



TOWN OF KILL DEVIL HILLS
Land Where Flight Began

MEMORANDUM

February 10, 2025

TO: Mayor and Board of Commissioners

FROM: Debora P. Díaz, Town Manager

REF: New Business

1. Outer Banks Regional Hazard Mitigation Plan adoption (Attached NB-1)

The Town of Kill Devil Hills participates in a hazard mitigation plan program, which maintains the Town's eligibility for federal and state hazard mitigation grant funding and disaster assistance. It is also a major component in gaining credit towards Kill Devil Hills' Community Rating System (CRS) and associated discounts on flood insurance for property owners.

In 2015, the Town was part of the Albemarle Regional Hazard Mitigation Plan, which included nine counties. Because a plan must be updated and approved by the Federal Emergency Management Agency (FEMA) every five years to remain in good standing, in 2020, the Town, along with other Dare County local governments, transitioned to a plan that addresses only Dare and Currituck Counties. This planned transition occurred because these areas have very similar hazards and mitigation strategies, which has proven to make a very comprehensive and streamlined plan. The Planning Department's accompanying memorandum details the Town-specific aspects of the 2025 draft plan, which can be reviewed at the following link:

https://www.kdhnc.com/DocumentCenter/View/15889/2025_Draft_Outer-Banks_Regional_Hazard_Mitigation_Plan

Staff recommends Board approval of the plan through adoption of the *Resolution Adopting the 2025 Outer Banks Regional Hazard Mitigation Plan*.

A motion will be in order.

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Planning and Inspections
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THE TOWN OF KILL DEVIL HILLS
NORTH CAROLINA

PLANNING DEPARTMENT

February 10, 2025

Memorandum

To: Debbie Diaz

From: Meredith Guns, Planning Director *MBG*

Subject: Outer Banks Regional Hazard Mitigation Plan- Resolution to Adopt

Over the past year Dare County, Currituck County and all incorporated municipalities have been working with the Wood, LLC consultant group to update the Hazard Mitigation Plan. In addition to Town Staff, Kill Devil Hills had dedicated citizen stakeholders, Doug Styons and Skip Jones, attend each meeting and provide input for the plan.

Attached to this memorandum are key sections of the Outer Banks Regional Hazard Mitigation Plan for your review/consideration. The other pages of the plan provide details on Currituck, Dare, and our six towns along with information needed to meet FEMA requirements. If you would like to review the entire plan it can be found here:

https://www.kdhnc.com/DocumentCenter/View/15889/2025_Draft_Outer-Banks_Regional_Hazard_Mitigation_Plan

A brief outline of the plan update is as follows:

1. Section 1 - To provide you an introduction to hazard mitigation and the Outer Banks Regional Hazard Mitigation Plan to include: Background, Purpose and Authority, Scope, References and Plan Organization (attached).
2. Section 2 - To provide your insight on the planning process that was used to include: Purpose and Vision (attached), What's Changed in the Plan (attached), Preparing the Plan (planning process, risk assessment, mitigation strategies and plan maintenance), the Hazard Mitigation Planning Committee, Meetings and Workshops, Involving the Public, Outreach Efforts, Involving the Stakeholders, and Documentation of Plan Progress, completed and deleted mitigation efforts since the past plan.
3. Section 3 – Includes Planning Area Profile including geography, environment, transportation, populations, land use, employment and industry.

Page 2:

4. Section 4- Outlines risk assessment in our area. This including hazard identification, and risk assessment and methodology, asset inventory including critical facilities, hazard profiles, and conclusion of hazard risk (attached).
5. Section 5 - Capability Assessment including the local jurisdiction ability to implement a comprehensive mitigation strategy and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs and projects. This including adoption of plans that are directly related to mitigating hazards.
6. Section 6 - Mitigation Strategies which describes the process for development of mitigation strategies including goal setting and prioritization process.
7. Section 7 - the Towns' and Counties' mitigation plans specific to their jurisdiction. Kill Devil Hill's mitigation strategies are listed in table 7.4 (attached).

