Dewberry

APPENDIX D

COMMUNITY PROJECT PORTFOLIO

JUNE 2025

COMMUNITY PROJECT PORTFOLIO

A critical component of the Resilient Coastal Communities Program is the identification and prioritization of a series of projects that are intended to address community vulnerabilities to coastal hazards. The enclosed list of projects, which includes infrastructure improvements (structural, non-structural, natural or nature-based solutions, or hybrid options), policy and planning efforts, and asset management actions, have been synthesized from previous local and regional planning efforts, input from the Community Action Team, and feedback from the public.

Included in Appendix D is a summary list of the proposed projects, followed by an individual sheet for each project. Each project sheet summarizes the factors that were considered in the project identification and prioritization process, including:

Project Name	Name referred to for the each given project.
Project Description	Description of strategy being proposed and the scope of the work.
Location	The geographic location of the project.
Hazard(s) addressed by project	A summary of the community-specific coastal hazards that impact the project location. This can include flooding, storm surge, wind damage, or other coastal hazards.
Type of Solution	A description of whether the project represents infrastructure improvements, policy and planning effort, or an asset management/mapping program.
Natural and Nature Based Solution Opportunity?	A symbol is used to denote whether the project includes a natural or nature-based solution (NNBS) component.
Project Estimated Cost	A qualitative analysis of the total project cost, including initial engineering and construction as well as future maintenance (as available). Project cost is shown symbolically ranging from $ to $$$$
Potential Implementation Funding Sources	Recommendations on potential sources to construct or otherwise implement the project, including the Resilient Coastal Communities Program and other federal and state funding sources.
Project Estimated Timeline	An estimated timeline to complete the project, including notes on any expected delays in the timeline.
Preliminary Tasks/ Data Required	A description of tasks and information that should be complete before starting the listed project.
Advantages/Disadvantages	An analysis of the benefits and drawbacks of the proposed solution.
Similar Project Examples	Examples of similar projects completed and identification of where information on the projects can be found.
Priority Rating	A qualitative ranking of the project's priority in the context of the entire Project Portfolio. Rankings of **High**, **Medium**, or **Low** are provided for each project.

Proposed Project Summary

Project Priority	Project Title	Description	Location	Anticipated Cost	NNBS Opportunity	Potential Funding Sources	Timeline	Needs Addressed	Pro/Con Assessment	Notes
Data Collection / Planning										
1	**Drainage Inventory and Condition Assessment**	Survey all drainage ditches, outfalls, and related inventory; create location database for use in future assessments and maintenance planning and document existing condition of each feature. Using drainage inventory, groundwater monitoring (if available), and other data, document condition of each drainage feature and develop prioritized list of maintenance and improvements.	Project could be conducted as a single effort across the entire Down East region or divided into multiple sub-regional efforts, performing the assessment for a group of neighboring communities at a time.	Expected to be low to medium cost dependent on size of the assessment (conducted regionally or by sub-region). Similar projects that have included stormwater inventory and assessment have ranged in cost from $50,000 to $200,000 depending on level of survey effort. Anticipated to cost $50 per structure.	No, but will lead to potential NNBS	Federal: EDA - Investment for Public Works and Economic Development Facilities, FEMA – BRIC, and the National Fish and Wildlife Federation- National Coastal Resilience Fund. State sources: Rural Grant Programs, NCDEQ Clean Water State Revolving Fund, NCDEQ Asset and Inventory Assessment Grants	Near-term, within first year. Data needed for implementation of other projects.	Flooding (all types), storm surge.	The drainage inventory and assessment will provide insight on the prioritized infrastructure need and will help understand the scale of improvements that are needed. Infrastructure projects cannot begin before the inventory and assessment is complete.	Highest priority of CAT. As roadway drainage infrastructure is maintained by NCDOT, the inventory and condition assessment would need to be conducted in close coordination with NCDOT, utilizing agency data where appropriate. The identification and prioritization of infrastructure improvements (those that would involve work within state-owned right-of-way) would also need to be developed in conjunction with NCDOT.

2	**Groundwater Well Installation and Monitoring**	Install groundwater monitoring wells to determine groundwater table and changes resulting from rainfall events.	Ground water well installation and monitoring would be recommended for all communities in the Down East region. Potential locations provided by the community can be found below; North River- Recommend locations along and east of Merrimon Road between Laurel Road and US 70 approach to the North River Bridge Sea Level - Recommend locations within the Shell Hill Road/Nelson Neck Road "loop" and along US 70.	Expected to be low cost. Gauges are expected to be between $500 and $1500 (each) in cost.	No, but will lead to a better understanding of the current conditions and what strategies are needed which may include NBBS.	Potential funding sources: Partnerships with non-governmental organizations or university studies may provide opportunities to fund the installation and short-term monitoring of groundwater wells. State sources may include several NCDEQ programs- Drinking Water State Revolving Fund, Clean Water State Revolving Fund, and Asset Inventory and Assessment Grant Program.	Near-term, within first year. Data needed for implementation of other projects.	Purpose is to understand changes in groundwater table particularly after heavy rainfall events.	Wells will provide comprehensive dataset on groundwater levels and any changes following high rain events. This data, in conjunction with drainage survey and condition assessment, will allow for prioritization and design of specific drainage improvements. Depending on the type of wells installed, onsite data collection and maintenance may be required. Will need to plan for wells that may be damaged or otherwise need to be replaced during the monitoring timeframe.	High priority of CAT.
6	**Septic System Alternatives Assessment**	Develop alternative recommendations for the replacement/upgrade to existing residential septic tanks threatened by flooding or other hazards. Identify potential funding sources for private property owners to complete upgrades. The program would encompass an outreach program on septic system alternatives and include assessments for interested parties. The final outcome of this project would be increased awareness of alternatives to traditional septic tanks, and support for property owners with septic tanks throughout Down East.	Community-wide	Expected to be low to medium cost. Cost of outreach and feasibility study associated with septic system alternatives is expected to be between $100,000 and $150,000 depending upon the level of effort.	No	State: NCDEQ Section 319 Grant, Federal: EPA Clean Water State Revolving Fund, HUB Community Block Grants; EDA; Rural Home Loan Program, Single-Family Repair Loans and Grant Program, Rural Decentralized Water Systems Grant Program	Near-term	Flooding (all types)	Developing alternative recommendations and identifying resources to help fund them is intended to alleviate the impacts of flooding hazards, and potentially the costs associated with septic tank replacements, on property owners and help ensure that property owners can stay in the region.	

