mitigation Plan. As you may recall, the Town joined the County in a multijurisdictional Hazard Mitigation Plan in 2010. Our plan is an appendix of the Dare County Plan. To maintain Town participation in the National Flood Insurance Program/Community Rating System, the action items outlined in the plan must be reviewed yearly. The progress report reviews each action item outlined in the plan including accomplishments for the year. This report also analyzes implementation of the action items and provides recommendations for new projects or new objectives for the upcoming year.

In order to meet the requirements of the CRS, the progress report must be reviewed by the Board of Commissioners in an open meeting, released to the media and made available to the public each year.

No action is required on this item.

October 13, 2014

Memorandum

To: Media and Public

From: Bryan Brightbill, Planner

Subject: 2014 Progress Report for Floodplain Management/Hazard Mitigation Plan

Attached is a progress report on action items in the Town's Hazard Mitigation Plan. As you may recall, the Town joined the County in a multi-jurisdictional Hazard Mitigation Plan in 2010. Our plan is an appendix of the Dare County Plan. The progress report reviews each action item outlined in the plan including accomplishments for the year. This report also analyzes implementation of the action items and provides recommendations for new projects or new objectives for the upcoming year.

Progress Report for Town of Kitty Hawk Hazard Mitigation Plan

**Date of Plan Adoption: October 5, 2009
(later incorporated into the Dare County HMP)**

REVIEW OF THE ACTION PLAN/IMPLEMENTATION

This section includes a review of each recommendation in the action plan, including a statement on how much was accomplished during the previous year. This section also includes a discussion on why any objectives were not reached or why implementation is behind schedule.

1. PREVENTIVE GOALS

- **GOAL: Pursue beach and dune renourishment as funding becomes available.**

Action: Implement beach and dune renourishment projects as funding becomes available.

Responsible Person: Town Council, Public Works Department

Completion Date: Ongoing

Funding: Federal & State Grants/Programs, County Shoreline Management Commission

Prioritization: High

STATUS: The Town of Kitty Hawk is actively proceeding with efforts to design, permit, and fund beach/dune renourishment. In 2013, Dare County agreed to provide \$250,000 toward the costs of completing preliminary studies, design, and permitting for beach renourishment. Kitty Hawk spent \$22,454 to hire an engineering consultant to prepare a beach management conceptual plan that was presented at the Town Council meeting on September 3, 2013. In 2013, the Town entered into an agreement with Dare County to help fund the planned beach renourishment project. The County committed over \$13.5 million toward this project.

In January 2014, The Town entered into a \$619,773 contract with an engineering consultant to conduct studies, design, engineer, and obtain permits to implement a beach renourishment project along the entire Kitty Hawk oceanfront. The Town is scheduled to consider the adoption of special tax districts to help fund projects relating to beach renourishment and stormwater damage reduction in the Fall of 2014.

In 2008-09, the Town of Kitty Hawk installed sand fencing on the primary oceanfront dune along nearly three miles of beach. The installation of sand fence and vegetation allows windblown sand to accumulate and form dunes. The Town's Public Works Department has maintained and repaired the sand fencing when damaged by storms.

During 2013, it is estimated that approximately one-half mile of the sand fencing was repaired or replaced following storms.

To supplement public efforts to maintain the primary dunes, the Town has distributed educational materials to the public (including copies of *The Dune Book*) and makes “Stay off the Dune” signs available to oceanfront property owners.

- **GOAL: Resolve identified stormwater drainage issues.**

Action: Implement stormwater drainage improvements per the studies/plan.

Responsible Person: Town Manager, Public Works Department

Completion Date: Ongoing

Funding: General Fund, State Transportation Funds

Prioritization: High

STATUS: In 2011, the Town of Kitty Hawk and N.C. Department of Transportation jointly funded a stormwater management plan that identifies areas prone to significant flooding and offers recommendations for improving stormwater drainage issues in each of these areas. A key component of the plan is the identification of specific projects and funding sources for the potential solutions.

In 2012, the Town hired an engineering consultant to complete more detailed specifications and begin the permitting process for installation of drainage improvements in seven (7) of the areas facing stormwater drainage issues. Officials from the Town and the consultant met with state environmental permitting agencies and received approval to implement a series of temporary stormwater pumping systems to be used in the immediate aftermath of storms causing significant flooding.

The Town of Kitty Hawk has subsequently submitted requests for grant assistance with the design, permitting, and construction of these projects. The more fiscally manageable projects have been reviewed on an annual basis and funding incorporated into the Town’s budget and 5-year Capital Improvements Plan. In September 2013, the Town spent \$26,759 to construct the first of the stormwater pumping systems in the Hawks Street area. In May 2014, the second stormwater pumping system was completed in the area of Poseidon/Goosander Streets at a cost of \$77,426.

The stormwater management plan and results of similar, past studies have been shared with the N.C. Department of Transportation (NCDOT). The Town has requested NCDOT’s assistance with the construction of identified improvements affecting State maintained streets and highways.

Following a meeting with Governor Pat McCrory, the Town of Kitty Hawk is also pursuing approval to construct a series of three ocean outfalls to help alleviate stormwater drainage issues. The Town retained an engineering consultant to prepare a preliminary study on potential ocean outfalls. This study was presented to the Town Council in July

2013. Further studies and permitting are on hold pending the identification of a funding source for the outfall projects. The Town is in discussions with NCDOT as a funding partner, as the outfalls would relieve significant flooding issues on N.C. Highway 12.

- **GOAL: Revise storm preparedness, response & recovery plan.**

Action: Revise the storm preparedness, response, and recovery plan for Kitty Hawk.

Responsible Person: Town Manager, All Town Departments, Town Council

Completion Date: Ongoing

Funding: General Fund

Prioritization: High

STATUS: The Town of Kitty Hawk's Storm Preparedness, Response, and Recovery Plan is reviewed annually and updated as needed. The Town Manager completed the most recent review and update with input from all department heads in May 2014. Updates were presented to the Town Council in June 2014.

All required employees from every Town department have completed NIMS and ICS training to improve emergency response.

2. PROPERTY PROTECTION

- **GOAL: Reduce individual property owners' losses.**
- **GOAL: Find cost effective solutions.**
- **GOAL: Streamline damage assessment procedures.**

Action: Educate homeowners on various mitigation techniques and resources available to them.

Responsible Person: Planning & Inspections Department

Completion Date: Ongoing

Funding: General Fund

Prioritization: High

STATUS: The Planning & Inspection Department advises contractors, homeowners, and other interested parties on the flood damage mitigation techniques and available resources on a daily basis. Staff also provides FEMA technical bulletins, fact sheets, the Coastal Construction Manual, and important website information to homeowners interested in mitigation techniques. Detailed outreach brochures that include information on hurricane preparations, flood insurance, and how to obtain information about hazard mitigation techniques are mailed to all property owners twice a year. The Town also makes information available to the public on the Town's website and through articles published in the Town's newsletter (sent every month).

Building Inspector Dennis Speight attended a damage assessment training workshop in May 2012. Based on his information, the Planning & Inspections Department has implemented improvements in the process and accuracy of its damage assessment estimates. In July 2013, the department debuted new damage assessment forms that allow for more accurate and detailed information to be provided in the field.

Action: Provide information to homeowners on how to individually hazard-proof their own homes.

Responsible Person: Planning & Inspections Department

Completion Date: Ongoing

Funding: General Fund

Prioritization: High

STATUS: The Planning & Inspections Department advises homeowners and other interested parties on ways to hazard-proof their homes. Staff also provides FEMA technical bulletins, fact sheets, and important website information. Detailed outreach brochures that include information on hurricane preparations, flood insurance, and how to obtain information about hazard mitigation techniques are mailed to all property owners twice a year. The Town also makes information available to the public on the Town's website and through articles published in the Town's newsletter (sent every month).

During the permitting process, homeowners are given information about flood insurance, flood vents, flood resistant materials, and the location of the required flood protection elevation in relation to proposed first floor. In addition, the building inspector reviews house plans for compliance with the Town's adopted Flood Damage Prevention Ordinance and N.C. Building Codes, then makes recommendations for improvements or compliance as needed. At the completion of a project, homeowners are given information about flood insurance and flood damage prevention. Planning & Inspection Department staff members also make site visits when requested to assist property owners in complying with the Flood Damage Prevention Ordinance and N.C. Building Codes.

Action: Encourage homeowners to conduct an inventory of their assets to assist with damage claims.

Responsible Person: Planning & Police Departments

Completion Date: Ongoing

Funding: General Fund

Prioritization: High

STATUS: Through day-to-day interaction (by phone and in person), Town staff encourages property owners in a special flood hazard areas (SFHA) to inventory their assets. Detailed outreach brochures mailed twice a year also inform property owners about flood insurance for their assets. In addition, the Police Department speaks at

several homeowners association meetings a year and encourages residents to inventory their assets in case of significant storm damage or burglary.

3. NATURAL RESOURCE PROTECTION

- **GOAL: Educate citizens about the importance of open space and natural resource protection.**

Action: Educate citizens about dune vegetation.

Responsible Person: Public Works & Planning Departments

Completion Date: ongoing

Funding: General Fund

Prioritization: High

STATUS: Planning staff has written articles that appear in the bi-weekly Town newsletter explaining the importance and function of sand dunes. Staff has also developed a brochure that explains how to install and maintain sand fencing in order to help dunes grow. In addition, a list of vendors that sell dune grasses and copies of *The Dune Book* have been compiled for property owners interested in maintaining their dunes. All the above information has been added to the Town's website.

As part of the development of the second phase of Sandy Run Park, the Town of Kitty Hawk worked with the N.C. Coastal Reserve to install interpretive signs that explain many of the natural features and processes that occur within local beaches and the Kitty Hawk Woods Coastal Reserve.

- **GOAL: Promote dune and beach renourishment and support local actions.**

STATUS: The Town of Kitty Hawk continues to participate in the on-going efforts to pursue beach and dune renourishment. In 2005, a Shoreline Management Commission was formed to oversee and advocate the preservation and restoration of shorelines in Dare County. The Commission is comprised of elected officials from the county and municipal governments in Dare County.

The Town of Kitty Hawk is actively proceeding with efforts to design, permit, and fund beach/dune renourishment. The Town recently entered into a contract with an engineering consultant to conduct studies, design, engineer, and obtain permits to implement a beach renourishment project along the entire Kitty Hawk oceanfront. The Town is scheduled to consider the adoption of special tax districts to help fund projects relating to beach renourishment and stormwater damage reduction in the Fall of 2014.

As part of these efforts, the Town Council has held numerous public meetings during which it discussed a variety of alternatives and requested public input. To date, the Town

has received comments from dozens of property owners and residents regarding beach renourishment. The Town Council will be holding a special public hearing in the Fall of 2014 to receive comments about the special tax district proposal. Plans and updated information about the beach renourishment efforts have been posted regularly on the Town's website and included in the Town's monthly newsletter.

- **GOAL: Establish a hazard mitigation plan, a disaster preparedness plan, and a storm reconstruction/recovery plan.**

Action: Establish town plans for mitigation and recovery through information on disaster planning, recovery, and reconstruction.

Responsible Person: Town Council, All Town Departments

Completion Date: Ongoing

Funding: General Fund

Prioritization: High

STATUS: In 2009, Town Council approved an updated Hazard Mitigation Plan that has been incorporated into the multi-jurisdictional Dare County Hazard Mitigation Plan. The Town of Kitty Hawk's Storm Preparedness, Response, and Recovery Plan is reviewed and updated annually. The most recent updates were presented to the Town Council in June 2014. This plan establishes policies and guidance for storm preparedness, response, recovery, and mitigation operations. It outlines a system for the coordinated and efficient use of Kitty Hawk's resources to preserve the health, safety, and welfare of people and the condition of properties during hazard-related situations. The plan also details the authority and responsibilities for each of the Town's departments during a storm/emergency event.

- **GOAL: Maintain the existing stormwater drainage system including all waterways, ditches, and canals.**

Action: Clean out culverts, ditches, and waterways to relieve standing water and facilitate stormwater drainage.

Responsible Person: Town Manager, Public Works Department

Completion Date: Ongoing

Funding: General Fund, State Grants, NCDOT

Prioritization: High

STATUS: In Fall of 2005, the Planning Department collaborated with Dare County to have canals and waterways cleared of debris. This project was funded through grants. The Public Works Department also cleans out culverts on an as needed basis. The Town has worked with the N.C. Department of Transportation to clean and maintain culverts under NCDOT roadways. More consistent debris removal has been challenging due to a lack of funding, limited manpower, and private ownership of many drainage ditches and canals.

- **GOAL: Closely monitor beach erosion.**

Action: Collect beach erosion information annually.

Responsible Person: N.C. Division of Coastal Management

Completion Date: Ongoing

Funding: N.C. Division of Coastal Management, FEMA

Prioritization: High

STATUS: The Town monitors beach erosion before and after every storm to ensure public safety and document damage to public and private property. The Town also provides a CAMA Local Permit Officer to serve as a resource for local residents. FEMA and the N.C. Division of Coastal Management conduct studies and provide the Town with updated flood zone and erosion rate maps. The Town has been informed that updated flood maps for Dare County may be available as soon as the Fall of 2014.

4. EMERGENCY SERVICES

- **GOAL: Improve public safety during and after a storm event.**

Action: Update and improve the protocols and procedures (local, county, and state) by which the citizens in Kitty Hawk are made aware of impending storm events and expected impacts.

Responsible Person: Town Council, Dare County Emergency Management

Completion Date: Ongoing

Funding: General Fund, Dare County

Prioritization: High

STATUS: Both the Town of Kitty Hawk and Dare County update their Storm Preparedness, Recovery, and Response plans annually. Citizens are notified of any storm threats, storm preparations, recommended and required evacuations by television, radio, Town and County websites, special editions of the Town's newsletter, and door-to-door visits by the Fire Department.

Action: Work with the Dare County Control Group to prepare the provision of needed equipment and services to persons and businesses in need of assistance.

Responsible Person: Town Council, All Town Departments, Dare County Emergency Management

Completion Date: Ongoing

Funding: General Fund, Dare County

Prioritization: High

STATUS: The Town of Kitty Hawk annually enters into contracts with private individuals and companies to provide necessary equipment and assistance in recovery efforts to supplement other resources. The Town of Kitty Hawk also participates in the N.C. Statewide Mutual Aid Agreement. By entering into this agreement, the Town is able to access additional resources from other municipalities, counties, and the state. The Town also has representation on the Dare County Control Group as well as the County's Coordination Group.