Consultants David Stroud and Abigail Moore, from WSP, were impressed with the level of community engagement. State officials also attended meetings and were also impressed at the level of committee and community involvement. Significant work was also done to ensure the new plan could be used to pursue additional Community Rating System points that may reduce flood insurance cost in the future.

Adopting the plan will: maintain our eligibility for FEMA disaster grants for the next five years; help ensure North Carolina remains an enhanced hazard mitigation state with reduced grant cost shares; provide guidance as we work to improve community resilience by mitigating hazards; and provides crucial CRS points for our citizens.

Staff recommends adoption of the attached resolution, which will adopt the Outer Banks Regional Hazard Mitigation Plan in its entirety.



TOWN OF KILL DEVIL HILLS

Land Where Flight Began

A Resolution Adopting the 2025 Outer Banks Regional Hazard Mitigation Plan

WHEREAS, the citizens and property within the Town of Kill Devil Hills are subject to the effects of natural hazards that pose threats to lives and cause damage to property, and with the knowledge and experience that certain areas of the Outer Banks region are particularly vulnerable to drought, excessive heat, hurricane and coastal hazards, thunderstorm, tornado, winter weather, flooding, wildfire, hazardous substances, cyber threat, terrorism, and infrastructure failure; and

WHEREAS, the Town of Kill Devil Hills desires to seek ways to mitigate the impact of identified hazard risks; and

WHEREAS, the Legislature of the State of North Carolina has in Article 5, Section 160D-501 of the North Carolina General Statutes, delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry; and

WHEREAS, the North Carolina General Assembly has enacted North Carolina General Statute Section 166A-19.41 (*State emergency assistance funds*), which provides that for a state of emergency declared pursuant to N.C.G.S. 166A-19.20(a) after the deadline established by the Federal Emergency Management Agency, pursuant to the Disaster Mitigation Act of 2000, P.L. 106-390, the eligible entity shall have a hazard mitigation plan approved pursuant to the Stafford Act; and.

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local governments must develop an all-hazards Mitigation Plan in order to be eligible to receive future Hazard Mitigation Grant Program Funds and other disaster-related assistance funding and that said Plan must be updated and adopted within a five year cycle; and

WHEREAS, the Town of Kill Devil Hills has performed a comprehensive review and evaluation of each section of the previously approved Hazard Mitigation Plan and has updated that plan as required under regulation 44 CFR Part 201 and according to guidance issued by the Federal Emergency Management Agency and the North Carolina Division of Emergency Management; and

WHEREAS, it is the intent of the Kill Devil Hills Board of Commissioners to fulfill this obligation in order that the Town of Kill Devil Hills will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the County; now, therefore be it

RESOLVED that the Kill Devil Hills Board of Commissioners:

1. Adopts the Outer Banks Regional Hazard Mitigation Plan.

2. Vests appropriate Town Staff with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action; and
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map and identify floodplain areas, and cooperate with neighboring communities with respect to management of adjoining floodplain areas in order to prevent exacerbation of existing hazard impacts.
3. Requests that the Dare County Emergency Management Director assures that the Hazard Mitigation Plan is reviewed annually and updated every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the appropriate governing boards for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the Hazard Mitigation Plan.

This the 10th day of February, 2025.

SEAL

John Windley
Mayor

ATTEST:

James Michael O'Dell
Town Clerk

DRAFT

OUTER BANKS REGIONAL Hazard Mitigation Plan



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1 INTRODUCTION

Section 1 provides a general introduction to hazard mitigation and an introduction to the Outer Banks Regional Hazard Mitigation Plan. This section contains the following subsections:

- 1.1 Background
- 1.2 Purpose and Authority
- 1.3 Scope
- 1.4 References
- 1.5 Plan Organization

1.1 BACKGROUND

This document comprises a Hazard Mitigation Plan for the Outer Banks Region of North Carolina.

Each year in the United States, natural and human-caused hazards take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. These monies only partially reflect the true cost of disasters because additional expenses incurred by insurance companies and non-governmental organizations are not reimbursed by tax dollars. Many natural hazards are predictable, and much of the damage caused by hazard events can be reduced or even eliminated.