Infrastructure										
3	**Ditch Clearing and Maintenance**	Clear debris from, and potentially widen/deepen, ditches in select locations to facilitate roadway drainage.	Prioritized locations to be determined based on Drainage Inventory/Assessment (Project #1). Potential starting locations include: North River: - ditch east of East Carteret High School driveway - ditch east of Isiah Murray Drive - ditch east of Merrimon Road, south of Armania Lane Sea Level: - ditch east of Nelson Neck Road - ditches south of US 70, both west of Nelson Neck Road and east of Cedar Creek Road	Cost estimate between $100,000 and $250,000 depending on size and scope of project.	Potential, if performed in conjunction with NNBS at the sites.	Federal: EDA-Investment for Public Works, National Fish and Wildlife Federation - National Coastal Resilience Fund, and Economic Development Facilities, FEMA Flood Mitigation Assistance Program State sources: Rural Grant Programs, EPA-Clean Water State Revolving Funds	Near-term; ongoing maintenance anticipated	Pluvial flooding events, especially high-intensity, localized flooding.	This project was the most desired by the public and will be a way to quickly show that work is being done to address flooding and coastal hazards. This project will help with the immediate flooding in the area, especially if completed in combination with other project options (tide gates, pump systems, NNBS to enhance surrounding marsh system, etc.). This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.	High priority based on public feedback. Would be an ongoing project. NNBS aspect would benefit with public education on NNBS and offshore barriers.
4	**Culvert Sizing**	Resize/replace culverts to facilitate water flow underneath roadway infrastructure.	Utilize input from drainage inventory and assessment to determine priority culvert locations. RCCP analysis indicated potential need on Merrimon Road to facilitate west to east water drainage. Other locations in Davis, Stacy, and Sea Level may also warrant consideration.	High cost expected, dependent on sizing of culverts and extent of roadway repair required. Culvert resizing or constructions can range in cost between $500,000 and $1.5 mil.	No	Culvert projects located within state (NCDOT) right-of-way will likely be funded through NCDOT. Additional funding sources could include: Federal: FEMA – BRIC State: Rural Grant Programs, NCDEQ Clean Water State Revolving Fund, NCDEQ Asset and Inventory Assessment Grants	Mid-term (3-7 years out)	Flooding (all types), storm surge.	Project will help alleviate flooding on major roads and help ensure access to critical infrastructure in the region. The proposed locations on Merrimon Road in North River and in Davis are a high priority for the community, so implementation of the project will build trust with these communities. Culvert resizing can be time consuming and expensive projects depending on the scope of the project. These efforts will help alleviate the impacts due to coastal hazards, but larger culverts will be needed to address the increasing frequency and intensity of flooding events that the region is expected to experience, increasing the up-front construction costs of the projects.	Projects located within state (NCDOT) right-of-way will require coordination with NCDOT.

11	**Tide gates**	Install tide gates at ditches to prevent backflow onto roadway infrastructure.	Utilize input from drainage inventory and assessment and the groundwater table investigation to determine priority locations. RCCP analysis indicated potential need at the ditch east of East Carteret High School drive to facilitate continued access to shelter and to US 70 bridge approach.	Expected to be medium to high cost, dependent on size of ditch/waterway selected for tide gates.	Yes (potentially), if there are NNBS involved in the ditches or area around tide gates.	Federal: FEMA Flood Mitigation Assistance Grant Program State: Currently no programs are looking at funding something like this, but NCDEQ has made it known they would like to reestablish the LASII program	Near-term, following completion of groundwater monitoring	Tidal flooding	Tide gates will help to prevent flooding of key infrastructure, particularly critical infrastructure like roadways. Installation of tide gates will help prevent the flooding that has become a common occurrence in Down East. This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.	Maintenance of these tide gates, including the continued cost and staff commitment, is a concern for the county.
14	**Detention Pond Construction**	Construct detention pond to capture excess runoff during heavy rainfall events.	Utilize input from drainage inventory and assessment and the groundwater table investigation to determine priority locations. RCCP analysis identified potential location at East Carteret High School (west of baseball field).	Low cost expected. Typical project costs between $25,000 and $100,000 per site.	Yes (potential)	State: NCDEQ'S Water Resource Development Grant (WRDG)	Near-term, following completion of groundwater monitoring	Flooding (all types)	Project would help protect critical infrastructure in the area. The implementation of NNBS would help the project qualify for more grant opportunities moving forward and should be considered if possible.	Project would benefit from NNBS components being incorporated.
15	**Pump System**	Install pump system to help water flow at ditches during heavy rainfall events.	Utilize input from drainage inventory and assessment and the groundwater table investigation to determine priority locations. RCCP analysis identified potential location in at ditch east of East Carteret High School drive to facilitate continued access to shelter and to US 70 bridge approach, as well as at the southern intersection of Shell Hill Road and Nelson Neck Road in Sea Level.	Expected to be medium cost, dependent on number of locations and sizing. Cost can vary from $100,000 to $300,000 per site.	No	State: Water and Waste Disposal Loan and Grant Program Federal: FEMA Flood Mitigation Assistance Grant Program	Mid-term, following completion of groundwater monitoring	Flooding (all types).	The installation of a pump system will help alleviate the worst flooding that occurs during extreme weather events and other events that cause excess flooding. This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with this locality and its risks.	County has concerns regarding he maintenance of a pump station. Preference would be for maintenance duties to fall to an entity other than the County.

8	**Roadway Protection Measures:** **Complete a feasibility analysis, followed by the design and construction of an infrastructure solution for the protection of the section of NC 12 leading to and within Cedar Island. Potential protection measures to be evaluated and constructed could include:**									
	Offshore Barrier	Construct offshore breakwater to reduce wave energy within Cedar Island Bay that may impact NC 12 roadway.	Further assessments gathered from additional community outreach and drainage inventory and assessment should be utilize. Potential locations that have received interest from the community are below; Cedar Island - Potential locations include: - east of NC 12 near Goodwin Ridge Road intersection - east of NC 12 between intersections with Landing Road and Boogie Acres Road	Expected to be high cost, dependent on material used, location and scope of project. Similar projects, such as construction of living shoreline, typically range between $150,000 and $250,000.	Yes (potential), Dependent on type of material used for offshore barrier.	Federal: NOAA - Coastal & Estuarine Land Conservation Program, NOAA - National Coastal Resilience Fund, and NFWF – National Coastal Resilience Fund & 5 Star and Urban Water Restoration. State: EPA - Clean Water State Revolving Fund, Z. Smith Reynolds Foundation, and NCDWR Water Resources Development Project Grants.	Mid-term; 5-10 years	Storm surge	The construction of an offshore barrier, particularly a NNBS offshore barrier would help address multiple hazards while helping mitigate the issue of coastal erosion and building up the region's defenses against coastal hazards such as hurricanes and other forms of extreme weather. The construction of offshore barriers and nature-based solutions did not rank very high with the public. Also, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.	
	Living Shoreline	Construct living shoreline to enhance the existing marsh system east of the NC 12 roadway and provide protection for public and private infrastructure leading to and within the Cedar Island community.	Further assessments gathered from additional community outreach and drainage inventory and assessment should be utilize. Potential locations that have received interest from the community are below; Cedar Island - NC 12 north of Cedar Island National Wildlife Refuge	Expected to have a high cost. Project could range from $250,000 to over $2 million. The Town of Duck recently completed a similar project for $1.85 million. This project encompasses an approximate one quarter-mile area.	Yes	Federal: NOAA - Coastal & Estuarine Land Conservation Program, NOAA - National Coastal Resilience Fund, and NFWF – National Coastal Resilience Fund & 5 Star and Urban Water Restoration. State: EPA - Clean Water State Revolving Fund, Z. Smith Reynolds Foundation, and NCDWR Water Resources Development Project Grants.	Mid-term; 5-10 years	Storm surge	The construction of a living shorelines along the coastline somewhere in the Down East region could go a long way in helping to address coastal hazards effecting the region. A living shoreline would incorporate NBBS, which would make the project more appealing for grant applicant in the future. The strategy also helps mitigate the issue of coastal erosion and builds up the region's defenses against coastal hazards like hurricanes and other forms of extreme weather. The construction of living shorelines has a high cost associated with the strategy. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.	