Action: Define procedures and practices to maintain critical facilities and services to the maximum extent possible during and after a storm event.

Responsible Person: Town Council, All Town Departments
Completion Date: Ongoing
Funding: General Fund
Prioritization: High

STATUS: The Town's Storm Preparedness, Response, and Recovery Plan outlines the authority and responsibilities of each of the Town's departments during a storm/emergency event. The plan describes a system for the efficient use of Kitty Hawk's resources necessary to preserve the health, safety, and welfare of people affected during storm related emergencies. Several of the procedures and practices the Town implements prior, during, and after storm events include: securing all critical and Town owned facilities, securing an amateur ham radio operator, back-up all important files that will be needed after the storm event and place in a secure location, testing generators at all Town departments, locating "TOD" army trucks at designated points in the Town, stationing Fire and Police vehicles and equipment at higher elevations to prevent flooding or damage, and having personnel stay on-site to ensure proper staffing after storm events.

5. STRUCTURAL PROJECTS

- **GOAL: Pursue beach and dune renourishment.**

Action: Implement beach and dune renourishment projects as funding becomes available.

Responsible Person: Town Council
Completion Date: Ongoing
Funding: Federal & State Grants/Programs
Prioritization: High

STATUS: The Town of Kitty Hawk is actively proceeding with efforts to design, permit, and fund beach/dune renourishment. In 2013, Dare County agreed to provide \$250,000 toward the costs of completing preliminary studies, design, and permitting for beach renourishment. Kitty Hawk spent \$22,454 to hire an engineering consultant to prepare a beach management conceptual plan that was presented at the Town Council meeting on

September 3, 2013. In 2013, the Town entered into an agreement with Dare County to help fund the planned beach renourishment project. The County committed over \$13.5 million toward this project.

In January 2014, The Town entered into a \$619,773 contract with an engineering consultant to conduct studies, design, engineer, and obtain permits to implement a beach renourishment project along the entire Kitty Hawk oceanfront. The Town is scheduled to consider the adoption of special tax districts to help fund projects relating to beach renourishment and stormwater damage reduction in the Fall of 2014.

In 2008-09, the Town of Kitty Hawk installed sand fencing on the primary oceanfront dune along nearly three miles of beach. The installation of sand fence and vegetation allows windblown sand to accumulate and form dunes. The Town's Public Works Department has maintained and repaired the sand fencing when damaged by storms. During 2013, it is estimated that approximately one-half mile of the sand fencing was repaired or replaced following storms.

- **GOAL: Raise roadways above the expected flood levels.**

Action: Encourage the N.C. Department of Transportation to elevate Kitty Hawk Road to Kitty Hawk Landing.

Responsible Person: Town Council, NCDOT

Completion Date: Ongoing

Funding: NCDOT

Prioritization: High

STATUS: As part of the previously referenced studies, the Town of Kitty Hawk has identified this area as a location that is prone to frequent flooding. The Town has also presented the results of the studies to NCDOT and requested NCDOT's assistance in completing identified improvements along W. Kitty Hawk Road, which is a State maintained street. In the fall of 2009, the Town was successful in having this project placed on the regional Traffic Improvement Program (TIP) list. According to NCDOT officials, funding is not currently available for the entire project. In 2012, NCDOT completed paving and road elevation improvements along a short stretch of W. Kitty Hawk Road.

6. PUBLIC INFORMATION

- **GOAL: Inform property owners about hazard mitigation.**

Action: Maintain updated flood map information for citizens and customers.

Responsible Person: Planning Department, N.C. Div. of Emergency Management

Completion Date: Ongoing

Funding: General Fund
Prioritization: High

STATUS: Kitty Hawk has adopted a Public Information Plan that outlines the many ways that the Town provides information to local residents, businesses, and property owners about risks of flooding and other natural hazards, as well as the opportunities to prevent or minimize damage during these situations. This plan is reviewed, updated, and many of its recommendations implemented on an annual basis.

The Planning & Inspections Department maintains a thorough library of current/past flood maps, brochures, and other flood/emergency preparedness resource materials as a public resource. Updated information is provided on the Town's website about flood damage prevention, emergency preparedness, and links to related information. Information about flooding risks, flood damage prevention, and emergency evacuation is also provided on the local public cable channel.

Every year, the Town sends out two (2) outreach project informational brochures (Spring/Fall) to all property owners about flooding risks and flood damage prevention. The latest of these was mailed in April 2014. The Town also works with local rental realty companies to distribute information to visitors about emergency preparedness and evacuation procedures. In recognition of National Flood Awareness Week, the Town Council adopted a resolution declaring March 16-22, 2014 as Flood Safety Awareness Week in Kitty Hawk.

- **GOAL: Improve communication with other government agencies and the media.**

Action: Initiate outreach projects to inform the public on Town and County initiatives that will reduce hazard related losses of property and life.

Responsible Person: Planning & Inspections Department, Management Assistant
Completion Date: Ongoing
Funding: General Fund
Prioritization: High

STATUS: The Town annually reviews and updates its Public Information Strategy with a committee made up of representatives from local real estate companies, insurance companies, and Town employees. Outreach efforts over the past year have included mailing out two public informational brochures to all property owners, sending letters to owners of repetitive loss properties, adding website information and links, posting information at Town Hall, distributing information by hand to local businesses, and proclaiming a Flood Awareness Week.

Twice annually, the Planning & Inspections Department disseminates a newsletter to property owners with information on the local flood (and other) hazards, flood warning system, storm preparations, flood insurance, various property protection measures, substantial improvements, development work that requires permits, drainage system

maintenance, and the purpose and benefits of floodplains. The Eastern Albemarle Regional Library system also maintains information on coastal construction, flood proofing, retrofitting, and other mitigation measures.

Working in cooperation with Dare County's Emergency Management and Public Information departments, the Town's Management Assistant distributes a variety of safety information through the local media (radio, television, email, websites, newspaper, etc.) in the days leading up to, during, and in the aftermath of significant storms.

Manteo Mitigation Status Update

G. Hazard Mitigation Goals **NO CHANGES**

The town of Manteo views the Hazard Mitigation Plan as an opportunity to protect its citizens and the local economy. The Mitigation Advisory Committee set forth specific goals as a way to grasp this opportunity. They are as follows:

1. Reduce loss of life and personal injury from natural hazards
2. Minimize the damage to public infrastructure resulting from natural and manmade hazards
3. Manage future development so that vulnerability of private property to natural and manmade hazards is reduced
4. Expedite post-disaster clean-up, repair, and construction.
5. Protect the fragile natural and scenic areas located along our shoreline.
6. To preserve and protect key facilities and services from the threat of terrorists or others wishing to damage, destroy or contaminate public assets.

H. Community Capability Assessment

The Town has a very small staff and therefore is limited in its capabilities. The mitigation strategies chosen are financially feasible and appropriate to meet the needs and capabilities of the Town.

Participation in the National Flood Insurance Program's (NFIP) Community Rating System (CRS) has been occurring from the program's inception in 1973. The Town has achieved a class 8 rating. This has been accomplished by continuing the Town's commitment to reduce property damage and save lives while facilitating development of our Town in accordance with Local, State, and Federal Regulations. **The Town along with Dare County are now recognized as a StormReady Community.**

In addition to the Town's CRS program there are some existing and proposed policies, programs, and ordinances that may affect the Town's vulnerability to hazards. The following documents were identified:

- Town of Manteo Subdivision Ordinance
- Town of Manteo Zoning Ordinance
- Dare County Comprehensive Plan
- Town of Manteo Flood Damage Prevention Ordinance

I. Mitigation Efforts in Place

A summary of existing policies used by the Town is as follows:

Rising Water

1. The National Weather Service monitors and reports rainfall and stream gauges to predict flooding
2. Local TV stations have state-of-the-art equipment to predict and accurately report weather. They are able to pinpoint specific geographic areas. There is a special audible alert that precedes weather advisories.
3. Manteo joins with Dare County in lobbying the state to update the FIRMS. **The updated maps are anticipated to be published in Spring of 2015.**
4. Manteo participates in the CRS program and is taken measure to improve the class 8 rating.

5. Manteo's zoning ordinance Article 26 establishes specifications for construction in flood hazard areas to minimize flood damage
6. Property owners are provided advice through site visits to property to review flooding, drainage and related problems.
7. Homeowners are advised on retrofitting techniques.
8. State buffer rules are enforced to improve the quality of storm water runoff. **The Town also implemented a stormwater management ordinance to help mitigate the effects of development on surrounding properties and to encourage new and existing development to treat stormwater on site.**
9. Town removes debris as soon as possible after a flood event.
10. **The Town manages and cleans stormwater catch basins, and culverts, pipes and ditches on a regular basis to allow for flood water to recede as quickly as possible.**
11. **The Town adopted a 3% tax specifically to address stormwater management issues. The entire stormwater system was mapped and the Town has begun an aggressive replacement program to address aged and undersized pipes in the stormwater system.**

Winds

1. The National Weather Service monitors and reports wind speeds and storm conditions.
2. Local TV stations have state-of-the-art equipment to predict and accurately report weather. They are able to pinpoint specific geographic areas. There is a special audible alert that precedes weather advisories.
3. The Town removes debris as soon as possible after the event. The town has a contingency contract for expeditious removal of storm debris.
4. Manufactured homes must meet Category 3 hurricane standards.
5. **The town uses social media and the town website to warn the public of flooding do to winds.**

Winter Storms

1. The National Weather Service monitors and reports winter storms.
2. Local TV stations have state-of-the-art equipment to predict and accurately report weather. They are able to pinpoint specific geographic areas. There is a special audible alert that precedes weather advisories.

Terrorism

1. Lock all facilities when staff is not present.
2. Alarms are in place to monitor sewage and water facilities.
3. Manteo Police Department is linked to the Dare County Law Enforcement System.
4. Manteo Police have attended in-service training and are current in terrorist training.

J. Implementation Strategies for Manteo

As this plan was formed it was reliant on a few main strategies that the county already employs. Those strategies are as follows:

1. The county's Emergency Operations Plan. This plan includes evacuation procedures and response to hazards included in this plan and those listed in Dare County's Plan.
2. Its storm hazard mitigation policies provided in the most recent Dare County Coastal Management Act (CAMA) Land Use Plan and in the 2007 Manteo CAMA Land Use Plan.
3. Maintain elevation certificate information in hard copy format to be provided by Manteo upon request.

The Town of Manteo also has some implementation strategies that it wishes to use. These include:

- A. Making use of Dare County's flood plain, parcel data, and aerial photographs in digital format. The county should be capable of overlaying these coverages on its Geographic Information System (GIS)
- B. Ensure that Manteo maintains documents about flood insurance, flood protection, flood plain management, and the natural and beneficial functions of flood plains.
- C. Assist local real estate agents with information handouts that will advise potential buyers to investigate the flood hazard for the property they are considering purchasing.
- D. Send a flood protection flyer to all property owners in Manteo through a community news letter, utility bill or other document. The flyer would include a general identification of the local flood hazard, flood safety, flood insurance, property protection, flood plain development permit requirements, and drainage system maintenance.
- E. Continue to stay current with all Community Rating System reporting requirements to ensure continued program participation.
- F. Continue our policy controlling the development of critical public facilities in the 100-year flood plain in cases where viable alternatives exist.
- G. Continue to actively pursue state and federal grant funds to assist in the hazard mitigation recommendations included in the plan.
- H. Continue to encourage projects undertaken by the Manteo Police Department, Fire-Rescue-EMS, Public Works, and Planning Departments that will lessen the vulnerability of the Town and its residents to natural hazards. When projects are found to address hazard mitigation, the availability of state and federal grant funds should be investigated that may assist the Town with the cost
- I. Continue to enhance the Water and Sewer Department's back-up generator system as well as continued and expanded use of SCADA, which allows for remote monitoring of all sewer lift stations.
- J. Mayor and other council members to participate in Dare County's Emergency Management training sessions.

- ~~K. Continue to Acquire and maintain back-up generators for lift stations and to supply electricity to critical Town facilities during periods of power outage.~~
- L. Continue to maintain ditching along streets to facilitate drainage
- M. Continue to use the Vac Truck to effectively clean all stormwater catch basins, pipes and culverts.
- N. Continue to update and use the existing Manteo Police Emergency Plan
- O. The Town Planner to file for grant applications,
- P. Building inspector /Planner to enforce Town codified ordinances which include NFIP approved Flood Ordinance
- Q. Public Works Director to have regularly scheduled maintenance of storm water system
- R. The Town Planner will actively research and identify mitigation initiatives for grant applications and establish target dates for completion.

NAGS HEAD STATUS UPDATE

Updates since 2010 - 2013 are **in red** while updates for 2013-2014 are **in blue** for Commissioners

V. MITIGATION GOALS AND VALUES

The primary objective of the Town of Nags Head related to hazard mitigation is to reduce to the extent possible, damage to life and property from hurricanes, severe coastal storms, and the other hazards identified in this plan. To support this objective, the Town pursues the following goals and mitigation strategies:

1. Reduce damage to property through policies, ordinances, operational procedures, and infrastructure that reflect careful consideration of mitigation planning efforts.
2. Enhance the safety of, and service to, the public through pre- and post-storm communications, policies and procedures **and the Incident Command System.**
3. Develop and maintain infrastructure and critical facilities that have a low-vulnerability to hazard induced damage. **Coordinate with staff of critical medical facilities to ensure safe evacuation as necessary.**
4. Seek methods to protect existing structures from storm-related damage through hazard mitigation efforts and enforcement of Town floodplain, zoning and building regulations, **as well as enforcement of all CAMA regulations in accordance with CAMA rules and the Local Permitting Officer Program.**
5. **Provide public education opportunities and information regarding storm preparedness, hazard mitigation and planning initiatives.**
6. **To minimize the loss of life and property due to flooding by;**
 - a. **Minimizing the impact of flooding to life and property to include buildings, critical facilities and infrastructure.**
 - b. **Pursue flood mitigation projects in repetitive flood areas to improve stormwater management.**
 - c. **Continue coordinated efforts with outside agencies to maintain, repair, and improve infrastructure servicing repetitive flood areas.**

VI. MITIGATION STRATEGIES AND POLICIES

The 2004 Plan provides background on the development of mitigation strategies and policies originally developed. The following policies and strategies were updated from that original Plan using information provided from a review of the 2010 Hazard Mitigation Plan by Town Department Heads. Updates are developed based on the following criteria.