Hazards are a natural part of the environment that will inevitably continue to occur, but there is much we can do to minimize their impacts on our communities and prevent them from resulting in disasters. Every community faces different hazards, has different resources to draw upon in combating problems, and has different interests that influence the solutions to those problems. Because there are many ways to deal with hazards and many agencies that can help, there is no one solution for managing or mitigating their effects. Planning is one of the best ways to develop a customized program that will mitigate the impacts of hazards while accounting for the unique character of a community.

A well-prepared hazard mitigation plan will ensure that all possible activities are reviewed and implemented so that the problem is addressed by the most appropriate and efficient solutions. It can also ensure that activities are coordinated with each other and with other goals and activities, preventing conflicts and reducing the costs of implementing each individual activity. This plan provides a framework for all interested parties to work together toward mitigation. It establishes the vision and guiding principles for reducing hazard risk and proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.

In an effort to reduce the nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) to invoke new and revitalized approaches to mitigation planning. Section 322 of DMA 2000 emphasizes the need for state and local government entities to closely coordinate on mitigation planning activities and makes the development of a hazard mitigation plan a specific eligibility requirement for any local government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP), the Building Resilient Infrastructure and Communities (BRIC) program, and the Flood Mitigation Assistance (FMA) Program, all of which are administered by the Federal Emergency Management Agency (FEMA) under the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next disaster strikes.

This plan was prepared in coordination with FEMA Region 4 and the North Carolina Division of Emergency Management (NCEM) to ensure that it meets all applicable federal and state planning requirements. A Local Mitigation Plan Review Tool, found in Appendix A, provides a summary of FEMA’s current minimum standards of acceptability and notes the location within this plan where each planning requirement is met.

1.2 PURPOSE AND AUTHORITY

This plan was developed in a joint and cooperative manner by members of a Hazard Mitigation Planning Committee (HMPC) which included representatives of County and Town departments, federal and state agencies, citizens, and other stakeholders. This plan will ensure all jurisdictions in the Outer Banks remain eligible for federal disaster assistance including FEMA’s HMGP, BRIC, and FMA programs.

This plan has been prepared in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act or the Act), 42 U.S.C. 5165, enacted under Section 104 of the Disaster Mitigation Act of 2000, (DMA 2000) Public Law 106-390 of October 30, 2000, as implemented at CFR 201.6 and 201.7 dated October 2007.

This plan will be adopted by each participating jurisdiction in accordance with standard local procedures. Copies of adoption resolutions are provided in Section 9 Plan Adoption.

1.3 SCOPE

The planning area for the Outer Banks Region includes all incorporated municipalities and unincorporated areas in Currituck County and Dare County. All participating jurisdictions are listed below:

- Currituck County
- Dare County
- Town of Duck
- Town of Kill Devil Hills
- Town of Kitty Hawk
- Town of Manteo
- Town of Nags Head
- Town of Southern Shores

The Outer Banks Region followed the planning process prescribed by FEMA, and this plan was developed under the guidance of a planning committee comprised of County and Town staff; citizens; and other stakeholders. The HMPC conducted a risk assessment that identified and profiled hazards that pose a risk to the planning area, assessed the planning area’s vulnerability to these hazards, and examined each participating jurisdiction’s capabilities in place to mitigate them. The plan evaluates and prioritizes hazards for the planning area using a Priority Risk Index, as determined through the risk and vulnerability assessments. Hazards are categorized as “low,” “moderate,” or “high” priority, however, mitigation strategies are identified for all profiled hazards. The hazards profiled in this plan are:

- Drought
- Earthquake
- Excessive Heat
- Flooding (including Sea Level Rise)

SECTION 1: INTRODUCTION

- Hurricane & Coastal Hazards (including Erosion, Rip Current, and Nor'easters)
 - Tornadoes & Thunderstorms (including Lightning & Hail)
 - Severe Winter Weather
 - Tornado
 - Wildfire
 - Hazardous Substances
 - Radiological Emergency
 - Cyber Threat
 - Terrorism
 - Infrastructure Failure
-