	Roadway Elevation	Elevate NC 12 roadway within Cedar Island, using combination of roadway fill and bridging over existing ditches as appropriate. Proposed elevation approximately 18", pending further engineering review and current 100-year storm analysis.	Further assessments gathered from additional community outreach and drainage inventory and assessment should be utilize. Potential locations that have received interest from the community/ identified in the risk analysis are below; Cedar Island - NC 12 north of Cedar Island National Wildlife Refuge	Expected to be medium to high cost, dependent on height and scope of solution. Estimated costs vary from $200,000 to over $1.5 million.	Yes (Potentially), if there are NNBS in structure that leads to the raised roads	Facility is state-maintained roadway; funding would likely be through NCDOT STIP funds, with potential contributions from federal (USDOT) grant sources. Federal Grant Sources: FEMA – BRIC & Flood Mitigation Assistance Program and EDA - Investment for Public Works and Economic Development Facilities State Grant Sources: Rural Grant Programs and NCDEQ Clean Water State Revolving Fund	Mid-term; 5-10 years	Flooding (all types)	Project would protect critical infrastructure and the only transportation route in and out of Cedar Island. Roadway projects are expensive and time consuming. This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.	For projects on state roads will require coordination with NCDOT.
Emergency Preparedness										
7	**Danger Tree Clearing Program**	Identify and remove trees that could impact emergency facilities, community resources, or other infrastructure during high wind or other storm events. Identify potential funding sources for private property owners to remove dead trees that could impact infrastructure.	Community-wide	Expected to be low to medium cost, dependent on the number of trees identified. Similar projects in other parts of the state cost $600,000 to $1,000,000. These programs though also contain tree planting and pruning so cost may be significantly lower for just dangerous tree removal.	No	Federal: FEMA BRIC program State: NCFS Urban and Community Forestry Financial Assistance Program	Near-term	All	The establishment of a danger tree clearing program will help mitigate the extent of damage that coastal hazards, particularly hurricanes and other tropical storms, have on the Down East community. The project is a proactive measure to minimize future infrastructure and private property damage. This strategy will help alleviate potential hazard impacts, particularly from wind events. However, additional strategies will be needed to address other types of hazards, such as flooding and storm surge.	Coordination with power utilities to remove trees that threaten electric lines; community fire departments will remove trees within roadways pre- and post-storm. Identify gaps on private property that could impact public facilities.

9	**Emergency Facilities Condition Assessment**	Complete an assessment of all Fire Departments and other emergency facilities within the Down East region to determine if further protection or mitigation measures (building elevation, flood gates, facility relocation, etc.) are needed, and identify specific mitigation strategies for each facility. Following completion of the assessment, fund and implement the identified measures.	Emergency facilities across Down East region. It would be beneficial to utilize input from drainage inventory and assessment and the groundwater table investigation to determine priority locations.	Assessment of the emergency facilities is expected to be a low cost. Estimates are between $50,000 and $100,000. Cost of implementation of strategies identified in assessment vary but are expected to be medium cost, dependent on scope of protection measures. The typical cost to elevate a small structure using piers or pilings in the case of flooding ranges from $20,000 to $80,000. Installation of an operation gate to prevent flooding ranges between $15,000 and $70,000. These would be the cost per project.	No; At least with the current strategies proposed	Federal: FEMA BRIC Program State: Volunteer Fire Department Fund, OSFM FEMA 2022 Supplemental Grant	Mid-term; 5-10 years	Flooding (all types); storm surge	Emergency facilities condition assessment will help identify what critical infrastructure is in the most need of additional resources and strategies for protection. Doing this will ensure that the critical infrastructure is protected, and the equipment housed at the emergency facilities are not damaged due to flooding or storm surge. Improvements to the emergency facilities will ensure that residents of Down East have access to these vital services during and after extreme weather events. This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.	The County had previously applied for a BRIC grant to construct new station at Sea Level at a location with a high enough elevation for vehicles but was not selected.
10	**High Water Rescue Vehicle**	Purchase high water rescue vehicle to be based at Sea Level or adjacent Fire and Rescue Department/ community staging areas in advance of flood events.	Emergency facilities across Down East region. It would be beneficial to utilize input from drainage inventory and assessment and the groundwater table investigation to determine priority locations.	Expected to be medium cost, dependent on vehicle selected. Similar projects have cost between $100,000 and $300,000 per vehicle.	No	Federal: FEMA BRIC program State: Volunteer Fire Department Fund, OSFM FEMA 2022 Supplemental Gran		Flooding (all types); storm surge	Project would ensure that during extreme weather events and times of coastal hazards that emergency personnel are able to come and rescue residents. Project is reactive to the coastal hazards and does not work to mitigate the issues involved with the coastal hazards.	The County currently has one that is staged wherever it is needed but is open to having more available for the Down East community.

13	**Emergency Storage Facilities**	Construct storm-resilient structure to be used for emergency supply storage; include raised area to allow for resident parking.	Community-wide	Expected to be medium to high cost, dependent on size and material used during construction. Costs are expected to be between $100,000 and $500,000 but larger facilities have price ranges in the millions of dollars.	No	Shelter facilities would likely qualify for federal hazard mitigation funding. FEMA has multiple funding opportunities, including Shelter and Services Program and Building Resilient Infrastructure Communities (BRIC)	Mid-term; 5-10 years	All	The construction of a storm resilient facility/facilities will ensure that emergency supplies are available for residents after extreme weather events. The project makes the locality more prepared for extreme weather and more adept and ready for emergency response. With this project being rated as a low priority and no funds currently identified, it may be some time before this project comes to fruition. The creation of adequate emergency storage facilities does not influence the locality's ability to address hazards associated with extreme weather like flooding. To make the strategy as effective as possible, it will need to be paired with infrastructure projects.	An emergency shelter as far east as possible should be considered to provide for communities most threatened by flooding.

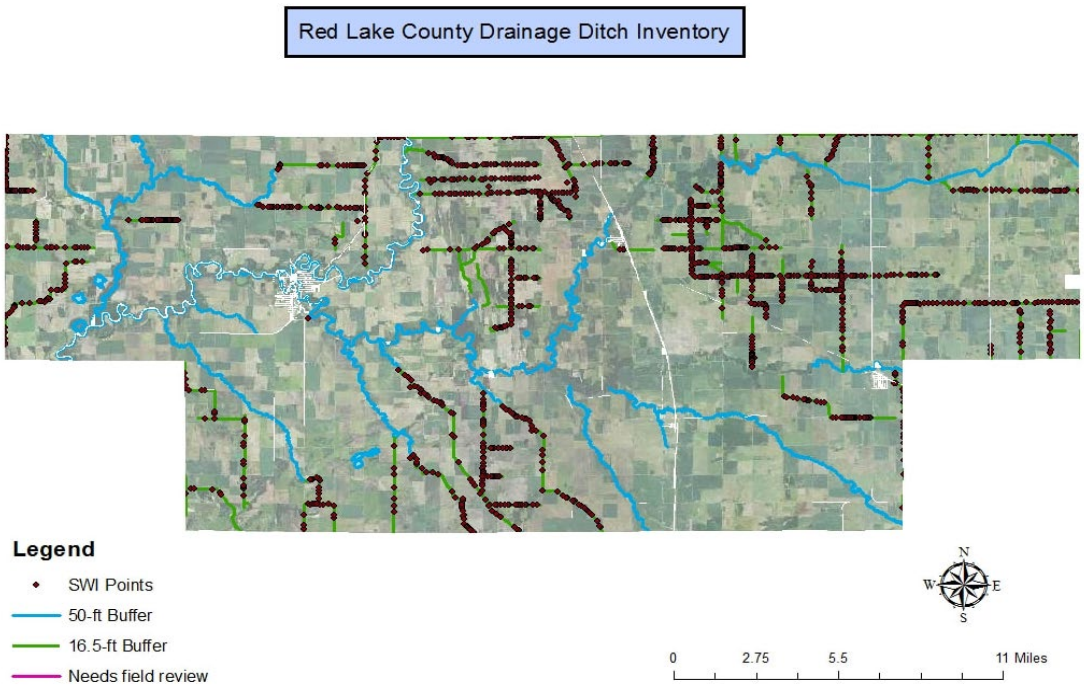
Community Education & Outreach										
5	**Community Liaison**	Hire a paid staff member who would be a trusted local resident who could serve as a conduit between government resilient programming, such as the RCCP program, and the community. The community liaison would help ensure that the unincorporated towns located Down East are represented in resilience efforts. The liaison role could be filled by a local resident, regional non-profit organization, or other entity with established community trust.	Community-wide	Expected to be low cost. Costs are expected to be between $60,000 and $100,000 annually depending upon the level of effort and number of individuals employed.	No	Potential funding sources: Partnerships with non-governmental organizations may provide opportunities to fund the targeted education effort. The NC Office of Environmental Education website provides information on potential education grants.	Near-term	All	The hiring of a community liaison would help build trust with the communities that are being served and help ensure they are knowledgeable on the projects. The project would also ensure better communication from the communities. The project is also a low-cost solution. The community liaison would also be able to help with the education of NNBS and help with buy in from the community.	Idea was submitted by Lighthouse Environment partners as way to continue to keep communities involved and engaged.