- **Cost vs. Benefits**
- **Staffing capability**
- **Local, State, and Federal political climate**
- **Funding sources (internal and external)**
- **Effectiveness in satisfying mitigation goals**

- Third party participation

A. Beach Nourishment

1. Background

Islands have a dynamic and ever-changing environment. Barrier islands have been shown to migrate, and are subject to a complex and numerous sets of natural forces, e.g., overwash processes, littoral drift, inlet formation, and dune and beach dynamics. They are further modified by storms and hurricanes. Coastal erosion, as a result of normal offshore littoral patterns, the occurrence of hurricanes and storms, and the general sea level rise which has been occurring (Titus, 1985), make development along the shores of barrier islands particularly tenuous.

In other localities, problems have arisen by allowing the construction of immovable buildings along the ocean shore, necessitating the expenditure of public funds to protect these structures when natural forces threaten them. Several methods have been used to stabilize the ocean beach. Primary among them are: (1) sand moving programs, e.g., beach nourishment, sand pushing; (2) sand trapping structures, e.g., groins, jetties; and artificial reefs, and (3) shoreline protection works, e.g., bulkheads, seawalls, revetments.

Beach nourishment programs involve efforts to push or place sand onto the beach in an attempt to build back former dunes and upper beach. Beach nourishment projects are typically expensive and the results are temporary and often require continual nourishment. A single nor'easter may eliminate much of the sand deposited under a nourishment program. Beach nourishment programs, however, represent efforts to preserve oceanfront property without damaging neighboring property or destroying the public's use of the beach.

Groins and jetties are structures built perpendicular to the shoreline. Jetties are often very long and intended to keep sand from filling in inlets and shipping channels. Groins are smaller and attempt to trap sand flowing in the littoral current. Such structures are expensive, unsightly and cause extensive erosion problems down-current, as they rob these beach areas of the natural sand replenishment they would normally receive. So far the State of North Carolina has not supported the establishment of such structures along our Coast, however, there is currently discussion at the state level to introduce consideration of such structures at key areas along the Coast, including South Oregon Inlet.

Shoreline protection works, such as seawalls and revetments, are built parallel to the coastline and are designed to directly shield shoreline property from the ocean forces. The City of Galveston, Texas, for instance, has constructed a 17-foot high seawall, which protects its urban area. Such structures, however, reflect wave action, and intensify currents that steepen the profile of the beach and damage the property beyond the ends of the structure. In the long run these structures serve to destroy or seriously undermine the beach, require continual maintenance and investment, and are largely ineffective in protecting property from shoreline processes without perpetual nourishment of the beach seaward of the hardened shoreline. Moreover, these structures are extremely costly to build. The Coastal Resources Commission, recognizing the inappropriateness of shore-hardening devices such as wooden bulkheads, seawalls, rock or rubble revetments, jetties, groins and breakwaters, has prohibited their use on North Carolina ocean beaches and restricted their use in other areas such as the Sound. The Town of Nags Head defers to Coastal Area Management Agency regulations for such requests.

On the oceanfront, several actions can result in the destruction or removal of homes. Houses can be destroyed by storms or erosion or they can be relocated either on the same lot or off the lot. Tracking the fate of oceanfront houses can be problematic. If the house is moved either on the same lot or off the lot, the Town will issue a permit. If the house is condemned (for lack of septic or building code problems), the Town will also issue a permit for its removal. These properties can soon become a public nuisance and it is often difficult to require their removal. Town records reveal that there have been approximately 96 houses moved from the oceanfront or demolished from 1987 through 1996, 44 houses relocated on the same lot, and 56 properties listed as "washouts" on the Dare County tax listing. A "washout" represents a property where the building no longer exists and in all likelihood was destroyed by a storm or erosion. **Since the Veterans Day Storm, the Town has facilitated the relocation or demolition of 17 homes.** Most of the building permit activity for destroyed homes or relocated structures has occurred in South Nags Head.

Since 1989, the US Army Corps of Engineers has been conducting studies to determine the feasibility of constructing a federal Hurricane and Storm Damage Prevention Berm on portions of the northern beaches of Dare County.

These studies have: (1) determined the value of land development along the oceanfront, (2) the cost of constructing such a project, (3) the supply of recoverable, compatible sand available, and (4) the benefit cost ratio between berm construction costs and the value of oceanfront and near ocean structures that would be protected by such a berm.

Three sections of the northern beaches have been identified as meeting the standards for federal appropriations. Virtually all of Nags Head is included within this identified project area. The costs for initial construction of the entire Dare County project are estimated at approximately 70 million dollars. Previous nourishment projects have been funded 65 percent by the federal government, with the remaining 35 percent coming from state and local sources. The federal beach nourishment study was completed in the fall of 2000. At the time this document was written originally, easements were acquired for the first phase of the project.

Since that time, the Town carried out a successful beach nourishment project. The nourishment project performed very well during Hurricane Sandy in 2012, with the Town sustaining minimal damage, while ocean front areas to the north and south of Nags Head sustaining significant damage.

The Town anticipated renourishing the beach within six years of initial construction. The Town is currently conducting planning efforts to complete the renourishment. This project will be completed by Spring of 2017.

2. Beach Nourishment Funding

The Town supports beach nourishment projects for the Town beaches subject to commensurate funding appropriations from federal, state and local sources. The Town will support and encourage the establishment of a statewide beach management strategy and policy along with a dedicated funding program designed for beach restoration and nourishment projects.

Implementing actions.

The Town will actively lobby the State for a state policy and strategy on beach nourishment and beach renourishment. Timetable A: Board Of Commissioners, Planning,

Administration: The Town received required permits in late 2010. The beach nourishment project was completed in October 2011.

The Town will lobby the State to establish an annually state funded statewide nourishment program. Timetable A: Town Managers Office, Planning. In 2005, Dare County enacted an increase in the general sales tax devoted to beach nourishment. Although it was repealed in 2006 the Town currently receives interest payments from the fund. The Town uses the funds for Town wide sand fencing projects.

The Town will seek funding from local and regional sources to assist with the local match for federally funded beach nourishment projects. Timetable A; Town Managers office, Planning. In 2005, Dare County enacted an increase in the general sales tax devoted to beach nourishment that was repealed in 2006. In 2008, the Town established a beach nourishment fund. In 2009, the Town applied for a Water Resources grant that was not funded. Because of the lack of financial assistance from federal and state government, Nags Head raised taxes in 2011 to help pay for the \$36 million nourishment project.

The Town shall request authorization to extend any ocean outfall, which will be affected by any renourishment project. Timetable D: Public Works, Planning. The Town's CAMA permit for Beach Nourishment was modified to permit the extension of the outfalls to be affected by the widened beach. Three outfalls were extended as part of the project.

3. Beach Nourishment-General

The Town recognizes beach nourishment as our preferred alternative for addressing the impacts from barrier island migration and ocean erosion. However, the Town also supports a variety of methods to abate the impacts to ocean erosion; these include but are not limited to: acquisition of threatened structures, relocation of threatened structures, and the establishment of innovative technology or designs which may be considered experimental, which can be evaluated by the CRC to determine consistency with 15A NCAC 7M .0200 and the other general and specific use standards within the CAMA rules.

Implementing actions

The Town will sponsor studies designed to determine the financial contribution the beach makes to the Outer Banks and the region. Timetable D: Administration, Planning. In 2006, the Town established a committee to address this. December-January 2007 the committee presented a recommendation to the Board of Commissioners. A Town referendum was held April 17, 2007 and failed to gain enough support for passage.

Following a severe storm the Town shall consider purchasing land in damage prone areas. Timetable A: Planning, Administration. In 2013 the Town purchased an oceanfront piece of property in South nags Head to be used for public beach access.

B. Mitigation and FEMA

Mitigation represents a proactive approach to reducing the vulnerability of risk to properties in the Town. The Town will investigate innovative programs and seek funds for mitigation measures such as relocation of threatened structures and more stringent building codes for high hazard areas that support the growth management policies of the Town.

Implementing actions.

The Town shall consider the applicability of requiring "V Zone" structural certification for structures in the 100-year (A) flood zone. Timetable D: Planning. **New flood maps were adopted September 20, 2006: No additional action needed as the new flood maps addressed the Town's concerns.**

The Town will consider establishing a committee comprised of a cross section of interests to explore and make recommendations to the Board of Commissioners regarding amendments to our Flood Ordinance which address freeboard and other flood mitigative measures recognized by FEMA and the CRS program to reduce flood losses. Timetable C: Board of Commissioners. **2006: The model flood ordinance was reviewed by staff; the Town's Planning Board and the Board of Commissioners and was modified to address higher regulatory standards and adopted on September 20, 2007. In November, 2014 the Town adopted language within the existing Flood Damage Prevention Ordinance to require a one foot (1') freeboard.**

The Town shall support the continued education and training of the Town's Building Inspectors and planning staff in inspections and mitigation activities. Timetable A: Planning. **2011: Inspectors attend periodic training workshops and have increased training as a result of BCEGS.**

The Town will actively work with FEMA and the State during the Statewide floodplain mapping project. Timetable A: Planning. **The new flood maps were adopted September 20, 2006. The Town anticipates the release of draft maps in Spring of 2015 and will actively work to provide comments and data to FEMA in support of map implementation.**

The Town shall develop a program to identify businesses and material storage areas where significant amounts of toxic or hazardous products are stored which would be subject to flooding. Timetable C: Public Safety, Public Works. **Through annual fire prevention inspections, Nags Head Fire staff evaluates and determines protection of toxic or hazardous products stored in areas prone to flooding.**

The Town shall develop regulations to require fuel tanks, including LP tanks to be adequately anchored to prevent flotation or submersion in the event of flooding. Timetable D: Public Safety, Planning. **All new LP tank installations must meet the current building code.**

The Town will continue to identify properties in repetitive loss areas and will continue to inform property owners in these areas of flood mitigation actions they can take to reduce flood losses. Timetable A: Planning. **The Town informs repetitive loss property owners of yearly retrofitting workshops held in the fall or winter.**

The Town shall participate in the Community Rating System program by continuing the following CRS credit activities: Timetable A: Planning. **The Town is actively training on the 2013 CRS manual in preparation for its 2015 five year cycle visit.**

Table 9. CRS Credit Activities

Activity	Description of Activity
310	Elevation certificates
320	Map determinations
330	Outreach projects
340	Hazard disclosure

Activity	Description of Activity
350	Flood protection library
360	Flood protection assistance
410	Additional flood data
420	Open space preservation
430	Higher regulatory standards
440	Flood data maintenance
450	Stormwater management
510	Repetitive loss projects
530	Retrofitting
540	Drainage systems maintenance
610	Flood warning program
630	Dam safety

C. Post Storm Mitigation

The time period after a storm is a critical time to ensure that all Town regulations are adhered to and that the area is safe for visitors to return. This time period is also an opportunity to utilize current building codes and available regulations to mitigate future damage potential.

Implementing actions.

Following a severe storm or hurricane, reconstruction will be evaluated for compliance with the adopted zoning ordinance, CAMA regulations, and all other applicable local, state and federal regulations. Timetable A: Planning. **This is an ongoing endeavor.**

D. Recovery and Operations

Intergovernmental cooperation and employee safety are essential components for a safe recovery. Effective communication of policies and procedures among Town Staff and to residents and property owners is crucial to strengthen the reentry and recovery process.

Implementing actions

On issues of mutual concern, the Town shall coordinate recovery and post storm response activities with Dare County, the State of North Carolina, and the Federal Government. Timetable A: All Town Departments. **The Town participates in preparedness meetings such as the VA/NC hurricane meeting and hurricane recovery exercises with adjacent jurisdictions (mutual aid).**

During a hurricane the Town maintains a staff of essential personnel and elected officials **within Town Hall, using the Town Hall building as the Emergency Operations Center of "EOC."** When available the Town shall consider acquiring or building a command facility. Essential components may include a mobile radio transmission tower, satellite internet capability and enhanced telephone service. Timetable A: All Departments. **The Town has established the former Outer Banks Medical Center facility as a backup EOC. In 2006 the Town acquired a mobile command center. In 2012 the Town acquired and installed a HAM radio Tower for use during emergency events.**

Following a hurricane the Town shall establish an information center staffed with Town, State and Federal employees who are available to assist property owners in the reentry

and recovery process. Timetable A: Mayor, Manager, Planning, Administrative Services. The Town has established areas and identified personnel to carry out the above as part of the ICS Plan. In addition, the Town's public information officer participates in a county wide Joint Information Section, an integral part of the ICS.

Following a declared emergency storm event, only those areas where damage assessment is complete and that have been declared relatively secure shall be open to the public. Timetable A: Public Safety, Planning. Material, staffing and procedures have been identified to carry out this task.

The Town leases space to mobile phone service providers on the Town's two water tanks. Cellular phone service provides an essential form of communication after a storm. The Town shall consider requiring cellular phone service providers to structurally design their tower mounted equipment to withstand greater wind loads than is required by the State building code. Timetable (when leases expire): Administration, Town Managers Office. The Town enforces the State Building Code. A new fire alarm control panel was also installed and fire alarm service completed in the Town's emergency command center.

The Town shall identify and implement methods to streamline the damage assessment process. This may include collection of damage assessment data utilizing handheld GIS units. This shall also include methods to expedite the availability of damage and condemnation information to Town staff and the public. Timetable C: Planning. The Town's equipment used to collect digital information in the field proved unreliable in the field and will be discontinued. The Planning and Development Department's installation of Blue Prince Software, and trial usage of cell phone devices in the field will be used to determine a better digital collection approach. The Town will use a trained team to collect data and photos from the field.

The Town shall continue to pre-position debris removal agreements on a yearly basis. Timetable A: Public Works, Administration. The Town has secured agreements with two debris haulers, a memorandum of Agreement with Dare County (for debris removal using their contractor) and one debris monitoring contractor.

The Town shall obtain pre-storm authorization from the NC Department of Transportation (DOT) to clear DOT maintained roads after storm events. Timetable A: Public Works, Town Manager. This was accomplished in 2007 and again in 2012.

The Town shall continue to work with other North Carolina communities to obtain post-storm mutual aid personnel assistance when necessary. This could include assistance with building inspections, damage assessment, utilities repair and public facilities maintenance, and additional public safety personnel. Timetable A: Administration, Planning, Public Safety, Public Works. The Town has mutual aid agreements with other Dare County agencies. The Town also participates in the Statewide Mutual Aid Compact. The Town will no longer enlist community volunteers for the damage assessment process after a storm, but has pre-identified Town personnel to work with the Planning and Development Department on damage assessment so that the process is more timely and utilizes only personnel authorized to use Town equipment and those covered under Town liability insurance.