1.4 REFERENCES

The following FEMA guides and reference documents were used to prepare this document:

- FEMA 386-1: Getting Started: Building Support for Mitigation Planning. September 2002.
- FEMA 386-2: Understanding Your Risks: Identifying Hazards and Estimating Losses. August 2001.
- FEMA 386-3: Developing the Mitigation Plan. April 2003.
- FEMA 386-4: Bringing the Plan to Life. August 2003.
- FEMA 386-5: Using Benefit-Cost Review in Mitigation Planning. May 2007.
- FEMA 386-6: Integrating Historic Property and Cultural Resource Considerations into Hazard Mitigation Planning. May 2005.
- FEMA 386-7: Integrating Manmade Hazards into Mitigation Planning. September 2003.
- FEMA 386-8: Multijurisdictional Mitigation Planning. August 2006.
- FEMA 386-9: Using the Hazard Mitigation Plan to Prepare Successful Mitigation Projects. August 2008.
- FEMA National Fire Incident Reporting System 5.0: Complete Reference Guide. January 2008.
- FEMA. Integrating Hazard Mitigation into Local Planning: Case Studies and Tools for Community Officials. March 1, 2013.
- FEMA. Mitigation Ideas. A Resource for Reducing Risk to Natural Hazards. January 2013.
- FEMA Hazard Mitigation Assistance Program and Policy Guide. July 30, 2024.
- FEMA. Local Mitigation Plan Review Guide. October 1, 2011.
- FEMA. FP 206-21-0002. Local Mitigation Planning Policy Guide. April 19, 2023.
- FEMA. Local Mitigation Planning Handbook. May 2023.

Additional sources used in the development of this plan, including data compiled for the Hazard Identification and Risk Assessment, are listed in Appendix D.

1.5 PLAN ORGANIZATION

The Outer Banks Regional Hazard Mitigation Plan is organized into the following sections:

- Section 1: Introduction
- Section 2: Planning Process
- Section 3: Planning Area Profile

SECTION 1: INTRODUCTION

- Section 4: Hazard Identification & Risk Assessment
- Section 5: Capability Assessment
- Section 6: Mitigation Strategy
- Section 7: Mitigation Action Plans
- Section 8: Plan Maintenance
- Section 9: Plan Adoption
- Appendix A: Local Plan Review Tool
- Appendix B: Planning Process Documentation
- Appendix C: Mitigation Alternatives
- Appendix D: References

2 PLANNING PROCESS

Requirement §201.6(b): An open public involvement process is essential to the development of an effective plan. To develop a more comprehensive approach to reducing the effects of natural disasters, the planning process shall include:

- 1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;
- 2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia, and other private and nonprofit interests to be involved in the planning process; and
- 3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6(c)(1): The plan shall include the following:

- 1) Documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

This section provides a review of the planning process followed for the development of the Outer Banks Regional Hazard Mitigation Plan. It consists of the following sub-sections:

- 2.1 Purpose and Vision
- 2.2 What's Changed in the Plan
- 2.3 Preparing the Plan
- 2.4 Hazard Mitigation Planning Committee
- 2.5 Meetings and Workshops
- 2.6 Involving the Public
- 2.7 Outreach Efforts
- 2.8 Involving the Stakeholders
- 2.9 Documentation of Plan Progress

2.1 PURPOSE AND VISION

As defined by FEMA, “hazard mitigation” means any sustained action taken to reduce or eliminate the long-term risk to life and property from a hazard event. Hazard mitigation planning is the process through which hazards are identified, likely impacts determined, mitigation goals set, and appropriate mitigation strategies determined, prioritized, and implemented.

The purpose of the Outer Banks Regional Hazard Mitigation Plan is to identify, assess, and mitigate hazard risk to better protect the people and property within Currituck County and Dare County from the effects of natural and human-caused hazards. This plan documents progress on existing hazard mitigation planning efforts, updates the previous plan to reflect current conditions in the Region including relevant hazards and vulnerabilities, increases public education and awareness about the plan and planning process, maintains grant eligibility for participating jurisdictions, maintains compliance with state and federal requirements for local hazard mitigation plans, and identifies and outlines strategies the Counties and participating jurisdictions will use to decrease vulnerability and increase resiliency.