	Community Outreach Campaigns: **Conduct public outreach efforts on any of the following topics (individually or in combination) to promote community conversations on these issues and provide greater awareness of available resources. These campaigns could be led by local government, the community liaison, regional non-profit organizations, or members of the community.**									
12	**Emergency preparedness public outreach**	Develop emergency preparedness materials to distribute pre-storm, such as door hangers, for each community to know understand evacuation procedures and shelter options, emergency preparedness awareness, and emergency contact information. Redistribute annually in conjunction with community outreach sessions.	Community-wide	Expected to be low cost. Cost are expected to be between $10,000 and $50,000 annually depending upon the level of effort.	No	Partnerships with non-governmental organizations may provide opportunities to fund the targeted education effort. The NC Office of Environmental Education website provides information on potential education grants.	Near-term/ Ongoing	All	Performing emergency preparedness public outreach will help to create a more informed community and help with buy-in for other resilience projects. The project is also one of the lowest costs of any of the resilience projects listed in the report. Public outreach has no effect on the infrastructure and natural resources found in the community and will need to be paired with infrastructure projects to bring physical change to the community.	NWS conducts preparedness sessions throughout the region. Partner with NWS to continue community conversations and develop pre- and post-storm materials.

12	**Natural and Nature-Based Solutions (NNBS) Awareness**	Identify and provide resources to residents on the potential scope and uses of NNBS projects, including the protection of public infrastructure and private property. Utilize resources from federal and state agencies along with regional non-profit organizations to aid this public outreach.	Community-wide	Expected to be low cost. Cost are expected to be between $10,000 and $50,000 annually depending upon the level of effort.	No	Partnerships with non-governmental organizations may provide opportunities to fund the targeted education effort. The NC Office of Environmental Education website provides information on potential education grants.	Near-term/ Ongoing	All	Performing natural and nature-based solutions public outreach will help to create a more informed community and help with buy-in for other resilience projects. The project is also one of the lowest costs of any of the resilience projects listed in the report. Public outreach has no effect on the infrastructure and natural resources found in the community and will need to be paired with infrastructure projects to bring physical change to the community.	
	Transportation / Infrastructure Planning - Public Outreach	Connect Down East residents to agencies and resources pertaining to the planning and construction process for transportation facilities and other public infrastructure, to help residents understand the process and their role in the development of infrastructure projects.	Community-wide	Expected to be low cost. Cost are expected to be between $10,000 and $50,000 annually depending upon the level of effort.	No	Partnerships with non-governmental organizations may provide opportunities to fund the targeted education effort. The NC Office of Environmental Education website provides information on potential education grants.	Near-term/ Ongoing	All	Performing transportation/infrastructure planning public outreach will help to create a more informed community and help with buy-in for other resilience projects. The project is also one of the lowest costs of any of the resilience projects listed in the report. Public outreach has no effect on the infrastructure and natural resources found in the community and will need to be paired with infrastructure projects to bring physical change to the community.	

Project Name	**Drainage Inventory and Assessment**
Project Description	Survey all drainage ditches, outfalls, and related inventory; create location database for use in future assessments and maintenance planning and document existing condition of each feature. Using drainage inventory, groundwater monitoring, and other data, document condition of each drainage feature and develop prioritized list of maintenance and improvements.
Location	Assessment can be conducted across the entire Down East region or divided into multiple sub-regional efforts, performing the assessment for a group of neighboring communities at a time.
Hazard(s) addressed by project	Flooding (all types), storm surge
Type of Solution	Data collection
Natural and Nature Based Solution Opportunity?	No; However, information gathered from this assessment could identify opportunities for NNBS solutions.
Project Estimated Cost	Expected to be low to medium cost dependent on size of the assessment (conducted regionally or by sub-region). Similar projects that have included stormwater inventory and assessment have ranged in cost from $50,000 to $200,000 depending on level of survey effort. Anticipated to cost $50 per structure. **Cost Level: $$**
Potential Implementation Funding Sources	Federal source: EDA - Investment for Public Works and Economic Development Facilities, FEMA – BRIC, and the National Fish and Wildlife Federation- National Coastal Resilience Fund. State sources: Rural Grant Programs, NCDEQ Clean Water State Revolving Fund, NCDEQ Asset and Inventory Assessment Grants.
Project Estimated Timeline	Strategy to be implemented in the near term; may take between six months to a year to complete. This project was

	identified as the CAT's top priority, as it will aid in the identification of future infrastructure projects.
Preliminary Tasks/ Data Required	RVA, CAT, and community provide initial feedback on areas of concern.
Advantages/Disadvantages	A Drainage Inventory and Assessment will provide needed information on the locations with the biggest need and will help understand which projects to prioritize moving forward. Infrastructure project cannot begin before the inventory and assessment is complete.
Similar Project Examples	Stormwater Mapping; Swansboro Resilience Strategy as part of RCCP.
Priority Rating	**High**- Project was identified as top priority by the Down East CAT.



Example Drainage Inventory

Source: Drainage Inventory of Red Lake County (https://redlakecountyswcd.org/drainage-ditch-inventory.html)

Project Name	**Groundwater Well Installation and Monitoring**
Project Description	Install and monitor groundwater wells in each community to identify groundwater table elevation and changes experienced after storm events.
Location	Recommendation is for well installation in all Down East communities in repetitive flooding spots. Potential locations based off of community feedback can be found below: North River- Recommend locations along and east of Merrimon Road between Laurel Road and U.S. 70 approach to the North River Bridge. Sea Level - Recommend locations within the Shell Hill Road/Nelson Neck Road "loop" and along U.S. 70.
Hazard(s) addressed by project	Flooding (All Types)
Type of Solution	Data Collection
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Expected to be low cost. Gauges are expected to be between $500 and $1500 each. Total cost depends on the number of wells installed. **Cost Level: $**
Potential Implementation Funding Sources	Partnerships with non-governmental organizations or university studies may provide opportunities to fund the installation and short-term monitoring of groundwater wells. State sources: include several NCDEQ programs- Drinking Water State Revolving Fund, Clean Water State Revolving Fund, and Asset Inventory and Assessment Grant Program.
Project Estimated Timeline	Wells should be installed and monitored for at least 6 months, preferably coinciding with at least one hurricane season.
Preliminary Tasks/ Data Required	Finalize well locations based on community input. RCCP Risk and Vulnerability Assessment (RVA) provides initial insight and recommendations.