The Town shall designate a Staff level Director and Deputy Director of Emergency Management. Timetable B: Administration, Public Safety. The Town has designated the Fire Chief as the Emergency Management Coordinator under the ICS Structure. In 2009,

the Town designated the Deputy Fire Chief as Deputy Emergency Management Coordinator. In 2010, the Deputy Fire Chief was hired to fill the retired Fire Chief's position. In August of 2013 the Town hired a Deputy Fire Chief who will fulfill the role of Deputy Director of Emergency Management.

The Town shall continue to improve methods to provide public information after a storm. This shall include an automated voice messaging system with storm damage and re-entry information, a Mayor's radio broadcast, email broadcasts, improved real-time website information with relevant local contact information, available information at traffic stops, and designation of a post-storm public information officer. Timetable A: Administration, Town Manager's Office, **The Town is capable of providing the above services through the Town's PIO and Dare County Joint Information Center.**

The Town shall communicate post-storm recovery and operations policies and procedures to residents and property owners prior to hurricane season. The Town shall consider providing this information in the Town Newsletter, on the Local Government Access Channel, and the Town Website. Timetable B: Administration, Management Information Systems. **Information is provided to residents and property owners as described above and through new media and traditional media outlets.**

The Town shall develop a Crisis Communications Plan which will detail the process for distributing information internally and externally to the public before and after storms. Timetable B: Administration. **In 2006, the Town adopted an "Emergency Operations Plan" which details duties of Town staff before, during and after an emergency. That Plan was updated in August 2012 based on staff review of "lessons learned from hurricane Irene.**

E. Transportation and Drainage

Implementing actions

The Town will develop regulations requiring a greater street standard (dimensional and construction) where it can be reasonably demonstrated that nearby streets may be destroyed by a storm or other natural event and that the proposed street may be required to accept greater amounts of traffic. Timetable D: Planning, Public Works. **Other coastal communities are being contacted to determine if this is a possible option, and if adopted, would it be enforceable.**

The Town shall consider the establishment of an emergency transportation route parallel to US 158 from the northern Town boundary at Eighth Street south to Health Center Drive. Timetable D: Planning, Public Works, Public Safety. **Wrightsville, Memorial and even the Nags Head Woods Road could be used as needed for emergency access if something happens to US158.**

Prior to a flooding event, the Town's Street Department shall assemble the necessary traffic barricades and equipment to address flooding conditions noted in this plan. Timetable A: Public Works. **This action is performed prior to a storm.**

The Town shall identify alternative means of ingress and egress to the Outer Banks Hospital site and Colony Ridge Nursing Home facility. Timetable B: Planning, Public Safety. **This has been investigated and no feasible alternative exists. However, public safety will be in communications with Colony Ridge staff to assist with evacuation procedures prior to an**

event if necessary and the helipad has been preserved for use if needed during or after an event.

Through the budget and CIP process, the Public Works Department shall request funds to comprehensively review and improve the Town's drainage system. Additionally, funds shall be requested to address specific, localized drainage issues. Examples include the North Ridge, Vista Colony and Nags Head Acres subdivisions. Timetable A: Public Works. The Town established a Stormwater Utility, funded by a \$2 per month charge on all water bills, in the spring of 2005. The first project funded was a major update to the Town's Stormwater Management Plan, and the creation of a Stormwater CIP. The list of stormwater management projects has been expanded greatly as a result of Tropical Storm Beryl and the wet season experienced from June through August of 2012. The Town is working to develop engineered solutions with NCDOT to prioritize projects as funds permit.

The most northern outfall (known as the "Red Drum" outfall), was not included in the beach nourishment project and therefore was not extended. This outfall has proven to need repair and improvement in order to efficiently drain the NCDOT conveyance system. In 2012, Tropical Storm Beryl and heavy rain events have caused standing water in several areas of Town where the groundwater has breached and street conveyance systems backed up. NCDOT is currently in the design process for the extension of this outfall, which is critical to improving drainage conveyance in the northern part of Town. The design and letting of this project has been completed with construction tentatively scheduled for the winter/spring 2015.

The Town Department of Public Works continually works to mitigate the impacts of flooding within identified areas of repetitive flooding within residential neighborhoods. Recent examples of drainage infrastructure improvement projects servicing neighborhoods include Nags Head Pond, Nags Head Acres, Vista Colony and Carolinian Circle Subdivisions as well as drainage pipe replacement projects along S. Memorial Ave., Albatross St. and Nags Head Realty all of which are located in the northern end of Town.

The performance of an annual drainage maintenance program which includes vegetation removal, sediment removal, culvert cleaning and the re-establishment of drainage grade lines to improve drainage flow.

The Town continues to explore and investigate innovative solutions to unconventional drainage problems. This includes the implementation of a groundwater lowering system along the western portion of the Vista Colony Subdivision to lower surrounding surface and groundwater increasing available stormwater storage capacity in advance of storm events.

Continue with the approach of incorporating drainage improvements into roadway, pathway, and related development projects in an effort to eliminate impediments, improve flow and enhance hydraulic capacity which can effectively result in an increased level of service and system efficiency. Examples include the continued development of the W. Side Multi-Use Path, Holy Trinity Catholic Church, Flicker St. and Moongate Subdivision located in the Village of Nags Head.

The Town has restructured the portion of the stormwater management ordinance as it relates to the use of fill. This approach is to treat runoff at the source and reduce the

burden of Town drainage infrastructure from managing runoff originating from single-family development.

F. Damaged Homes

The Town recognizes that damaged homes and structures on the oceanfront present nuisance and aesthetic concerns. The Town shall take appropriate measures to abate this nuisance. The Town will investigate changes in NFIP regulations to establish realistic policies and procedures for declaration of destroyed structures.

Implementing actions

The Town will take a more proactive approach to enforcing removal of nuisance structures, with upfront communication of policies to property owners and the issuance of civil citations to abate the nuisance. This shall include the establishment of a new timetable for compliance of condemned structures, with the goal of full compliance within four months of initial condemnation. Timetable A: Planning. **The Town continues to explore procedures to expedite removal of nuisances. In 2010, 10 nuisance structures were moved or had permits to be moved and in 2011, 7 structures were removed. However, several property owners have refused to work with the Town and are planning to repair structures now that beach nourishment is completed, even though they are partially east of the static line in what is still considered a high erosion area by CAMA. In the fall of 2013, CAMA issued several exemption letters for repairs on these homes, and the property owners began pursuing building permits. To date permits have been issued to repair five of the six structures located on Sea Gull Drive in south Nags Head.**

The Town will petition FEMA through our state and regional NFIP representatives to consider adopting realistic regulations regarding the determination of destroyed structures. Timetable C: Planning. **On March 5, 2008 the Town adopted a resolution requesting Congress to readopt the Upton-Jones amendment.**

Relocation of threatened structures is a viable option for reducing storm damage and erosion and mitigating nuisance properties. The Town may seek funds and consider changes to the flood ordinance which will assist in the in the relocation or removal of these threatened structures. Timetable C: Planning. **Town Staff is aware of grant programs; however, the grants require a local match and the Town has not taken the position to support relocation with government financial assistance.**

The Town shall continue aggressive monitoring of entry into condemned homes to prevent safety hazards. Timetable A: Planning. **Enforcement of Building Code and nuisance regulations is on-going.**

G. Infrastructure

The proper placement or replacement of the Town's Infrastructure (roads, water lines etc.) after a storm is an essential mitigation tool to limit damage from future storm events.

Implementing actions

It shall be a Town policy that damaged Town infrastructure be built back to established Town standards only if it can be demonstrated that there is a reasonable and they have a

reasonable expectation to survive future hazard events. Timetable C: All Town Departments. **Waterlines have been replaced only if they meet these criteria.**

The Town shall develop contingency plans for those Town streets that may be lost as a result of erosion. This can include development of alternative routes or access, or upfront declaration of the potential for future improvements. Timetable D: Public Works, Town Manager, Board of Commissioners.

- **The Town has followed the same procedure for waterlines, and water services that cannot be restored in their previous location.**
- **The Town, with assistance from the Town Attorney, in 2006-2007 has identified alternative means of access to several properties along the ocean front where property owners agreed to work cooperatively.**
- **The Town modified development regulations to assist with providing access to properties where a Town road has been damaged or lost. The Town took action to officially close Surfside Avenue in 2011 as a Town Road when it was lost due to erosion.**
- **In 2012, the Town worked with the Nature Conservancy, and Clean Water Management Trust Fund to relocate a portion of Nags Head Woods Road damaged by Hurricane Irene in coordination with a soundside stabilization and natural restoration project.**

H. Zoning

Another key element in the reconstruction process is the enforcement of existing zoning rules and land use regulations.

Implementing actions

Storm damage reconstruction shall reflect pre-storm conditions to the extent possible.

Redevelopment shall comply with the Land Use Classification Map and the zoning ordinance. Timetable A: Planning. **Enforcement is ongoing.**

As the amount of available vacant oceanfront land diminishes, the Town can expect redevelopment of existing sites. It is the Town's position that the existing oceanfront development regulations adequately address concerns such as building height and density, and that currently permitted uses adequately represent the desired uses for the oceanfront. Timetable A: Planning. **This policy is presently in place.**

I. Sewage treatment plants and septic systems

The Town relies primarily on on-site septic systems; however, within the Town there are several sewage treatment plants and numerous low-pressure septic systems. During recovery after a severe storm, monitoring the function of on-site septic systems and treatment plants is critical to ensure that environmental damage does not occur.

Implementing actions

- The Town shall consider seeking authority and adopting regulations which would allow qualified Town staff to inspect sewer treatment facilities and on-site septic systems after a storm. These regulations should also allow staff to request the corrective actions necessary

to ensure proper operation of these systems. Timetable C: Board of Commissioners, Administration, Planning and Septic Health. **Town staff is trained to inspect systems, but no authority to enter private property has been requested. In 2007 the Town adopted a regulation that prohibits "pump and haul" operations for residential uses where the septic system cannot be repaired.**

- The Town shall take a proactive approach to educating citizens on the negative implications of using a septic system that has suffered storm damage. The Town will develop educational materials informing homeowners on the proper care of a system impacted by floodwaters. Timetable B: Septic Health, Public Works. **This process is ongoing through the Septic Health Initiative.**

J. Critical facilities

An essential component to storm preparedness and the recovery process is the protection of critical facilities and the individuals they serve.

Implementing actions

The Town shall require Hurricane Evacuation plans from sensitive, vulnerable or critical facilities which are likely to contain occupants who may not be sufficiently mobile to avoid death or injury during a flood or hurricane, including, but not limited to: hospitals, nursing homes, police stations and fire stations. Timetable A: Planning, Public Safety. **Emergency plans concerning critical facilities are updated annually and added to the Emergency Operations Plan.**

The evacuation, operation, and recovery plans for the Outer Banks Hospital and the Colony Ridge Nursing Home shall be reviewed and approved by the Town's Public Safety Department. These plans shall address the evacuation of critically ill patients, securing the facility prior to and during the storm, and plans for startup after the storm. Timetable B: Planning, Public Safety. **In 2012, Fire, Police, Emergency Management and EMS Staff met with representatives of The Outer Banks Hospital and Colony Ridge Nursing Home to determine methods to best serve the affected special needs population. These interactive meetings identified several deficiencies. Steps have been taken to mitigate hazards and implement new procedures.**

The design of the proposed elementary school shall address flooding and hurricane resistant construction. Timetable (when plans submitted): Planning, Public Safety. **The school is complete and construction meets or exceeds State Building Code requirements.**

It is strongly urged that evacuation drills and tornado drills be conducted at the proposed elementary school. Timetable (when school completed): Public Safety. **This is a school function; however, our Police and Fire Department have participated with and support School preparation activities.**

K. Natural Resource Protection

Open and natural spaces are important elements in Nags Head for their aesthetic value as well as to provide important natural flood mitigation functions such as stormwater retention. The

Town will inventory open space, actively pursue grants and funding opportunities, and develop and implement a plan to acquire and preserve open space throughout the Town.

Implementing actions

The town will identify important areas to be acquired as open space and shall request funds for acquisition of these areas through the budget, CIP, and grant process. Timetable A: Planning. The Town purchased the "Whalebone Park" site in the fall of 2008. It has been developed as a park that serves children between the ages of 2 and 12 and incorporates features which meet ADA guidelines. The park also allows for inclusive play for all children regardless of physical or sensory abilities. The Town is working with the Coastal Area Land Trust to look at additional properties for easement or conservation along the Roanoke Sound as part of a Boardwalk development effort.

The Town has recently purchased the site of the former Dowdy's Amusement Park at the corner of US Hwy 158 and Bonnett Street. This site will be developed as a community park as funding becomes available.

The Town will consider an incentive program rewarding those developers which set aside additional open space in perpetuity. Timetable E: Planning. No action taken as of this date but is being considered as part of stormwater and fill updates currently under development by the Planning Board.

The Town shall continue to acquire land for open space and recreational purposes. Timetable A: Planning. The Town purchased the "Whalebone Park" site in the fall of 2008. It has been developed as a park that serves children between the ages of 2 and 12 and incorporates features which meet ADA guidelines. The park also allows for inclusive play for all children regardless of physical or sensory abilities. The Town is also working with the Coastal Area Land Trust to look at additional properties for easement or conservation along the Sound as part of a Boardwalk development effort. The Town also completed and adopted a Parks and Recreation Plan in 2011. In 2011-12, the Town Board of Commissioners initiated a process of identifying and researching the feasibility of purchasing additional properties. The Town will complete the work needed to dedicate appropriate Town owned property(ies) to the State of North Carolina as a nature preserve. Timetable A: Administration, Planning. No action taken since last update.

L. Brush Fires/Fire Protection

The Town has several areas with greater property damage potential resulting from brush fires. Nags Head Woods is a 1,000 acre maritime forest which abuts several residential neighborhoods. The residential areas in South Nags Head west of SR 1243 from Gulfstream Street to the southern Town limits are susceptible to brush fires because of their proximity to the Cape Hatteras National Seashore. The Nags Head Public Safety Department has an ongoing program to mitigate the potential for damage in these areas.

Implementing actions

The Town shall maintain fire breaks where appropriate. The Town shall coordinate with the National Park Service to maintain the fire break in South Nags Head. Timetable A: Public Safety. The addition of a staffed South Nags Head Station 21 on February 14, 2006 vastly improved the firefighting capabilities of the Town and specifically benefits the South Nags Head residential community. Providing prompt firefighting services in the wild land/urban interface reduce the hazard and damage potential of uncontrolled wildfire in this area.