During the development of the 2020 Outer Banks Regional Hazard Mitigation Plan, the Hazard Mitigation Planning Committee (HMPC) developed a vision for the planning area in terms of hazard mitigation planning by considering what the successful implementation of the plan would achieve, what

outcomes the plan would generate, and what the Outer Banks will look like in the near future. This vision statement, presented below, remains relevant to define and guide the planning process for this plan update and the planning area's approach to hazard mitigation.

The Outer Banks Region will maintain its unique quality of life and sense of place while planning and preparing for resilience in the face of future hazards. The Region will be prepared for and adaptable to hazards, and when confronted with disaster, the Region will recover stronger and smarter in a planned, balanced, sustainable manner that acknowledges the dynamic nature of hazard risks in a changing climate. Through innovation and collaboration, the Outer Banks Region will ensure a thriving, safe environment for residents and visitors.

2.2 WHAT'S CHANGED IN THE PLAN

All participating jurisdictions in this plan update were participants in the 2020 Outer Banks Regional Hazard Mitigation Plan, which was approved by FEMA on June 10, 2020.

This hazard mitigation plan update involved a comprehensive review and update of each section of the existing plan and an assessment of the success of the Counties and Towns in evaluating, monitoring and implementing the mitigation strategy outlined in their existing plans. Only the information and data still valid from the existing plans was carried forward as applicable into this update. The following requirements were addressed during the development of this regional plan:

- Consider changes in vulnerability due to action implementation;
- Document success stories where mitigation efforts have proven effective;
- Document areas where mitigation actions were not effective;
- Document any new hazards that may arise or were previously overlooked;
- Incorporate new data or studies on hazards and risks;
- Incorporate new capabilities or changes in capabilities;
- Incorporate growth and development-related changes to inventories; and
- Incorporate new action recommendations or changes in action prioritization.

Section 4.2 provides a comparison of the hazards addressed in the 2023 State of North Carolina HMP and the 2020 Outer Banks Regional plan and provides the final decision made by the HMPC as to which hazards should be included in the new 2025 Outer Banks Regional Hazard Mitigation Plan.

In addition to the specific changes in hazard analyses identified in Section 4.2, the following items were also addressed in this 2025 plan update:

- GIS was used, to the extent data allowed, to analyze the priority hazards as part of the vulnerability assessment.
- Assets at risk to identified hazards were identified by property type and values of properties based on current data in North Carolina Emergency Management's IRISK Database.
- An updated discussion on the effects of climate change and other future conditions was included in each hazard profile in the risk assessment.

SECTION 2: PLANNING PROCESS

- The discussion on growth and development trends was enhanced utilizing 2022 American Community Survey data and current land use plans.
- An effort was made to provide underserved communities and vulnerable populations with opportunities to participate in and contribute to the plan update process. Engagement opportunities were provided through the public survey, the plan website, and stakeholder coordination.
- Enhanced public outreach and agency coordination efforts were conducted throughout the plan update process in order to meet the more rigorous requirements of the 2017 CRS Coordinator’s Manual, in addition to DMA requirements.

2.3 PREPARING THE PLAN

The planning process for preparing the Outer Banks Regional Hazard Mitigation Plan was based on DMA planning requirements and FEMA’s associated guidance. This guidance is structured around a four-phase process:

- 1 Planning Process
- 2 Risk Assessment
- 3 Mitigation Strategy
- 4 Plan Maintenance

Into this process, the planning consultant integrated a more detailed 10-step planning process used for FEMA’s Community Rating System (CRS) and Flood Mitigation Assistance (FMA) programs. Thus, the modified 10-step process used for this plan meets the requirements of six major programs: FEMA’s Hazard Mitigation Grant Program (HMGP); Building Resilient Infrastructure & Communities (BRIC) Program; CRS Program; FMA Program; Severe Repetitive Loss Program; and new flood control projects authorized by the U.S. Army Corps of Engineers.