Advantages/Disadvantages	Wells will provide comprehensive dataset on groundwater levels and any changes following high rain events. This data, in conjunction with drainage survey and condition assessment, will allow for prioritization and design of specific drainage improvements. Depending on the type of wells installed, onsite data collection and maintenance may be required. Will need to plan for wells that may be damaged or otherwise need to be replaced during the monitoring timeframe.
Similar Project Examples	Brunswick County & USGS cooperative program to monitor aquifer levels and chloride concentration; https://www.usgs.gov/centers/sawsc/science/brunswick-county-nc-groundwater-level-monitoring#overview
Priority Rating	**High**

Groundwater Well Installation

Source: USGS groundwater well webpage (https://www.usgs.gov/media/images/groundwater-monitoring-well)

Project Name	**Septic System Alternatives Assessment**
Project Description	Develop alternative recommendations for the replacement/upgrade to existing residential septic tanks threatened by flooding or other hazards. Identify potential funding sources for private property owners to complete upgrades.
Location	Assessment should be conducted across the Down East region.
Hazard(s) addressed by project	Flooding (all types)
Type of Solution	Data collection
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Expected to be low to medium cost. Cost of outreach associated with septic system alternatives is expected to be between $100,000 and $150,000 annually depending upon the level of effort. **Cost Level: $$**
Potential Implementation Funding Sources	State sources: NCDEQ Section 319 Grant. Federal: EPA Clean Water State Revolving Fund, HUB Community Block Grants; EDA; Rural Home Loan Program, Single-Family Repair Loans and Grant Program, Rural Decentralized Water Systems Grant Program.
Project Estimated Timeline	The project is expected to be started in the near term.
Preliminary Tasks/ Data Required	Community input will be needed to know where most at risk resident are as well as the RVA to understand social vulnerability of population.
Advantages/Disadvantages	Developing alternative septic system recommendations and guiding residents to resources to help residents acquire them will help alleviate stress on property owners and help ensure that property owners can continue to stay in the region.

	The project does not look to address the mitigation of flooding and other risks associated with increased extreme weather events.
Similar Project Examples	Alternative Septic Project in Middle Peninsula, VA; https://www.whro.org/environment/2024-05-08/in-rural-virginia-sea-level-rise-swamps-septic-systems-a-local-partnership-is-testing-a-solution# Partnership and grant for septic system in Cape Cod, MA; https://www.epa.gov/water-research/innovativealternative-septic-systems#:~:text=Enhanced%20IA%20septic%20systems%20can,are%20considered%20for%20broader%20use.
Priority Rating	**Medium**

Sources: WHRO Public Media https://www.whro.org/environment/2024-05-08/in-rural-virginia-sea-level-rise-swamps-septic-systems-a-local-partnership-is-testing-a-solution

Project Name	**Ditch Clearing/Maintenance**
Project Description	Clear debris from, and potentially widen/deepen, ditches and/or outfalls in select locations to facilitate roadway drainage.
Location	Utilize input from drainage inventory and assessment to determine priority locations; focus initial clearing/maintenance work in repetitive flooding spots. Potential Locations from Community Feedback: North River: - ditch east of East Carteret High School driveway - ditch east of Isiah Murray Drive - ditch east of Merrimon Road, south of Armania Lane Sea Level: - ditch east of Nelson Neck Road - ditches south of US 70, both west of Nelson Neck Road and east of Cedar Creek Road
Hazard(s) addressed by project	Pluvial flooding events; especially high-intensity, localized flooding
Type of Solution	Facility construction/maintenance
Natural and Nature Based Solution Opportunity?	**Yes**; if NNBS elements can be implemented in area around or within the ditches.
Project Estimated Cost	Cost estimate between $100,000 and $250,000 depending on size and scope of project. Overall, relatively low-cost solution to issue. **Cost Level: $$**
Potential Implementation Funding Sources	Federal source: EDA- Investment for Public Works, National Fish Wildlife Federation: National Coastal Resilience Fund, and Economic Development Facilities, FEMA Flood Mitigation Assistance Program. State sources: Rural Grant Programs, EPA- Clean Water State Revolving Funds.

Project Estimated Timeline	As the project was the highest priority for community, project should be one of the first tasks taken. Project could begin in the short-term and is intended to be ongoing.
Preliminary Tasks/ Data Required	Drainage inventory and assessment will inform a prioritized approach and schedule.
Advantages/Disadvantages	This project was the most desired by the public and will be a way to quickly show that work is being done to address flooding and coastal hazards in the region. This project will help with the immediate flooding that is occurring in the area. This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.
Similar Project Examples	City of High Point Drainage Maintenance program; https://www.highpointnc.gov/681/Drainage-Maintenance City of Raleigh Ditch Improvement project; https://raleighnc.gov/projects/north-ridge-drainage-improvements
Priority Rating	**High**. Project was identified as the top priority in public outreach events.

Ditch off US 70 in Davis North Carolina

Sources: Google Maps- Davis, NC

Project Name	**Culvert Sizing**
Project Description	Identify and construct culverts that need to be resized.
Location	Utilize input from drainage inventory and assessment to determine priority culvert locations. RCCP analysis and community feedback have identified the potential locations in North River (Merrimon Road), Davis, Stacy and Sea Level.
Hazard(s) addressed by project	Flooding (all types), storm surge
Type of Solution	Facility construction/maintenance
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	High cost expected, dependent on sizing of culverts and extent of roadway repair required. Culvert resizing or constructions can range in cost between $500,000 and $1.5 million. **Cost Level: $$$**
Potential Implementation Funding Sources	Culvert projects located within state (NCDOT) right-of-way will likely be funded through NCDOT. Additional funding sources could include: Federal: FEMA – BRIC State: Rural Grant Programs, NCDEQ Clean Water State Revolving Fund, and NCDEQ Asset and Inventory Assessment Grants.
Project Estimated Timeline	Due to required coordination with NCDOT, timeline for strategy implementation would likely be mid-term and take 3-7 years. Project improvements are expected to require an estimated 1-3 years following receipt of project funding. Project was the second highest priority from the public feedback so will help build public trust if the project moves forward as quickly as possible given strategies limitations.
Preliminary Tasks/ Data Required	Drainage inventory and assessment will inform a prioritized approach and schedule.