Ongoing fire prevention efforts include wild land fire prevention discussions with homeowners to assist in maintaining safe clearances from combustible vegetation. 2009, the National Park service and Dominion Power created a 30'-40' firebreak between homes located west of Old Oregon Inlet Road and NPS property. The firebreak lessens the opportunity for uncontrolled fires to affect residences. In March 2012, nearly 200 acres of sound front marsh vegetation was subject to a control burn fuel reduction program that removed extensive fuel loading and helped to decrease the possibility of an uncontrolled wildfire in the Nags Head Woods area. In May 2012, a buffer zone fuels reduction program was completed, effectively removing combustible materials from a firebreak located adjacent Well Field Road and back to Nags Head Woods Road. In February and April of 2013, the Town, NC Forestry and The Nature Conservancy worked together to prescribe burn 50+ acres of private sound front marsh area in Nags Head Woods. This was the first intentional fire in this area and homeowners were pleased with the tremendous fuel reduction afforded by the prescribed burn.

In 2014, Nature Conservancy and Town of Nags Head Fire Staff worked together to complete prescribed burn activities on 10 acres in Nags Head Woods. These events served to reduce loose fuels in firebreak areas, create and improve existing separations from woods and residential areas, and increase proficiency and familiarity with wild land firefighting techniques.

- The Town shall continue the program to remove dead wood in critically fire prone areas. Timetable A: Public Safety. Homeowners may access the fire prevention staff to determine an optimal way to create fire safe landscaping.
- The Town shall review and require maintenance of access for emergency vehicles and fire apparatus. Timetable A: Public Safety. Annual fire inspections of commercial facilities identify areas of fire lane non-compliance and required corrections are mandated by code enforcement officials. Technical reviews of proposed commercial developments incorporate NC fire code access lane requirements. A Nags Head Woods roadway deficiency created by severe storm erosion left fire crews unable to navigate large apparatus along the entire roadway for much of 2011 and a portion of 2012; this has been corrected. The Town of Nags Head provided the 2012 review of Nags Head Woods road to determine if adequate fire apparatus clearance is available, and all was determined to be sufficient to sustain fire equipment access.
- The Town shall evaluate the Nags Head Woods Fire Plan on a regular basis and coordinate information with Nature Conservancy Staff. Timetable A: Public Safety. An evaluation meeting and update of Nags Head Woods Fire Plan was conducted in the spring of 2011. Fire staff performed an annual drive through of Nags Head Woods and conducted the regular meeting with Nags Head Woods Steward Aaron McCall to discuss observed hazards and mitigation/prevention. It appears that State of NC grant funding is potentially available for fuel removal program funding and Fire/Conservancy staffs are meeting in October 2011 to discuss a plan of action and implementation. Currently, homeowners may access the fire prevention staff to determine an optimal way to create fire safe landscaping. A series of fire prevention fuels reduction meetings were conducted to inform/educate the public of the forthcoming Nags Head Woods Marsh controlled burn in March 2012. A series of public fuel reduction meetings were conducted in the fall of 2012 to answer homeowner questions about Nags Head Wood fire prevention and planning for prescribed burns to be conducted in the spring of 2013.

- The Town shall continue cooperation with the US Forest Service and Dare County for mutual aid fire protection. Timetable A: Town Manager's Office, Public Safety. Nags Head Fire Rescue provided mutual aid structural firefighting services to all those Dare County Fire Departments requesting assistance in 2011/2012, as well as utilizing incoming resources to assist in mitigating hazards exceeding the capabilities of Nags Head Fire Rescue. Nags Head continues to maintain excellent mutual aid working relationships with all Dare County fire departments.
 - The Town shall continue to evaluate and update the Nags Head Urban Wild Fire Interface Plan as necessary. Timetable A: Public Safety. An evaluation was completed in 2012 and no changes were made to current plan.
- The Town shall continue to review the water system throughout the Town for fire protection capabilities and prioritize capital improvements as necessary. Timetable A: Public Safety, Town Manager's Office, Public Works. In 2009, Nags Head Fire staff worked with Nags Head Water staff to implement waterline improvements to benefit Northridge Subdivision, Old Nags Head Cove, West Side Court and Gray Eagle Street.
- The Town shall continue to inventory fire hydrants, water distribution infrastructure, and other town infrastructure in support of fire planning efforts. Timetable C: Public Safety, Planning. In 2008 the inventory was reviewed and updated. An additional 1,640 feet of 8-inch waterline under design for US 158 Bypass from Bonnett to Baltic streets was determined to be needed. Lack of funding has prevented the line from being built. A detailed Hydraulic Study was completed in 2010. Several projects to improve domestic flow, and fire protection, were recommended. These have been prioritized and will be constructed when funds are available. The 2013-2014 budget allowed for funding of five additional fire hydrants spaced equally along Wellfield Road. These additional hydrants will enhance fire protection and provide a firefighting water source for uncontrolled wildfires in Nags head Woods.
- The Town shall continue to evaluate and update the capital improvements plan for fire protection infrastructure. Timetable E: Public Safety The Town of Nags Head anticipates a "shared fire facility" partnership with the Town of Kill Devil Hills. This arrangement is based on NC ratings system recommendations that determined a strategically placed fire station would enhance response and lower insurance ratings in both towns. Nags Head and KDH fire administrations met in 2012 to review the future of a shared station and discussed their commitment to working together in this effort. In September 2011, the Town of Nags Head submitted an application for the 2011 FEMA "Assistance to Firefighters" grant program. The application requested funding for a new aerial apparatus to replace the Nags Head 1987 E-One ladder truck. FY 2012/2013 budget process realized funding for the acquisition of a modern aerial fire apparatus to replace the current aged apparatus. The new "quint" type fire apparatus is currently under construction and delivery is expected in the late summer of 2013.

In October 2013, the Town of Nags Head accepted delivery of a Quint Aerial Fire apparatus to replace an aging lady truck. Designed to provide more versatility to firefighting operations, the Quint is equipped with a water tank, pump, aerial device and compliment of ground ladders.

- The Town shall continue its fire education program. This includes newsletter and newspaper articles on fire protection as well as grants from the State Division of Forestry for fire education. Timetable A: Public Safety. The Town shall improve fire

protection in Nags Head Woods with the installation of 'dry hydrants' and maintenance and improvements to Nags Head Woods Road. Timetable B: Public Safety. **The Nags Head Woods road is maintained by Nags Head Public Works and roadway material is added as needed to maintain an acceptable driving surface. In 2011/2012, fire safety related topics and newsletter articles were distributed, and the website updated with current fire prevention information. The "Change your Clock, Change your Battery" program resulted in the installation of numerous new smoke detectors placed in homes in Town. Fire Prevention e mails, tweets and other valuable life safety information were forwarded to the public from the United States Fire Administration, helping to advance injury prevention in Nags Head. Fire information is supplied face to face to the community via the annual October Youth Fire Prevention Night and National Fire Prevention week activities.**

- With the installation of the new water tank, the Town shall install a new 12 inch water line from the Public Works facility to Barnes Street. This will increase fire flow to north end neighborhoods. Timetable C: Public Works, Public Safety, Planning. **This was completed in 2006.**
- The Town shall research available data on underground storage tanks and leaking underground storage tanks. Timetable C: Planning, Public Safety. **Underground fuel tanks, when required by fire code, have been removed or brought into compliance with Fire Code and DEHNR standards.**

M. Water Protection

Nags Head is a member of the Dare County Regional Water System, but no longer operates the Fresh Pond Water Treatment Plant. This has eliminated the threat from natural, or man-made, disasters to this former Public Water Supply source. The Town does operate over 75 miles of distribution system waterlines, and two major pump stations. The town shall continue to identify improvements to make the water system safer.

Implementing actions

- The Town shall coordinate with Kill Devil Hills regarding fencing around their portion of the Fresh Pond. Timetable B: Public Works, Town Manager's Office. **The Fresh pond water treatment plant has been permanently decommissioned.**
- The Town shall continue to evaluate the implementation of water restrictions during periods of drought. Timetable A: Public Works, Town Manager's Office. **The Town has a Water Shortage Supply Plan.**
- The Town of Nags Head shall continue to monitor develop and the installation of on-site septic systems with the Fresh Pond Area of Environmental Concern. Timetable A: Planning. **Process monitored through the development and permitting process.**
- The Town shall continue to cooperate with Dare County on the development of additional water supply well facilities. Timetable A: Planning, Public Works. **The Town continues to cooperate with Dare County as requested. Additional wells and 2 million gallons of treatment capacity added to Dare County Water Plant in Kill Devil Hills in 2005-2006.**

Town of Southern Shores Status Report

1. Continue enforcement of the zoning ordinance as a hazard mitigation tool
 - Ongoing
2. Identify “at risk” X Zone properties for added emphasis on flood risks and notify the responsible agencies about discrepancies between floodplain maps (FIRM versus SLOSH).
 - Ongoing
3. Continue enforcement of the Flood Damage Prevention Ordinance
 - Ongoing
4. Implement stormwater management regulations
 - Ongoing.
5. Continue the enforcement of the NC State Fire Prevention Code, referenced by the Town Fire Code
 - Ongoing
6. Continue enforcing the Lot Disturbance provisions of the Zoning Ordinance
 - Ongoing
7. Continue the periodic controlled burns of marshland to reduce wildfire fuels
 - Has not been satisfied since 2009 as a result of piers/docks being built over the marsh areas
8. Continue testing the fire hydrants once a year and recording data
 - Ongoing
9. Continue implementation of the Waterway Ordinance
 - Ongoing
10. Seek the maximum points available from the Community Rating System to keep flood insurance costs to the citizens as low as possible
 - Ongoing
11. Conduct the Canal Inspection and Debris Removal program twice a year
 - Ongoing
12. Continue enforcement of the state building code, including wind load requirements
 - Ongoing
13. Provide property owners and developers with information regarding the construction of FEMA “Safe Rooms” from the effects of tornadoes and severe storms
 - Not satisfied
14. Continue enforcement of the Dune Protection Ordinance
 - Ongoing
15. Coordinate wildfire prevention efforts with tree preservation policies
 - Ongoing

16. Continue enforcing Coastal Area Management Act (CAMA) regulations
 - Ongoing
17. Continue enforcing the state Erosion and Sedimentation Control regulations
 - Ongoing
18. Continue to have a standing Reconstruction Task Force
 - Ongoing
19. Develop guidelines for reconstruction efforts
 - Satisfied
20. Communicate with citizens about plans and the problems of providing services after a storm event
 - Ongoing
21. Develop a better flood warning system
 - Satisfied
22. Continue to monitor NC Turnpike Authority plans for the Mid-Currituck Bridge to expedite evacuation
 - Ongoing
23. Encourage food stores and pharmacies within the town to have alternative power supplies during and after storm events
 - Ongoing
24. Continue to provide an Emergency Operations Center
 - Ongoing
25. Keep emergency plans current and provide staff with continuing education opportunities
 - Ongoing
26. Educate citizens on expected impacts of hazards on daily lives
 - Ongoing
27. Continue current public information outreach efforts regarding flooding
 - Ongoing
28. Continue e-mail and website services
 - Ongoing

Gatesville Status Update

MITIGATION ACTION 1	Open waterways by clearing debris in ditches throughout county to minimize localized flooding.
Category:	Preventative Maintenance
Hazard(s) Addressed:	Flood, Hurricanes and Tropical Storms, Thunderstorms
Priority (High, Moderate, Low):	High
Estimated Cost:	Not known (NCDOT provides this service countywide).
Potential Funding Sources:	NCDOT
Lead Agency/Department Responsible:	NCDOT
Status	Working with NCDOT to get debris removed from ditches
MITIGATION ACTION 2	Expansion of US Highway 13/158 for greater evacuation capacity.
Category:	Infrastructure
Hazard(s) Addressed:	Hurricanes and Tropical Storms, Flood
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Not known.
Potential Funding Sources:	NCDOT
Lead Agency/Department Responsible:	NCDOT
Status	Continue to discuss widening project with NCDOT
MITIGATION ACTION 3	Increase public awareness of local hazard mitigation plan and emergency response plan.
Category:	Public Education and Awareness
Hazard(s) Addressed:	All Hazards
Priority (High, Moderate, Low):	High
Estimated Cost:	Minimal costs for booklets, brochures and other printing (in addition to publications available free through such organizations as FEMA and the American Red Cross). Electronic Communication will also be used through our website and Social Media Campaigns
Potential Funding Sources:	None needed.
Lead Agency/Department Responsible:	Gates County Emergency Management
Status	Ongoing- providing outreach to citizens

MITIGATION ACTION 4	Continue to enforce existing building code and fire code, and investigate appropriate ways to advance these codes for greater future effectiveness with regard to natural hazards.
Category:	Property Protection
Hazard(s) Addressed:	All Hazards
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Administrative time and costs only.
Potential Funding Sources:	None needed.
Lead Agency/Department Responsible:	Gates County Inspections and Planning
Status	Inspections Department continues to enforce existing codes
MITIGATION ACTION 5	Annually review the Flood damage prevention ordinance and ensure compliance with HMP
Category:	Planning and Policy
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Administrative time and costs only.
Potential Funding Sources:	None needed.
Lead Agency/Department Responsible:	Gates County Planning and Zoning
Status	Conduct annual review of Flood Damage Prevention Ordinance and other codes
MITIGATION ACTION 6	Annually review HMP strategies and actions as they effect the Land Use Plan and Gates County Zoning Ordinance
Category:	Planning and Policy
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Administrative time and costs only.
Potential Funding Sources:	None needed.
Lead Agency/Department Responsible:	Gates County Planning and Zoning
Status	Continue to conduct annual review of HMP strategies as well as making the necessary changes to Land Use and Zoning codes
MITIGATION ACTION 7	Ensure floodplain mapping and management are considered in planning documents such as Land Use, Zoning Ordinance
Category:	Planning and Policy
Hazard(s) Addressed:	Flood
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Administrative time and costs only.
Potential Funding Sources:	None needed.
Lead Agency/Department Responsible:	Gates County Planning and Zoning
Status	Reference to floodmaps and floodplain regulations are made in Zoning and Land Use codes

Completed Actions: Millpond Bridge Project- NCDOT completed this project correcting a flooding issue at the Dam/spillway and traffic concerns by separating pedestrian and automobile traffic.

County Communications Tower- Through a coordinated effort with NCSHP and Gates County our communications antennas were moved from 100' to more than 300' correcting issues with public safety radio deficiencies.

Mass Notification Implementation- Gates County investigated and purchased CodeRED as mass notification for emergencies.