Table 2.1 shows how the 10-step CRS planning process aligns with the four phases of hazard mitigation planning pursuant to the Disaster Mitigation Act of 2000.

Table 2.1 – Mitigation Planning and CRS 10-Step Process Reference Table

DMA Process	CRS Process
Phase I – Planning Process	
§201.6(c)(1)	Step 1. Organize to Prepare the Plan
§201.6(b)(1)	Step 2. Involve the Public
§201.6(b)(2) & (3)	Step 3. Coordinate
Phase II – Risk Assessment	
§201.6(c)(2)(i)	Step 4. Assess the Hazard
§201.6(c)(2)(ii) & (iii)	Step 5. Assess the Problem
Phase III – Mitigation Strategy	
§201.6(c)(3)(i)	Step 6. Set Goals
§201.6(c)(3)(ii)	Step 7. Review Possible Activities
§201.6(c)(3)(iii)	Step 8. Draft an Action Plan
Phase IV – Plan Maintenance	
§201.6(c)(5)	Step 9. Adopt the Plan
§201.6(c)(4)	Step 10. Implement, Evaluate and Revise the Plan

In addition to meeting DMA and CRS requirements, this plan also meets the recommended steps for developing a Community Wildfire Protection Plan (CWPP). Table 2.2 below outlines the recommended CWPP process and the CRS step and sections of this plan that meet each step.

4.6 CONCLUSIONS ON HAZARD RISK

PRIORITY RISK INDEX

As discussed in Section 4.3 Risk Assessment Methodology and Assumptions, the Priority Risk Index was used to rate each hazard on a set of risk criteria and determine an overall standardized score for each hazard. The conclusions drawn from this process are summarized below.

Table 4.117 summarizes the degree of risk assigned to each identified hazard using the PRI method.

Table 4.117 – Summary of PRI Results

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Drought	Possible	Minor	Large	More than 24 hrs	More than 1 week	2.2
Earthquake	Unlikely	Minor	Large	Less than 6 hrs	Less than 6 hrs	1.9
Excessive Heat	Highly Likely	Limited	Large	More than 24 hrs	Less than 1 week	3.0
Flooding	Highly Likely	Critical	Large	6 to 12 hours	Less than 1 week	3.5
Hurricane & Coastal Hazards	Likely	Catastrophic	Large	More than 24 hrs	Less than 1 week	3.3
Tornadoes & Thunderstorms	Highly Likely	Limited	Moderate	Less than 6 hrs	Less than 6 hrs	2.9
Severe Winter Weather	Highly Likely	Minor	Large	More than 24 hrs	Less than 1 week	2.7
Wildfire	Possible	Limited	Moderate	Less than 6 hrs	Less than 1 week	2.5
Hazardous Materials Incident	Likely	Minor	Negligible	Less than 6 hrs	Less than 24 hrs	2.0
Radiological Emergency	Unlikely	Limited	Negligible	Less than 6 hrs	More than 1 week	1.9
Cyber Threat	Possible	Critical	Small	Less than 6 hrs	More than 1 week	2.7
Terrorism	Unlikely	Critical	Small	Less than 6 hrs	More than 1 week	2.4
Infrastructure Failure	Possible	Critical	Small	Less than 6 hrs	More than 1 week	2.7

The results from the PRI have been classified into three categories based on the assigned risk value which are summarized in Table 4.118:

- **High Risk** – Widespread potential impact. This ranking carries a high threat to the general population and/or built environment. The potential for damage is widespread.
- **Medium Risk** – Moderate potential impact. This ranking carries a moderate threat level to the general population and/or built environment. Here the potential damage is more isolated and less costly than a more widespread disaster.
- **Low Risk** – Minimal potential impact. The occurrence and potential cost of damage to life and property is negligible or nonexistent.