Advantages/Disadvantages	Project will help alleviate flooding on major roads and help ensure access to critical infrastructure in the region. Project is also a high priority for the community, so implementation of the project will build trust within the community in regards to the RCCP program. Culvert resizing can be time consuming and expensive projects depending on the scope of the project. These efforts will help alleviate the impacts due to coastal hazards, but larger culverts will be needed to address the increasing frequency and intensity of flooding events that the region is expected to experience, increasing the up-front construction costs of the projects.
Similar Project Examples	Swansboro Resilience Strategy Document RCCP 22; Resizing NC 24 Culvert
Priority Rating	**High**

Culvert Construction

Source: Adobe Stock Photo

Project Name	**Tide Gates**
Project Description	Install tide gates at ditches to prevent backflow onto roadway infrastructure.
Location	Utilize input from drainage inventory and assessment to determine priority locations. Locations identified in RCCP analysis include the ditch east of East Carteret High School drive which would facilitate continued access to shelter (Goal would be to facilitate continued access to shelter and US 70 bridge approach).
Hazard(s) addressed by project	Tidal flooding
Type of Solution	Facility construction/maintenance
Natural and Nature Based Solution Opportunity?	No.
Project Estimated Cost	Expected to be medium to high cost, dependent on size of ditch/waterway selected for tide gates. **Cost Level: $$$**
Potential Implementation Funding Sources	Federal source: FEMA Flood Mitigation Assistance Grant Program State sources: LASII Program (currently not funded but NCDEQ may bring back in the future).
Project Estimated Timeline	The project would be performed in the near-term, following the completion of the groundwater monitoring. The timeline of the construction can vary depending on the size and scope of the project. Construction of project can take from 6 months to 4 years depending on size of ditches or streams where tide gates are installed.
Preliminary Tasks/ Data Required	Drainage inventory and assessment will inform a prioritized approach and schedule.
Advantages/Disadvantages	Tide gates will help to prevent flooding of key infrastructure, particularly critical infrastructure like roadways. Installation of tide gates will help prevent the flooding that has become a common occurrence in Down East. This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need

	to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.
Similar Project Examples	Wynne's Gut Pump and Tidal Gate System; https://www.fema.gov/grants/mitigation/learn/flood-mitigation-assistance/after-you-apply/fy-2023-status#summary
Priority Rating	**Low**

Revere, MA Tidal Gate

Source: EPA (https://www.epa.gov/system/files/documents/2024-02/final_tidal-res-protocol_february-2024.pdf)

Project Name	**Detention Pond Construction**
Project Description	Construct detention pond to capture excess runoff during heavy rainfall events.
Location	Utilize input from drainage inventory and assessment to determine potential locations. RCCP analysis and community feedback indicated East Carteret High School (west of ball field) as a potential location.
Hazard(s) addressed by project	Flooding (all types)
Type of Solution	Facility construction/maintenance
Natural and Nature Based Solution Opportunity? 	**Yes**, if combined with plantings or other nature-based design elements.
Project Estimated Cost	Low cost expected. Typical project costs between $25,000 and $100,000 per site. **Cost Level: $**
Potential Implementation Funding Sources	State funding: NCDEQ'S Water Resource Development Grant (WRDG), NFWF- 5 Star and Urban Water Restoration Grant Program
Project Estimated Timeline	Project is expected to be done in the near-term, following the completion of groundwater monitoring. Project is not considered an urgent need by the public, but the construction would protect critical infrastructure (Regional High School) in the region. Project is expected to take between 1 and 2 years.
Preliminary Tasks/ Data Required	Drainage inventory and assessment will inform a prioritized approach and schedule.
Advantages/Disadvantages	Project would help protect critical infrastructure in the area. The implementation of NNBS would help projects utilizing this strategy qualify for more grant funding. Project would benefit with public outreach effort regarding NBBS. However, the project did rank low during public outreach events.
Similar Project Examples	Durant Nature Preserve Stream & Stormwater Improvements (City of Raleigh); https://raleighnc.gov/projects/durant-nature-preserve-stream-stormwater-improvements

Priority Rating	Low

Detention Pond

Source: CDENR Stormwater Design Manual (https://www.deq.nc.gov/energy-mineral-and-land-resources/stormwater/bmp-manual/c-12-dry-pond-11-20-2020/download)

Project Name	**Pump System**
Project Description	Install pump system to help water flow at ditches during heavy rainfall events.
Location	Utilize input from drainage inventory and assessment to determine priority locations. RCCP analysis identified several potential locations, including: - Ditch east of East Carteret High School drive to facilitate continued access to shelter (Goal would be to facilitate continued access to shelter and US 70 bridge approach). - Southern intersection of Shell Hill Road and Nelson Neck Road in Sea Level.
Hazard(s) addressed by project	Flooding (all types)
Type of Solution	Facility construction/maintenance
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Expected to be medium cost, dependent on number of locations and sizing. Cost can vary from $100,000 to $300,000 per site. **Cost Level: $$$**
Potential Implementation Funding Sources	State sources: Water and Waste Disposal Loan and Grant Program. Federal sources: FEMA Flood Mitigation Assistance Grant Program.
Project Estimated Timeline	Project is considered to have a mid-term timeline and would follow the completion of the groundwater monitoring. Project/strategy is considered a low priority.
Preliminary Tasks/ Data Required	Drainage inventory and assessment will inform a prioritized approach and schedule.
Advantages/Disadvantages	The installation of a pump system will help alleviate the worst flooding that occurs during extreme weather events and other events that cause excess flooding.

	This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with this locality and its risks.
Similar Project Examples	Cape Canaveral, Florida Street Pump Station Activated; https://www.cityofcapecanaveral.org/news_detail_T9_R339.php
Priority Rating	**Low**

Cape Canaveral Center Street Pump Station

Source: City of Cape Canaveral, Fl Twitter/X – (https://x.com/CapeCanaveralFL/status/1826288676957040832/photo/2)

Project Name	Roadway Protection Measures
Project Description	Additional roadway protections are needed for the section of the NC 12 roadway leading to and within Cedar Island. A complete feasibility analysis is necessary, followed by the design and construction of an infrastructure solution. The three roadway protection measures be evaluated are below: **Offshore Barrier:** Construct offshore breakwater to reduce wave energy within Cedar Island Bay that may impact NC 12 roadway **Living Shoreline:** Construct living shoreline to enhance the existing marsh system east of the NC 12 roadway and provide protection for public and private infrastructure leading to and within the Cedar Island community. **Roadway Elevation:** Elevate NC 12 roadway within Cedar Island, using combination of roadway fill and bridging over existing ditches as appropriate. Proposed elevation approximately 18", pending further engineering review and current 100-year storm analysis.
Location	Cedar Island, within community limits
Hazard(s) addressed by project	Flooding (all types); Storm Surge
Type of Solution	Facility construction/maintenance
Natural and Nature Based Solution Opportunity?	**Yes,** particularly if a living shoreline is the measure selected.
Project Estimated Cost	Project cost will be dependent on a number of factors including strategy selected for roadway protection, scope of project, and associated roadway design and implementation. No detailed project cost has been estimated. All options, particularly if done in tandem, will have a high cost. **Cost Level: $$-$$$$**

Potential Implementation Funding Sources	Facility is state-maintained roadway; funding for road elevation would likely be through NCDOT STIP funds, with potential contributions from federal (USDOT) grant sources. Federal Grant Sources: FEMA – BRIC & Flood Mitigation Assistance Program, EDA - Investment for Public Works and Economic Development Facilities, National Fish and Wildlife Federation: National Coastal Resilience Fund & 5 Star and Urban Water Restoration; NOAA - Coastal & Estuarine Land Conservation Program & National Coastal Resilience Fund, State Grant Sources: Rural Grant Programs, NCDEQ Clean Water State Revolving Fund, Z. Smith Reynolds Foundation, and NCDWR Water Resources Development Project Grants.
Project Estimated Timeline	Project is predicted to have a mid-term timeline, taking somewhere between 5-10 years. Roadway improvements are likely to take 1-3 years upon receipt of funding and the solutions identified.
Preliminary Tasks/ Data Required	Preliminary task would be determined by which and how many roadway protection measures are implemented. The first step would be the completion of the feasibility analysis.
Advantages/Disadvantages	Projects would protect critical infrastructure and the only transportation route in and out of Cedar Island. Project would benefit with public outreach effort regarding NBBS. The roadway protection measures outlined here are expensive and construction can be time consuming. Also, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.
Similar Project Examples	Town of Duck Living Shoreline and Resiliency Project; https://ducknc.gov/living-shoreline-and-resiliency-project/
Priority Rating	**Medium**