Increase Law Enforcement and EMS Personnel- Gates County was able to bolster emergency response capabilities by hiring additional Law Enforcement Officers and EMS was able to double its capability as well as increasing the level of care to Paramedic.

Gatesville Status Update

MITIGATION ACTION 1	Increase emergency management training opportunities for town personnel.
Category:	Personnel Resources
Hazard(s) Addressed:	All Hazards
Priority (High, Moderate, Low):	Moderate
Estimated Cost:	Many training and educational opportunities—campus-based as well as Web-based—are available through FEMA’s Emergency Management Institute (EMI). There are no tuition fees for on-campus courses and all instruction, course materials and housing (for most participants) is provided at no cost. (Participants must pay for on-campus meals and personal, incidental expenses.)
Potential Funding Sources:	None needed.
Lead Agency/Department Responsible:	Gates County Emergency Management
Status	Continue to provide training for town staff

Completed Actions: Repetitive Loss Property Claims- Through investigation it has been discovered that the alleged Repetitive Loss Property was actually not within the town limits therefore no longer relevant.

Hertford County Status Report (Including Ahoskie, Como, Harrellsville, Murfreesboro ,Winton)

Objective 1: Ensure that sheltering facilities are well publicized, accessible and meet national standards for safety and supply. (E) – **Ongoing**
Meet with Red cross and DSS annually, in the process of shelter assessments, adding additional small shelters.
Website is maintained and updated by the county.
Have MOU for sheltering with Red Cross.

Action Item	Mitigation Goals Addressed	CRS Activity/ NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options (Appendix I)	Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)	Responsible Party
Maintain a continuously updated list of all approved shelters. (N)	1		Emergency Services	All Hazards	Staff Resources, General Funding	High	New	Hertford County Emergency Management
Continuously maintain, on the County's website, instructional information on ensuring that onsite sheltering is as safe an option as possible. (N)	1		Emergency Services	All Hazards	Staff Resources, General Funding	High	New	Hertford County Emergency Management
Inspect local shelters to determine compliance with American Red Cross (ARC) Shelter Standards (see Appendix J). (E)	1,3		Emergency Services	All Hazards	Staff Resources, General Funding	Medium	Action #11	Hertford County Emergency Management with the American Red Cross

Objective 2: Reduce the frequency of electrical outages and the length of time such outages last. (E) – **Ongoing**

Have Electric Cooperative on Local Emergency Planning Committee.

Continue to add generators to county facilities in capital improvement projects for secondary power. Power company websites with outages allows for loss of power results.

Action Item	Mitigation Goals Addressed	CRS Activity/ NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options (Appendix I)	Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)	Responsible Party
Maintain continuous contact/working relationship with electric service providers in the County to address the following (1) disaster preparedness techniques (e.g tree trimming, vegetation planting requirements, pole replacement), (2) Identify critical electrical facilities needing retrofit or upgrade and map with elevation reference marks and (3) communication with County officials during and immediately after a natural hazard event that results in loss of electrical power. The MAC will meet at least once per year with electric service providers. (A)	3		Emergency Services	Wind/Ice Storms	Staff Resources, General Funding, Utility Provider Funding	High	Action #12	Hertford County Emergency Management, Municipal Managers/Administrators or Mayors, and Electrical Utility Providers
Improve capability of secondary power source at all County and Municipal Critical Facilities. (N)	3		Emergency Services	All Hazards	Staff Resources, General Funding, State Funding, Federal Funding	Medium	New	Hertford County Emergency Management, Municipal Managers/Administrators or Mayors, Public Works Director
Retrofit all County and Municipal facilities for lightning protection. (N)	3		Property Protection and Emergency Services	Lightning/Fire	Staff Resources	Medium	New	Hertford County Emergency Management, Municipal Managers/Administrators or Mayors, Public Works Director

Objective 3: Preserve open space in floodplain areas. (E) – Ongoing -										
Action Item	Mitigation Goals	CRS Activity/ NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options (Appendix I)	Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)	Responsible Party		
	Addressed									
Support through local ordinances conservation easements on all flood prone property and impose such easements on all properties acquired with public assistance funds. (N)	1, 2	420/NFIP	Prevention	Flooding	Staff Resources, General Funding	High	New	Hertford County Emergency Management, Municipal Managers/Administrators or Mayors, Public Works Director		
Coordinate open space planning and preservation with all local certified CAMA land use plans. (N)	1,2	420/NFIP	Prevention and Natural Resource Protection	Flooding/ Erosion	Staff Resources, General Funding	Low	New	Hertford County, Municipal Managers/Administrators or Mayors		
Provide annual review of development restrictions in floodplain areas and maintain initiatives to ensure limited residential and commercial development in the floodplain and protection of critical facilities. Specifically address soil testing for engineered foundations, minimum lot size, critical facility protection, manufactured home park requirements including anchoring and elevation, and freeboard requirements (see Appendix K for minimum National Flood Insurance Program (NFIP) requirements). (N)	1,2	430/NFIP	Prevention, Property Protection, and Natural Resource Protection	Flooding/ Erosion	Staff Resources, General Funding	High	New	Hertford County Emergency Management, Municipal Managers/ Administrators or Mayors		

Objective 4: Reduce the risk of damage from wildfires (including underfires) to existing and future development. (E) – **Ongoing Completed (Community Wildfire Protection Program), ongoing hazard reduction burns conducted by the NC Forest Service. NC Forest Service continues to educate the public on wildfire prevention.**

Action Item	Mitigation Goals		CRS Activity/ NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options		Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)		Responsible Party
	Addressed					(Appendix I)					
The MAC will review "firewise" zoning and subdivision standards and recommend their appropriateness for incorporation into existing (or new) zoning or subdivision ordinances. (Source http://www.firewise.org) (E)	1,2,4			Property Protection	Fire	Staff Resources, General Funding	Medium	Action #9		MAC in concert with the County and Participating Municipalities	
Coordinate public education on the hazards of wildfires with the NC Forestry Services ongoing wildfire education program. (N)	3			Property Protection	Fire	Staff Resources, General Funding	Medium	New		MAC in concert with the County and Participating Municipalities	

Objective 5: Reduce flooding and erosion vulnerability through land use development initiatives, maintenance and improvement of storm drainage. (A) – **Ongoing**
A finished Floor elevation Certificate is already required for construction in an SFHA. We do not issue building permits without it. It would be helpful to the public if every Zoning Permit noted if the proposed construction was in a flood zone or not. This eliminates them coming from zoning to our office only to discover they need and elevation certificate before we will issue any permits.

Action Item	Mitigation Goals		CRS Activity/ NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options		Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)		Responsible Party
	Addressed					(Appendix I)					
Annually review County and Municipal Zoning, Subdivision, and Flood Damage Prevention Ordinances for improved control of flooding hazards and improvement of drainage. Such revisions should meet or exceed National Flood Insurance Program Minimum Requirements for Safer Development in Floodprone Areas (see Appendix K for minimum NFIP requirements). Specifically, the Town of Como will pursue adoption of a Flood Damage Prevention Ordinance. (A)	1,2,3		430/NFIP	Prevention	All Hazards	Staff Resources, General Funding	High	Action #5		Inspections Department Hertford County Planning Department, Municipal Managers/Administrators or Mayors	

<p>Adopt and annually update a capital improvement plan with an emphasis on mitigation for critical facilities including relocation and retrofitting. (NOTE: Subject to funding availability). This strategy applies to the County and the Towns of Ahoskie, Murfreesboro, and Winton. (A)</p>	<p>1,2,3,6</p>				<p>Staff Resources, General Funding</p>	<p>Medium</p>	<p>Action #6</p>	<p>Hertford County Manager, Municipal Managers/ Administrators or Mayors</p>
<p>At the local government staff level, work with the North Carolina Dept. of Transportation (NCDOT) and the Regional Planning Organization to identify drainage problem areas and develop resolutions for drainage issues created by NCDOT facilities, including inspections of channels, retention basins, and, as needed, pursue debris removal. (A)</p>	<p>1,2</p>	<p>540/NFIP</p>			<p>Staff Resources, General Funding</p>	<p>Medium</p>	<p>Action #8</p>	<p>MAC, Hertford County and participating municipalities coordinate with the transportation regional planning organization</p>

Objective 5 continued: Reduce flooding and erosion vulnerability through land use development initiatives, maintenance and improvement of storm drainage. (A) – **Ongoing**
In 2012 the Bertie, Hertford, Northampton Drainage District # 1 applied for a Grant from the NC Department of Agriculture And Consumer Services for Stream Debris Removal. We were awarded \$ 57916 and removed debris from 21.7 miles of Ahoskie Creek Main Channel. An annual inspection is done on this project every year. In July of 2014 the Hertford Drainage District # 1 obtained a grant from the NC Department of Agriculture and Consumer Services for debris removal on various locations on Horse Swamp Flat Swamp Watershed Project for the Sum of \$3450.00. An annual inspection is done on this project every year.

Action Item	Mitigation Goals Addressed		CRS Activity/ NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options (Appendix I)		Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)		Responsible Party
	1,2,3,6	Addressed				Staff Resources, General Funding	Staff Resources, General Funding		High	Action #13	
Apply for all available funding from the Hazard Mitigation Grant Program (HMGP) and funds to assist with the mitigation of severe repetitive loss properties to relocate structures out of the floodplain. (A)	1,2,3,6	Addressed	520/NFIP	Prevention	Flooding	Staff Resources, General Funding	Staff Resources, General Funding	High	Action #13	Hertford County Emergency Management, Hertford County Planning Department, Municipal Managers/ Administrators or Mayors	
Require a finished floor elevation certificate for all development within the special flood hazard area (SFHA) in both incorporated and unincorporated portions of the County. All elevation certificates should be submitted on an official FEMA elevation certificate. No certificate of occupancy shall be issued for any development within a defined special flood hazard area without the submittal of the required elevation certificate. (N)	1,2,4		310/NFIP	Prevention	Flooding	Staff Resources, General Funding	Staff Resources, General Funding	High	New	Hertford County, Ahoskie, and Murfreesboro Building Inspections Departments	
Inspect debris blockage problems and secure funds for the clearance of debris from rivers, streams, and tributaries. (N)	1, 6			Prevention	Flooding	Staff Resources, General Funding	Staff Resources, General Funding		New	Hertford County Planning Department, and Municipal Managers/Administrators or Mayors, Hertford County Soil and Water Conservation Service	

Objective 6: Improve the public understanding of local vulnerability to hazards and improve disaster warning/post-disaster information efforts. (A) -ongoing

(1) We do this already. And the information is included on GIS maps. (2) I found this information nowhere. Should be fairly simple to create a page in the information section providing the information noted here. (3) Where do I find historical FIRMs? (4) Advertise what? Who pays for it? (5) Already done to the best of our ability. (6) The County has a newsletter? Letter on flood insurance should be handled under item 2. (7) How often do you propose to notify these property owners? And owners are not always the occupants impacted by flooding. (8) What is purpose of this log? (9) And where would we maintain this log?

Action Item	Mitigation Goals Addressed		CRS Activity/NFIP*	Focus Areas	Hazards Addressed		Supplemental Funding Options (Appendix I)		Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)		Responsible Party
	Goals Addressed											
Maintain a map information service involving the following: (1) Provide information relating to Flood Insurance Rate Maps (FIRM) to all inquirers, including providing information on whether a given property is located within a flood hazard area. (2) Provide information regarding the flood insurance purchase requirement on the county's website. (3) Maintain historical and current FIRMs. (4) Locally advertise once annually in the local newspaper. (5) Provide information to inquirers about local floodplain management requirements. (6) Include in the county's newsletter (all property owners) and on the county's website a letter on flood insurance. (7) Notify property owners within a flood prone area that they are subject to flooding. (8) Maintain a log of inquiries including: date, FIRM zone of subject property, address/location of subject property, indication that inquirer was informed of Insurance purchase requirement. (N)	5		320, 330/NFIP	Public Education/Information	Flooding	Staff Resources and General Funding	High	New		Hertford County Planning Department, and Hertford County and Ahoskie Inspections Departments		
Hertford County will once annually mail a notice to all property owners whose land is located within a special flood hazard area. This notice should clearly state that the recipients' property is susceptible to flooding. (N)	5		330/NFIP	Public Education/Information	Flooding	Staff Resources and General Funding	High	New		Hertford County Planning Department-Inspections Department		

Objective 6 continued: Improve the public understanding of local vulnerability to hazards and improve disaster warning/post-disaster information efforts. (A) **–ongoing**

(1) We do this already to the best of our abilities. (2) We maintain a list of contractors though to flood proofing and retrofitting. I will see what we can do. (3) Costs for pamphlets will need to be included in the budget. I will check to see what funds are available. (4) We are not qualified to provide advice on flooding, drainage and sewer problems. Soil Conservation and the Health Department handle those items. (5) Advertise what services? And who submits and pays for advertisement? (6) Again purpose of log? And where is it to be maintained?