SECTION 4: RISK ASSESSMENT

Table 4.118 - Summary of Hazard Risk Classification

High Risk (≥ 3.0)	Flooding Hurricane & Coastal Hazards Excessive Heat
Moderate Risk (2.0 – 2.9)	Tornadoes & Thunderstorms Severe Winter Weather Cyber Threat Infrastructure Failure Wildfire Terrorism Drought Hazardous Materials Incident
Low Risk (< 2.0)	Earthquake Radiological Emergency

D.3 MITIGATION STRATEGY

Table D.14 – Mitigation Action Plan, Town of Kill Devil Hills

Action #	Action Description	Hazard(s) Addressed	Goal & Objective Addressed	Priority	Mitigation Category	Lead Agency / Department	Potential Funding Source	Implementation Timeline	2024 Status	2024 Implementation Status Comments
KDH1	Drainage System Maintenance - Continue mowing drainage ditches and conduct normal maintenance and storm event driven maintenance	Flood, Hurricane & Coastal Hazards	2.2	High	Prevention	Public Services, NCDOT	General Fund	Annually	Carry Forward	Drainage maintenance has been completed annually and upgrades to the drainage system has also been complete.
KDH2	Maritime Forest Environmental Zoning District - Pursue mitigation and preparedness planning within this district.	Wildfire	3.2	High	Prevention	Planning Department	General Fund	Annually	Carry Forward	North Carolina Forestry Department in conjunction with the Town Fire Department and the Nature Conservancy have preformed several controlled burns to the benefit of the Maritime Forest. Work with TNC and NC forestry to develop a written plan for KDH.
KDH3	Flood Response - Coordinate efforts to expedite reconstruction and resilient rebuilding efforts in cooperation with Dare County Emergency Management staff.	Flood, Hurricane & Coastal Hazards, Severe Winter Storm	3.1	High	Prevention	Planning Department	General Fund	1-3 years	Carry Forward	Town has had no State of Emergency since last update but will continue the policy for any future event.
KDH4	Fire Protection - Implement Water Systems Master Plan	Wildfire	3.3	High	Prevention	Public Services, Water Department	Water Fund	1-5 years	Carry Forward	Town continues to implement the Water System Master Plan. 3,847 linear feet of water line were replaced in 2023 Flow test are still required for all new development sites. Amendment to Zoning for sprinklers in SFD over 6,000 Sf on the oceanfront.
KDH5	Storm Water Management - Continue to implement the storm water management plan. Local Planning and Regulations.	Flood, Hurricane & Coastal Hazards	3.3	High	Prevention	Public Services	General Fund	6 months	Carry Forward	Town implemented stormwater regulations for large single family dwellings. Maintenance requirements are being enforced on all engineered stormwater designs. Additional regulations and amendments will be considered.
KDH6	Map Information - Maintain updated flood map information for citizens and customers. Map Erosion areas annually to help inform the public of high erosion areas.	Flood, Hurricane & Coastal Hazards	1.1	High	Prevention	NC Division of Emergency Management, Planning Department	NC Division of Emergency Management	1 year	Carry Forward	Historic Flood Maps have been digitized into laser fiche. Flood outreach is completed annually to all residents and also to targeted groups with particular risks. Erosion prone areas have not been mapped at this time but still need to be looked at. Maintain CAMA Erosion Rate Maps.
KDH7	Continue to participate in CRS	Flood, Hurricane & Coastal Hazards	3.3	High	Prevention	Planning Department	General Fund	Annually	Carry Forward	Town completed a cycle visit in 2023 maintaining a Class 5 community. The Town had enough points for a Class 4 but did not have some the prerequisite for the Class. We will be working toward Class 4 in next cycle. The Town has completed annual recertifications.