Town of Duck Living Shoreline and Resiliency Project

Source: Town of Duck Living Shoreline Project- (https://ducknc.gov/living-shoreline-and-resiliency-project/)

Project Name	**Danger Tree Clearing Program**
Project Description	Identify and remove trees that could impact emergency facilities, community resources, or other infrastructure during high wind or other storm events. Identify potential funding sources for private property owners to remove dead trees that could impact infrastructure.
Location	Program should be conducted across the entire Down East region.
Hazard(s) addressed by project	All
Type of Solution	Emergency preparedness
Natural and Nature Based Solution Opportunity?	No.
Project Estimated Cost	Expected to be medium cost, dependent on the number of trees identified. Similar projects in other parts of the state cost $600,000 to $1,000,000. These programs though also contain tree planting and pruning so cost may be significantly lower for just dangerous tree removal **Cost Level: $$$**
Potential Implementation Funding Sources	Federal sources: FEMA BRIC program State sources: NCFS Urban and Community Forestry Financial Assistance Program
Project Estimated Timeline	The project could be completed in the near-term.
Preliminary Tasks/ Data Required	Will need to gather information from the public, CAT and other stakeholders on areas of concern.
Advantages/Disadvantages	The establishment of a danger tree clearing program will help mitigate the amount of damage that coastal hazards, particularly hurricanes and other tropical storms, unleash on the Down East community. The project also looks to form a solution before additional damage occurs to infrastructure in the region.

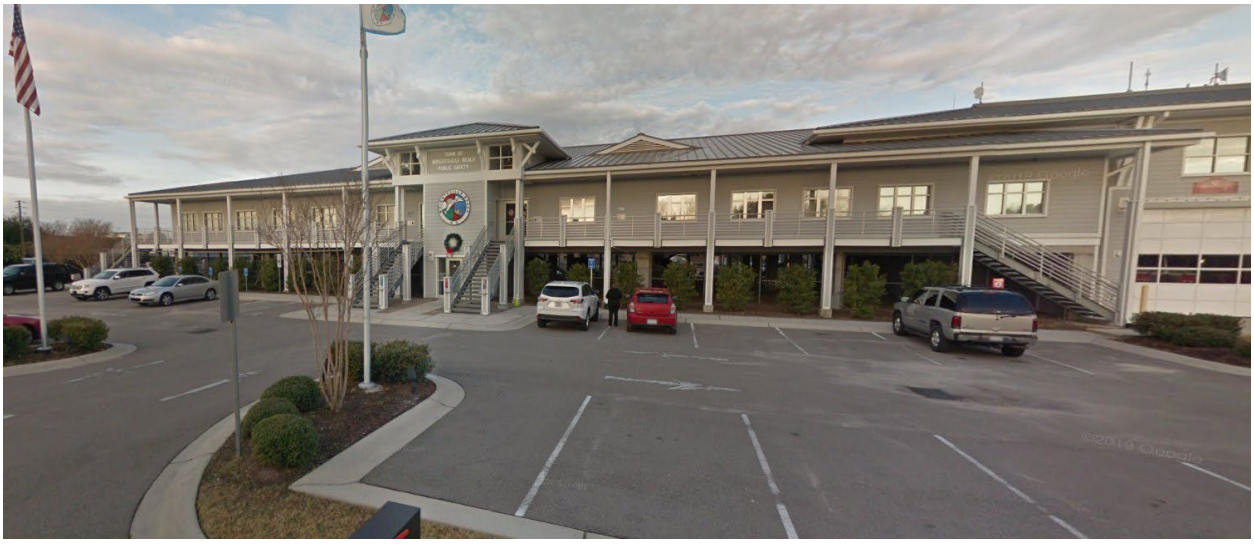
	This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.
Similar Project Examples	City of Charlotte Tree Maintenance Program; https://www.fs.usda.gov/managing-land/urban-forests/ucf/2023-grant-funding#:~:text=City%20of%20Corona%20Urban%20and,and%20maintained%20by%20the%20City.
Priority Rating	**Medium**

City of Wilmington Danger Tree Removal

Source: StarNews Online (https://www.starnewsonline.com/picture-gallery/news/local/2024/06/12/tree-removal-work-on-market-street-in-wilmington-nc/74075118007/)

Project Name	**Emergency Facilities Condition Assessment**
Project Description	Complete an assessment of all Fire Departments and other emergency facilities within the Down East region to determine if further protection or mitigation measures (building elevation, flood gates, facility relocation, etc.) are needed, and identify specific mitigation strategies for each facility. Following completion of the assessment, fund and implement the identified measures.
Location	Emergency facilities across the Down East region. It would be beneficial to utilize input from the drainage inventory and assessment and the groundwater table investigation to determine priority locations.
Hazard(s) addressed by project	Flooding (all types); storm surge
Type of Solution	Facility construction/maintenance
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Assessment of the emergency facilities is expected to be a low cost. Estimates per project are between $50,000 and $150,000. Cost of implementation of strategies identified in assessment vary but are expected to be medium cost, dependent on scope of protection measures. The typical cost to elevate a small structure using piers or pilings in the case of flooding ranges from $20,000 to $80,000. Installation of an operation gate to prevent flooding ranges between $15,000 and $70,000. These would be the cost per project. **Cost Level: $$**
Potential Implementation Funding Sources	Federal sources: FEMA BRIC Program State sources: Volunteer Fire Department Fund, OSFM FEMA 2022 Supplemental Grant
Project Estimated Timeline	Timeline varies depending on which measures are pursued but overall project could be completed in the mid-term (5-10 years) based off of need and scope.

Preliminary Tasks/ Data Required	Drainage inventory and assessment will inform scale of needed protection measures.
Advantages/Disadvantages	Emergency facilities condition assessment will help identify what critical infrastructure is in the most need of additional resources and strategies for protection. Doing this will ensure that the critical infrastructure is protected, and the equipment housed at the emergency facilities are not damaged due to flooding or storm surge. Improvements to the emergency facilities will ensure that residents of Down East have access to these vital services during and after extreme weather events. This strategy will help alleviate hazards associated with extreme weather. However, over time this strategy will need to be paired with other strategies to mitigate hazards associated with the continued increases in extreme weather events and flooding that are anticipated at this locality.
Similar Project Examples	Olympia Volunteer Fire Department-Pamlico County Firehouse Rehabilitation project; https://goldenleaf.org/news/n-c-fire-stations-receive-needed-funds-to-recover-from-natural-disasters/
Priority Rating	**Medium**



Wrightsville Beach FD (Raised Structure)

Source: Google Maps- Wrightsville Beach, NC

Project Name	**High Water Rescue Vehicles**
Project Description	Purchase high water rescue vehicle to be based at Sea Level or adjacent Fire and Rescue Department.
Location	Emergency facilities across the Down East region. It would be beneficial to utilize input from drainage inventory and assessment and the groundwater table investigation to determine priority locations.
Hazard(s) addressed by project	Flooding (all types); storm surge
Type of Solution	Equipment purchase
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Expected to be medium cost, dependent on vehicle selected. Similar projects have cost between $100,000 and $300,000 per vehicle. **Cost Level: $$**
Potential Implementation Funding Sources	Federal sources: FEMA BRIC program. State sources: Volunteer Fire Department Fund, OSFM FEMA 2022 Supplemental Grant.
Project Estimated Timeline	Project could be completed in the near-term. Once project receives necessary funding, procurement of vehicles would be relatively quick. Acquisition of high-water vehicles is estimated to take between 1 and 6 months.
Preliminary Tasks/ Data Required	Recommended to have emergency facility/facilities have additional flood protection measures in place to ensure protection of equipment.
Advantages/Disadvantages	Project would ensure that during extreme weather events and times of coastal hazards that emergency personnel are able to come and rescue residents. Project is reactive to the coastal hazards and does not work to mitigate the issues involved with the coastal hazards.