Action Item	Mitigation Goals		CRS Activity/NFIP*	Focus Areas	Hazards Addressed		Supplemental Funding Options (Appendix I)		Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)		Responsible Party
	Addressed	Addressed			Addressed	Addressed	Addressed	Addressed				
Hertford County will work with local real estate agencies to ensure that agents are informing clients when property for sale is located within a Special Flood Hazard Area (SFHA). The County will provide these agencies with brochures documenting the concerns relating to development located within flood prone areas. Maintain a copy of the brochure and disclosure statements from at least five (5) local real estate agencies confirming brochure availability. (A)	5		330, 340/NFIP	Public Education/Information	Flooding		Staff Resources and General Funding	High		Action #10	Hertford County Planning Department-Inspections Department	
Hertford County will make information regarding hazards and development regulations within the floodplains through the following: (1) The County Planning Director will ensure that the local library maintains information relating to flooding and flood protection. (Maintain dates of distribution and librarian certification of availability.) (2) The County will provide a link on their website to FEMA resources addressing flooding and flood protection. (A)	5		330, 350/NFIP	Public Education/Information	Flooding		Staff Resources and General Funding	High		Action #10	Hertford County Planning Department-Inspection Department	
Hertford County will coordinate with the Hertford County School System Hazards Awareness Educational Programs for use by educators within the Hertford County School System. (A)	5		330/NFIP	Public Education/Information	All Hazards		Staff Resources, General Funding	Low		Action #10	MAC with Staff Support from the Hertford County Planning Department and participating municipalities	

Objective 6 continued: Improve the public understanding of local vulnerability to hazards and improve disaster warning/post-disaster information efforts. (A) **-ongoing**

Action Item	Mitigation Goals Addressed	CRS Activity/NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options (Appendix I)		Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)		Responsible Party
Hertford County will provide comprehensive services regarding planning and development activities within the defined SFHA. These services will include (1) Provide site-specific flood and flood related information on an as-needed basis, (2) Maintain a list of contractors with experience in floodproofing and retrofitting techniques at the Building Inspections Dept., (3) Maintain materials providing an overview of how to select a qualified contractor at the Building Inspections Dept., (4) Site visits will be performed upon request by the Building Inspections Dept. to review occurrences of flooding, drainage, and sewer problems--if applicable, inspector should provide one-on-one advice to the property owner; (5) Advertise the availability of services once annually within the local newspaper; and (6) Maintain a log of all individuals assisted through these services, including site visits. (A)	5	360/NFIP	Public Education/Information	Flooding	Existing Department and Staff Resources	Medium	Action #10		Hertford County Planning Director, Hertford County and Ahoskie Inspections Departments	
Hertford County will maintain a comprehensive Geographic Information System (GIS) with current FIRM panels in an effort to make this information readily available to County citizens. In addition to this digital data, bound copies of all historical and current FIRM panels will be maintained within the Hertford County Planning Department. (N)	5	330, 440/NFIP	Public Education/Information	Flooding	Staff Resources, General Funding	High	New		Hertford County Planning Department/Land Records Inspections Department	

Objective 7: Ensure effective local/interagency communication and response during disaster events. (N) **Ongoing – Special Needs registry is available.**

Action Item	Mitigation Goals Addressed	CRS Activity/ NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options (Appendix I)	Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)	Responsible Party
	Maintain a registry of special needs individuals which has been coordinated with the Hertford County Department of Social Services. This list will include: (1) Persons on life support systems, (2) Persons dependent on electricity for medical equipment, and (3) Persons with severe mental handicap or mental illness. (N)	5		Emergency Services	All Hazards	Staff Resources and General Funding	High	New
The MAC, in conjunction with Hertford County and the participating municipal jurisdictions, will work on the five-year implementation of this plan. (N)	1, 2, 3, 4,5,6	510/NFIP	Prevention, Property Protection, Resource Protection, Emergency Services, Structural Mitigation, Public Education/Information	All Hazards	Staff Resources and General Funding	Medium	New	Hertford County and all participating jurisdictions

Objective 8: Identify specific potential man-made hazards and mitigate potential risks. (N) **Ongoing**

Planning Director sits on the Tri-County Airport Board and maintains dialog.

County continues to support NC Office of Dam Safety when needed.

Hazardous Material site visits have been conducted on all EHS facilities and Plans have been created and added to the county EOP.

Action Item	Mitigation Goals Addressed	CRS Activity/ NFIP*	Focus Areas	Hazards Addressed	Supplemental Funding Options (Appendix I)		Priority	Reference to 2005 Plan (see pgs 7-1 to 7-5)		Responsible Party
Maintain dialogue with the Tri-County Airport Authority to effectively regulate land use as the County continues to grow and encroach upon the airport environs. (N)	1, 2, 6		Emergency Services, Property Protection	Man-made Hazards	Staff Resources and General Funding		Low	New	Hertford County Planning Department	
Hertford County will continue to support the NC Office of Dam Safety's efforts to monitor and inspect all dams throughout the state. The county will rely on this agency to ensure that all dam facilities, both public and private, are properly maintained and stable. (E)	1, 4, 7	630/NFIP		Man-made Hazards	Staff Resources		Low	Action #7	NC Office of Dam Safety	
Maintain a list of all hazardous material sites or transport corridors in Hertford County. (N)	1, 2, 6		Emergency Services	Man-made Hazards	Staff Resources		Medium	New	Hertford County Emergency Management	

PASQUOTANK COUNTY – UPDATE ON HAZARD MITIGATION GOALS

HURRICANE MITIGATION STRATEGY

Goal 1: Minimize the Impact of Hurricane Wind Events

Objective 1: Improve the wind resistance of structures in the county/city.

1. Continue to enforce the North Carolina Building Code. The requirement that new structures or structures undergoing significant renovation be resistant to wind loads of 110 m.p.h. is of particular importance.
 - Update – Ongoing through county/city inspections departments.
- ~~2. Educate contractors about safe housing development through written materials or a county sponsored symposium.~~

Objective 2: Educate home and property owners about wind resistant measures.

1. Hold a county/city-sponsored hazard mitigation symposium for the county residents and surrounding municipalities, including information on preparedness for all hazards significant to Pasquotank County.
 - Update – Information is disseminated via various forums to include: talks to Civic Groups, distribution of information at Festivals/Public Events, Social Media, etc.
2. Provide homeowners information on wind resistant measures
 - Update – Ongoing via talks to Civic Groups, distribution of information at Festivals/Public Events and through Planning/Inspections Departments.
3. Educate mobile home contractors and owners about wind proofing measures, including wood and light steel construction connectors and anchoring systems.
 - Update – Ongoing (information provided by inspections departments)

Objective 3: Maintain and publicize the Pasquotank County/Elizabeth City hurricane evacuation route in order to facilitate evacuation to inland areas.

1. Post information about Pasquotank County's emergency evacuation routes.
 - Update – Information provided during various public events/educational events. Also posted to EM website and via social media.

Objective 4: Maintain and publicize the Pasquotank – Camden – Elizabeth City County Multi-Hazard Emergency Operations Plan.

1. Review the Pasquotank-Camden-Elizabeth City Multi-Hazard Emergency Operations Plan annually and update the plan as necessary. Ensure all County and City departments continue to develop guidelines for response to emergencies and to maintain departmental operations. Work with County and City departments to ensure each department possesses a

clear understanding of department responsibilities as outlined in the Pasquotank-Camden-Elizabeth City Multi-Hazard Emergency Operations Plan.

- Update – Annual update of Multi-Hazard Plan, conduct exercises with departments addressing their roles and responsibilities as outlined in the Multi-Hazard Plan.

Objective 5: Reduce the impact of wind on trees near county/city structures.

1. Monitor trees and branches at risk of breaking or falling in windstorms. Prune or thin trees or branches on county/city property when they would pose an immediate threat to property, utility lines or other significant structures or critical facilities in the community.
 - Update – Ongoing actions through maintenance.

Objective 6: Reduce the vulnerability of local government agencies and facilities to hurricane events.

1. Continue efforts to develop continuity of operations plans (COOP) for county/city departments. Continuity of operations planning efforts are currently underway in the county/city.
 - Update – Ongoing planning in county/city departments.
2. Encourage the installation of generator switches in new construction critical facilities. As projects go through Technical Review Committee, applicants can be encouraged to pre-wire facilities for a generator. New construction critical facilities that would benefit from pre-wiring include but are not limited to public schools, local government facilities, facilities that may be utilized as storm shelters, adult care facilities, etc.
 - Update – Ongoing – A generator has been installed at the Pasquotank County Courthouse capable of running the critical functions of the county. Also, a Transfer Switch has been installed at the County/City's primary pre-hurricane shelter.

FLOOD MITIGATION STRATEGY

Goal 1. Identify and Map Flood Prone Areas

Objective 1: Record all structures within the floodplain as well as areas of repetitive losses due to flooding.

1. Record all tax parcel information and floodplain locations in a GIS system including repetitive loss areas, areas of greatest risk, and vulnerable populations. This information will be provided to the GIS Coordinator by the Emergency Management Agency.
 - Update – Completed – Updated as needed.

Goal 2: Avoid the Hazards of the Floodplain

Objective 1: Acquire and preserve properties subject to repetitive flooding from willing and voluntary property owners through hazard mitigation grant funding. Continue to identify areas and properties subject to repetitive flooding.

1. Continue efforts to acquire the “Perry Properties” located in the area of Ehringhaus Street and McMorrine Street in Elizabeth City utilizing hazard mitigation grant funding for repetitive flood loss properties.
 - Update – As funding becomes available.
2. Continue efforts to acquire repetitively flooded properties in the Oxford Heights subdivision of Elizabeth City utilizing hazard mitigation grant funding.
 - Update – As funding becomes available.

Goal 3: Minimize the Impacts of Flooding

Objective 1: Minimize economic and property losses due to flooding.

1. Participate in the [Community Rating System](#).

The [National Flood Insurance Program’s](#) (NFIP) Community Rating System (CRS) allows counties and municipalities to reduce flood insurance rate premiums for citizen property owners. In order to capitalize on these reductions, counties and cities must take specific steps to improve upon the minimum floodplain management requirements of the NFIP. The CRS awards flood insurance premium discounts from 5-45% for eighteen different flood management activities that fall into the following four categories: public information, mapping and regulation, flood damage reduction, and flood preparedness. Participation in the CRS, which is contingent upon county compliance with NFIP rules, will provide Pasquotank County and the city of Elizabeth City with the opportunity to dramatically reduce flood insurance rate premiums for its residents. In order to participate, the county/city must designate a CRS coordinator to handle the application and serve as a liaison between the county/city and the [Federal Emergency Management Agency](#). Work on a CRS plan is facilitated by completion of a county/city hazard mitigation plan.

- Update – County/City is in compliance with NFIP – Ongoing work towards participation in the CRS.
2. Revise zoning and subdivision ordinances to increase lot sizes in areas with poor soils. As flooding is exacerbated by soils that cannot adequately absorb the water, areas with poor soil conditions should be avoided as much as possible in future developments. Increasing the lot size within subdivisions will provide more area for soil water absorption and lessen damages to properties in the area. The county/city land use plan policy should be implemented to revise the zoning ordinance so that the minimum lot size in future subdivisions is increased, and existing subdivisions should be re-platted to the largest extend possible. The subdivision standards require that the building pad be at least 1 foot above the base flood elevation for a 100 year floodplain.
 - Update – Complete – County lots increased to 43,000 square feet
 3. Reduce the vulnerability of infrastructure and the built environment by identifying infrastructure (i.e. pumping stations, roads) in the city/county that is repetitively damaged by flooding and consider ways to reduce those vulnerabilities. Areas of concern include, but are not limited to: Water Street, Herrington Road, Southern Avenue/Parkview Drive, Roanoke Avenue, Road Street, Elizabeth Street, Creek Road, Providence Road (Oxford Heights), and Riverside Road.
 - Update – Ongoing. Infrastructure has been identified. County/City seeks ways to reduce vulnerabilities and opportunities for Mitigation Funding.

Objective 2: Provide information to citizens on flooding preparedness.

1. As with other hazards of concern to Pasquotank County and the City of Elizabeth City, a hazard mitigation symposium should be held for its residents, including information on preparedness for all hazards significant to its jurisdiction. The symposium should encourage property owners in flood prone areas to consider the options of elevation, relocation, and flood proofing.
 - Update – Ongoing – Information regarding flood proofing provided via various forums.
2. Distribute information identifying flood prone areas within the county/city. Address the need for evacuation and family preparedness plans especially for residents living within flood prone areas.
 - Update – Ongoing. EM also maintains a Special Needs Registry – evacuation and family preparedness information is made available to this population as well as the non-English speaking population in Pasquotank County/Elizabeth City.

Goal 4: Protect Pasquotank River and Little River, as well as surrounding ecosystems

Objective 1: Protect/Enhance Shoreline Vegetation.

- ~~1. Incorporate shoreline vegetation protection buffers into the City of Elizabeth City's Unified Development Ordinance as a stipulation to development in and near areas of environmental concern.~~

Objective 2: Control Adverse Effects of Storm Water Runoff.

1. In order to reduce storm water runoff, the city should minimize construction of additional impervious surfaces within the floodplain. [Elizabeth City's Stormwater Management Ordinance](#) addresses mitigation measures to control the adverse effects of increased storm water runoff associated with both future land development and existing developed land within the City.
 - Update – Ongoing – stormwater management is a part of land development within the city.

TORNADO MITIGATION STRATEGY

Goal 1: Minimize the Impacts of Tornadoes on Life and Property

Objective 1: Improve the wind resistance of structures in the county/city.

1. Continue to enforce the North Carolina Building Code. The requirement that new structures or structures undergoing significant renovation be resistant to wind loads of 110 m.p.h. is of particular importance.
 - Update – Ongoing through county/city inspections departments.
- ~~2. Educate contractors about principles for quality redevelopment and safe housing development through written materials or a county/city-sponsored symposium.~~

Objective 2: Educate home and property owners about wind proofing measures.

1. Hold a county/city-sponsored hazard mitigation symposium for the county residents and surrounding municipalities, including information on preparedness for all hazards significant to Pasquotank County.
 - Update – Ongoing (information is distributed during public events and is posted on Camden-Pasquotank Emergency Management Website and Facebook).
- ~~2. Provide new home and property buyers with information on wind proofing. This information may be most efficiently dispersed by the tax assessor's office because all home transactions are recorded there.~~
3. Educate mobile home contractors and owners about wind proofing measures, including wood and light steel construction connectors and anchoring systems.
 - Update – Mobile homes are only allowed in designated residential zones and newly placed homes must be built in compliance with the Federal Manufactured Housing and Construction Safety Standards (110 mph wind codes). Requirements for anchoring the mobile home are also a part of the county's Zoning Ordinance.

Objective 3: Reduce the impact of wind on trees near county/city structures.

1. Monitor trees and branches at risk of breaking or falling in windstorms. Prune or thin trees or branches on county/city property when they would pose an immediate threat to property, utility lines or other significant structures or critical facilities in the community.
 - Update – Ongoing actions through maintenance.

Objective 4: Maximize Citizen Preparedness for Tornadoes.

1. Warning System Improvements. Several options exist for a tornado warning system. One option is to position sirens in heavily populated areas with a specific signal that indicates a tornado warning. Residents in hearing distance at the moment of the sounding will hear the signal. One tornado siren is presently located on the water tower behind Elizabeth City Police Department and is manually activated when a tornado warning is received.
 - Update – Citizens are given information regarding free applications available for severe weather alerts and are also encouraged to purchase weather radios.
2. Encourage the practice of placing storm shelters in all mobile home areas and subdivisions.
 - Update – Ongoing – encouraged if funding is available.

THUNDERSTORM MITIGATION STRATEGY

Goal 1: Minimize the Impacts of Severe Thunderstorms

Objective 1: Educate the public on the hazards of thunderstorms.

1. As with other hazards of concern to Pasquotank County and the City of Elizabeth City, the county/city can sponsor a hazard mitigation symposium for its residents, including information on preparedness for all hazards significant to Pasquotank County.
 - Update – Ongoing (information is distributed during public events and is posted on Camden-Pasquotank Emergency Management Website and Facebook).

Objective 2: Minimize the impacts of lightning strikes.

1. Encourage the installation of lightning detection devices be installed in public outdoor gathering areas such as school stadiums and ball parks.
 - Update – Ongoing (funds not available).
2. In order to minimize injury from lightning strikes, shelters should be placed every 10 acres in all public open space recreation areas. This recommendation should be encouraged by the county and the city.
 - Update – Ongoing (funding not available at this time).

Objective 3: Improve the wind resistance of structures in the county/city.

1. Continue to enforce the North Carolina Building Code. The requirement that new structures or structures undergoing significant renovation be resistant to wind loads of 110 m.p.h. is of particular importance.
 - Update – Ongoing through county/city inspections departments.
2. ~~Educate contractors about principles for quality redevelopment and safe housing development through written materials or a county/city sponsored symposium.~~

Objective 4: Educate home and property owners about wind proofing measures.

Recommended Mitigation Measures

1. Hold a county/city-sponsored hazard mitigation symposium for the county residents and surrounding municipalities, including information on preparedness for all hazards significant to Pasquotank County.
 - Update – Ongoing (information is distributed during public events/civic talks and is posted on Camden-Pasquotank Emergency Management Website and Facebook).

- ~~2. Provide new home and property buyers with information on wind proofing. This information may be most efficiently dispersed by the tax assessor's office because all home transactions are recorded there.~~
3. Educate mobile home contractors and owners about wind proofing measures, including wood and light steel construction connectors and anchoring systems.
 - Update – Mobile homes are only allowed in designated residential zones and newly placed homes must be built in compliance with the Federal Manufactured Housing and Construction Safety Standards (110 mph wind codes). Requirements for anchoring the mobile home are also a part of the county's Zoning Ordinance.

Objective 5: Reduce the impact of wind on trees near county/city structures.

1. Monitor trees and branches at risk of breaking or falling in windstorms. Prune or thin trees or branches on county/city property when they would pose an immediate threat to property, utility lines or other significant structures or critical facilities in the county.
 - Update – Ongoing actions through maintenance.

Objective 6: Increase driving safety during thunderstorms

1. Driving in storm conditions can create hazardous road conditions, including decreased ability for drivers to see road boundaries. To improve road visibility, reflector tape or paint along road edges and in the dividing line should be placed on all major roads through city/county.
 - Update – As funds are available this is maintained by NCDOT

FIRE MITIGATION

Goal 1: Minimize Risk of Fire

Objective 1: Maintain a current action plan for fire response.

1. Conduct an annual review of the Pasquotank-Camden-Elizabeth City Multi-Hazard Emergency Operations Plan. Maintain current emergency contact information.
 - Update - Annual update of Multi-Hazard Plan. Emergency Management Coordinator attends annual NC Forest Service Cooperative Meeting. EM Coordinator maintains current contact information.

2. Educate homeowners and farmers on fire control methods.
 - Update – Ongoing (information provided by fire departments, Emergency Management and NC Cooperative Extension Service)

Objective 2: Educate home and property owners about Wildland/Urban Interface fire safety.

1. Educate homeowners within wildfire threat areas about Wildland/Urban Interface fire safety. Implement Firewise Program within hazard communities.
 - Update – Ongoing through local fire departments and NC Forest Service.

Perquimans County Status Update

Action #	Actions	Hazard	Objective(s) Addressed	Relative Priority	Funding Sources	Responsible Party	Target Completion Date
Preventive Actions							
P-1	Monitor trees and branches at risk of breaking or falling in windstorms. Prune or thin trees or branches on county property when they would pose an immediate threat to property, utility lines, or other significant structures or critical facilities in the county.	All	1.1	Moderate	Local	BG	Ongoing
P-2	Create a preferred foliage and wind resistant tree list for the County. Distribute the list to property owners in an effort to reduce the risk of trees and plants from breaking in high wind events. This has not yet been pursued.	All	1.1	Moderate	Local	PL	Ongoing
P-3	Record all tax parcel information and floodplain locations in a GIS system including repetitive loss areas, areas of greatest risk, and vulnerable populations. Maintain and update GIS layers that identify critical facilities/infrastructure and other facilities to include childcare centers, mobile home parks/subdivisions, and senior care facilities.	Flood	3.1	Moderate	Local	GIS PL EM	Ongoing
P-4	Consider participating in the Community Rating System (CRS). This has not yet been pursued.	Flood	2.2	Moderate	Local	BOC BI PL	2011 2020
P-5	Continue to review rebuilding activities after major storm events to determine how revisions to existing policies and procedures could help minimize repetitive losses.	All	1.1	Moderate	Local	BI	Ongoing
P-6	Ensure that mobile manufactured homes are installed and secured properly.	All	4.1	High	Local	BI	Ongoing
P-7	Complete the review and consider adoption of "Stormwater and Drainage Management Standards" to augment current zoning and subdivision ordinances, as included in the Planning Board's Fiscal Year 2009-2010 Work Program. The TRC has recommended adoption of this Ordinance.	Flood	2.1	High	Local	PL	2010 Complete – Enacted by BCC on 11-1-2010
Property Protection Actions							
PP-1	Continue to enforce the North Carolina Building Code.	Wind	1.1	Moderate	Local	BI	Ongoing

Action #	Actions	Hazard	Objective(s) Addressed	Relative Priority	Funding Sources	Responsible Party	Target Completion Date
PP-2	Enforce the use of wind-resistant construction techniques used in coastal regions. The requirement that new structures or structures undergoing significant renovations be resistant to wind loads of 110 mph is of particular importance. Continue to acquire destroyed or substantially damaged properties and relocate households. Seek State and Federal funding. (voluntary program)	All	2.2	Moderate	FEMA NCDEM	BOC	On-going
Emergency Services							
ES-1	Maintain and annually update the county Emergency Operations Plan. This plan should contain detailed information on responsible parties and contact positions. This information should be updated as positions and contact information change.	All	1.1 1.3	High	Local	EM	Ongoing
ES-2	Maintain evacuation routes.	All	1.1	Moderate		BOC	Ongoing
ES-3	Warning System Improvements. Several options exist and the county will explore and decide upon the most feasible option to warn county residents. Reverse 911 system instituted during 2010 planning timeframe.	Tornado / High Wind	1.1	Moderate	Local	ES EM	Ongoing
ES-4	Ensure adequate evacuation time in case of major hazard events.	All	1.1 1.3	High	Local	EM ES	Ongoing
ES-5	Promote and encourage the establishment and training of Community Emergency Response Teams (CERT) throughout the county (2 active CERTs established during the 2010 planning timeframe).	All	1.1 2.1	Moderate	Local NCDEM	EM	Ongoing
ES-6	Work to develop continuity of operations plans (COOP) for county/town departments, assisted living facilities, long-term care facilities, day care centers, etc	All	1.1	High	Local	BOC EM	2012 2015
Natural Resource Protection							
NR-1	In order to reduce storm water runoff, the county should minimize construction of additional impervious surfaces within floodplains. This should include limiting construction of impervious surface parking lots in the areas near the rivers.	All	1.1 3.1	Low	Local	BOC	Ongoing
NR-2	Continue to support NC Sedimentation Control Commission efforts to ensure erosion and sedimentation control measures are properly installed	Flood	3.2	High	Local NCDENR	PL NRCS SWCD	Ongoing

Action #	Actions	Hazard	Objective(s) Addressed	Relative Priority	Funding Sources	Responsible Party	Target Completion Date
	and maintained during construction.						
Structural Projects							
S-1	Encourage the installation of generator switches in new construction critical facilities and existing shelters. As projects go through TRC, applicants can be encouraged to pre-wire facilities for a generator. Transfer switches were installed at PCHS (primary shelter) during the 2010 planning timeframe.	All	1.1 2.1	High		PL BOC	Ongoing
Public Information Activities							
PI-1	As with other hazards of concern to Perquimans County, the county should sponsor a hazard mitigation symposium for county residents, including information on preparedness for all significant hazards. The symposium should address the options of elevation, relocation, and flood proofing. This has not yet been pursued; however, the EMC holds annual Hurricane Briefings for first responders and other interested citizens and residents, with speakers on related topics.	Flood	1.2	Moderate	Local	BOC EM	Ongoing
PI-2	Post information about emergency evacuation routes.	All	1.2	High	Local	EM	Ongoing
PI-3	Use written materials to educate contractors about principles for quality redevelopment and safe housing development.	All	1.2	Moderate	Local	BI	Ongoing
PI-4	Provide new home and property buyers with information on wind proofing. The information is probably most effectively dispersed by the Building Inspections Department.	Wind	1.1 1.2	Moderate	Local	PC	Ongoing
PI-5	Create and disperse information about the plan and relevant emergency response actions the public can take.	All	1.2	High	Local	ES EM	Ongoing
PI-6	Continue to provide flood maps for public use with staff continuing to be available for public assistance. Encourage residents to visit the NFIP website, www.floodsmart.gov , and NC Flood plain Mapping Program website, www.ncfloodmaps.com , for more information about the National Flood Insurance Program and floodplain management.	Flood	1.1 1.2	High	Local	BI PL	Ongoing

Action #	Actions	Hazard	Objective(s) Addressed	Relative Priority	Funding Sources	Responsible Party	Target Completion Date
PI-7	Collect FEMA and NCEM educational material on natural hazards and place in public library.	All	1.1 1.2	High	Local	EM	Ongoing
PI-8	Develop and distribute information to the public regarding the requirements for anchoring LP gas tanks.	Flood	1.2	Moderate	Local	PL EM ES	2011 2020

Town of Hertford Status Update

Action #	Actions	Hazard	Objective(s) Addressed	Relative Priority	Funding Sources	Responsible Party*	Target Completion Date
P-1	Update the CAMA Land Use Plan in conjunction with the County's Core Land Use Plan	All	1.1	Moderate	Local	HM	2010 2015
P-2	Consider revising Hertford's Zoning Ordinance and Subdivision Regulations to improve storm water management practices in developments.	All	1.1 3.1	Moderate Low	Local	HM	2010 2020
P-3	Update the Town of Hertford's Zoning Ordinance and Subdivision Regulations.	All	1.1	Low	Local	HM	2010 As needed
P-4	Work in conjunction with NCDOT and other agencies to ensure that storm water facilities are maintained to allow for reasonable flows.	All	1.1 3.1	Moderate	State	NCDOT HM	As Needed
PP-1	In cooperation with Perquimans County, continue to review areas adversely impacted by major storm events and to examine existing policies that can minimize repetitive losses in those areas.	Flood	1.1 3.1	Moderate	Local	PC HM	As Needed
ES-1	Work to develop continuity of operations plans (COOP) for county/town departments, assisted living facilities, long-term care facilities, day care centers, etc	All	1.1	High	Local	HM	2012 2015
S-1	In conjunction with NCDOT, continue to examine the roadways of the town to determine if improvements are needed in areas affected by development.	All	1.1	Moderate	State	NCDOT HM	As Needed

Town of Winfall Status Update

Action #	Actions	Hazard	Objective(s) Addressed	Relative Priority	Funding Sources	Responsible Party	Target Completion Date
Preventive Actions							
P-1	Complete Land Use Plan and ensure that hazard mitigation objectives are addressed.	All	1.1	High	Local	TC PB PC	2010 2015
P-2	Update as needed the wastewater collection system and water system ordinances to meet hazard mitigation objectives.	All	2.1	Moderate	Local	PB TC	2010 2020
P-3	Continue to encourage efforts towards countywide water systems with Perquimans County. Perquimans County assumed Winfall's water system during the 2010 planning timeframe.	All	1.1	Moderate	Local	TC	Completed
P-4	Continue efforts to improve roads and bridges (both public and private) for critical services – fire, rescue, medical, evacuation, etc.	All	3.1	Moderate	State	TC	Ongoing
Property Protection Actions							
PP-1	Seek funding and/or action to clear debris in canals, waterways and drainage ditches to prevent flooding and to improve drainage and water quality.	Flood Storms	1.1	Moderate	NC DOT NC DENR	TC	Ongoing
PP-2	Work with the County Building Inspector to continue to enforce the NC Building Code, in particular, the tie down of buildings and resistance to wind loads.	High Winds	4.1	Moderate	Local	PC TC	Ongoing
Natural Resources							
NR-1	Minimize construction of impervious surfaces adjacent to floodplains or near storm water drainage routes that empty into the river.	All	4.1	Moderate	Local	ZA	Ongoing
Emergency Services							
ES-1	Establish program for evacuation and improvement of Town critical services and facilities – water system and wastewater collection system.	All	1.1 2.1	Moderate	Local	TC FD Staff	Ongoing
ES-2	Continue to partner with Perquimans County in the annual review and update of the Emergency Operations Plan (i.e. evacuation warnings, removal of persons in	All	1.1	High	PC Town	PC TC	Ongoing

Action #	Actions	Hazard	Objective(s) Addressed	Relative Priority	Funding Sources	Responsible Party	Target Completion Date
	flood prone areas).						
ES-3	Continue to partner with Perquimans County to improve warning system, to ensure residents understand the system and that homebound residents are notified. Reverse 911 system instituted during 2010 planning timeframe.	All	1.1 1.2	Moderate	Local	TC PD FD	Ongoing
ES-4	Evaluate flood or access problems for critical facilities; develop protection options. Identify alternate command post sites.	All	1.1	High	Local	PD Staff TC	Ongoing
ES-5	Work to develop continuity of operations plans (COOP) for county/town departments, assisted living facilities, long-term care facilities, day care centers, etc	All	1.1	High	Local	TC Staff	2012 2015
Structural Projects							
S-1	Continue to work on removal of projectile/debris such as junked vehicles, mobile homes and dilapidated homes.	All	1.1	Moderate	Local	TC Staff	Ongoing
S-2	Continue to evaluate those businesses with potential hazardous liquids for adequate protection of the public.	All	1.1 4.2	Moderate	Town Private	TC FD	Ongoing
Public Information Activities							
PI-1	Participate in the annual review and update of the Hazard Mitigation Plan.	All	1.1	High	Local	PB TC	Ongoing
PI-2	Establish both a regular and emergency plan to communicate with residents.	All	1.2	High	PC Town	TC	Ongoing
PI-3	Disseminate information on emergency actions procedures – notification, shelters, evacuation routes, etc.	All	1.2	High	Local	TC Staff	Ongoing
PI-4	Each Town department establish/update plans for their respective operations for emergency operation situations.	All	1.1	High	Local	TC Staff FD	Ongoing