Similar Project Examples	Seminole County FL acquires two high water/flood rescue vehicles: https://www.firehouse.com/apparatus/type/hazmat-specialty/article/53081962/acela-truck-company-seminole-county-fl-fire-department-acquires-two-highwaterflood-rescue-vehicles
Priority Rating	**Medium**

Seminole County, FL High Water Vehicles

Source firehouse news (https://www.firehouse.com/apparatus/type/hazmat-specialty/article/53081962/acela-truck-company-seminole-county-fl-fire-department-acquires-two-highwaterflood-rescue-vehicles)

Project Name	**Emergency Storage Facility**
Project Description	Construct storm-resilient structure to be used for emergency supply storage; include raised area to allow for resident parking.
Location	To be determined but would serve entire Down East community.
Hazard(s) addressed by project	All
Type of Solution	Facility construction/maintenance
Natural and Nature Based Solution Opportunity?	No
Project Estimated Cost	Expected to be medium to high cost, dependent on size and material used during construction. Costs are expected to be between $100,000 and $500,000 but larger facilities have price ranges in the millions of dollars. **Cost Level: $$**
Potential Implementation Funding Sources	Emergency storage facilities may qualify for federal hazard mitigation funding. FEMA has multiple funding opportunities, including Shelter and Services Program and Building Resilient Infrastructure Communities (BRIC).
Project Estimated Timeline	It is estimated that the timeline for the project would be mid-term (between 5-10 years). Timeline depends on the scope of construction and the determination of the new shelter site.
Preliminary Tasks/ Data Required	Community feedback will be needed to understand which area of Down East is in most need of this resource. Social Vulnerability data from the RVA should be used to help in the determination.
Advantages/Disadvantages	The construction of a storm resilient facility/facilities will ensure that emergency supplies are available for residents after extreme weather events. The project makes the locality more prepared for extreme weather and more adept and ready for emergency response. With this project being rated as a low priority and no funds currently identified, it may be some time before this project

	comes to fruition. The creation of adequate emergency storage facilities does not influence the locality's ability to address hazards associated with extreme weather like flooding. To make the strategy as effective as possible, it will need to be paired with infrastructure projects.
Similar Project Examples	Newark, New Jersey Ironbound Resilience Hub; https://www.njit.edu/tarp/sites/njit.edu.tarp/files/NJIT%20Hazard%20Mitigation%20Workshop_Newark%20Ironbound%20Resilience%20Hub_2023%20%281%29.pdf.
Priority Rating	**Low**

Project Name	**Community Liaison**
Project Description	Hire a paid staff member who would be a trusted local resident to serve as a conduit between government resilient programming, such as the RCCP program, and the community. The community liaison would help ensure that unincorporated towns, which make up the bulk of the communities Down East, are well represented in resilience efforts. The liaison role could be filled by a local resident, regional non-profit organization, or other entity with established community trust.
Location	Community Liaisons would be beneficial community wide. Unincorporated communities would benefit the most from community liaisons and having multiple different liaisons representing localities would help best represent these unique communities.
Hazard(s) addressed by project	All
Type of Solution	Emergency preparedness/ Public outreach
Natural and Nature Based Solution Opportunity?	No. However, may be crucial in teaching the community about natural and nature-based solutions (NBBS) to the community.
Project Estimated Cost	Expected to be low cost. Cost are expected to be between $60,000 and $100,000 annually depending upon the level of effort and number of individuals employed. **Cost Level: $**
Potential Implementation Funding Sources	Potential funding sources: Partnerships with non-governmental organizations may provide opportunities to fund the targeted education effort. The NC Office of Environmental Education website provides information on potential education grants.
Project Estimated Timeline	This strategy could be implemented in the near-term. The hiring of a community liaison would be beneficial for all projects and would help build trust with Down East communities. It is recommended that the search and hiring of a community liaison begin shortly after funding is secure.
Preliminary Tasks/ Data Required	Would be beneficial to hear which communities would benefit the most from a community liaison from the Down

	East community as a whole. Would be beneficial to look at RVA regarding social vulnerability of communities.
Advantages/Disadvantages	The hiring of a community liaison would help build trust with the Down East communities that are being served and help ensure they are knowledgeable on the projects. The project would also ensure better communication from the communities. The project is also a low-cost solution. The community liaison would also be able to help with the education of NBBS and help garner buy-in from the community.
Similar Project Examples	FEMA hiring Liaisons in wake of Hurricane Helene; https://www.fema.gov/blog/fema-hiring-community-liaisons-north-carolina.
Priority Rating	**High**

Project Name	Community Outreach Campaigns
Project Description	Conduct public outreach campaigns on any of the topics listed below (individually or in combination). The goal of the strategy/project would be to promote community conversations on these issues and provide greater awareness of available resources. These campaigns could be led by local government, a community liaison, regional non-profit organization or members of the community. Description of public outreach campaign topics can be found below: **Emergency Preparedness:** Develop emergency preparedness materials to distribute pre-storm, such as door hangers, for each community to know understand evacuation procedures and shelter options, emergency preparedness awareness, and emergency contact information. Redistribute annually in conjunction with community outreach sessions. **Natural and Nature-Based Solution Awareness:** Identify and provide resources to residents on the potential scope and uses of NNBS projects, including the protection of public infrastructure and private property. Utilize resources from federal and state agencies along with regional non-profit organizations to aid this public outreach. **Transportation/ Infrastructure Planning Awareness:** Connect Down East residents to agencies and resources pertaining to the planning and construction process for transportation facilities and other public infrastructure, to help residents understand the process and their role in the development of infrastructure projects.
Location	Public outreach should be conducted across the Down East region.
Hazard(s) addressed by project	All
Type of Solution	Emergency preparedness/ Public outreach
Natural and Nature Based Solution Opportunity?	No, but can discuss NBBS with community which should help with community buy-in down the road.
Project Estimated Cost	Expected to be low cost. Cost are expected to be between $10,000 and $50,000 annually depending upon the level of effort.

	Cost Level: $
Potential Implementation Funding Sources	Potential funding sources: Partnerships with non-governmental organizations may provide opportunities to fund the targeted education effort. The NC Office of Environmental Education website provides information on potential education grants.
Project Estimated Timeline	This project would be ongoing and should start in the near-term. Public outreach pertaining to emergency preparedness should occur in preparation of extreme weather events such as hurricanes, tropical storms, and Nor'easters and/or at the beginning of hurricane season.
Preliminary Tasks/ Data Required	Information would be needed on areas to distribute the material. For emergency preparedness community outreach, it would be important to have a system in place for quick distribution in the face of an impending storm.
Advantages/Disadvantages	Performing public outreach will help to create a more informed community and help with buy-in for other resilience projects. The project is also one of the lowest costs of any of the resilience projects listed in the report. Public outreach has no effect on the infrastructure and natural resources found in the community and will need to be paired with infrastructure projects to bring physical change to the community.
Similar Project Examples	Cape Carteret Low-Impact Development Education Campaign and Manual; https://www.townofcapecarteret.org/development-services/page/low-impact-development-information
Priority Rating	**Low**