ANNEX D: TOWN OF KILL DEVIL HILLS

Action #	Action Description	Hazard(s) Addressed	Goal & Objective Addressed	Priority	Mitigation Category	Lead Agency / Department	Potential Funding Source	Implementation Timeline	2024 Status	2024 Implementation Status Comments
KDH8	Develop Stormwater Management Working Group	Flooding, Hurricane & Coastal Hazards	4.3	High	Prevention	County And neighboring Muncipalities	Staff Time	2-5 Years	New	
KDH9	Develop Heat Emergency Response Procedure	Excessive Heat	1.1, 3.3	Medium	Prevention	Planning Department, Fire Department and Dare County Emergency Management	General Fund	2-3 years	New	
KDH10	Relocation/Elevation - Relocate or elevate repetitive loss and high risk properties and expedite permitting for these situations	Flood, Hurricane & Coastal Hazards	1.2	Medium	Property Protection	Planning Department	General Fund	3-5 years	Carry Forward	There have been no requests from houses within repetitive loss areas to implement mitigation with express permitting unless it was in a State of Emergency during which all permits are expedited.
KDH11	Acquisition - Encourage repetitive loss and high risk properties to consider acquisition as a possible solution	Flood, Hurricane & Coastal Hazards	1.2	Low	Property Protection	Planning Director, Board of Commissioners	NC Division of Emergency Management, FEMA	5+ years	Carry Forward	Continues to be incomplete for lack of funding.
KDH12	Critical Facilities Protection - Take appropriate actions to prevent and/or minimize damages to critical facilities. Use generators or other forms of redundant power to ensure that critical facilities and infrastructure remain operational.	All Hazards	2.1/2.2	High	Property Protection	Police, Fire & Rescue, Public Works, NC Dominion Power	General Fund	1-3 years	Carry Forward	Additional critical facilities outside of government owned are reviewed for having alternative power (generators) and hurricane ready construction methods. New Fire Station constructed and occupied in 2024 has up to date hurricane protective measures and generators
KDH13	Substantial Damage/Substantial Improvement - Lower Threshold	Flood, Hurricane & Tropical Storm, Coastal Hazards, Sea Level Rise	3.1	High	Property Protection	Planning	General Fund	1-3 years	New	
KDH13	Open Space Preservation - Support efforts to preserve natural areas	Flood, Hurricane & Coastal Hazards, Tornadoes & Thunderstorms	3.3	High	Natural Resource Protection	Planning Department	General Fund	3-5 years	Carry Forward	Continues to be incomplete for lack of funding.
KDH15	Reservoirs - 1. Coordinate with Nags Head on the future of Fresh Pond. 2. Maintain liaison with NC Division of Coastal Management concerning the development of the Kill Devil Hills Land Use Plan	Flood, Hurricane & Coastal Hazards, Severe Winter Storm	3.1	High	Natural Resource Protection	Planning Department, CAMA	General Fund	1 year	Carry Forward	CAMA Land Use Plan was updated and adopted September 2020 and CRC Certified November 2020. The CAMA AEC around Fresh Pond has been maintained. Work with Nags Head on removing Fresh Pond from the AEC and using Fresh Pond as a resource for recreation, stormwater management, and open space.
KDH16	Surface Water Quality - Preserve surface water quality and enhance water quality through storm water management and zoning.	Flood, Hurricane & Coastal Hazards	3.2	High	Natural Resource Protection	Planning Department, Public Services	General Fund	3-5 years	Carry Forward	Town continues to upgrade and maintain existing stormwater drainage system. Town is working on a major drainage project on Wrightsville Ave to alleviate dependence on ocean outfalls (2024).

Action #	Action Description	Hazard(s) Addressed	Goal & Objective Addressed	Priority	Mitigation Category	Lead Agency / Department	Potential Funding Source	Implementation Timeline	2024 Status	2024 Implementation Status Comments
KDH17	Septic Health Initiative	Flooding (including Sea Level Rise)	1.1, 3.1	High	Natural Resource Protection, Public Education & Awareness	Planning and Dare County Health Department	General Fund	1-3 years	New	
KDH18	Dune and Beach Maintenance - Continue ongoing beach nourishment efforts	Flood, Hurricane & Coastal Hazards	3.2	High	Structural Projects	Planning Director, Board of Commissioners	General Fund	Monitor Annually, nourish every 5 years	Carry Forward	5 year renourishment project was completed in July 2022 along with an updated Beach Maintenance Plan . The Town also contracts for annual monitoring of the engineered beach. Adopted a more strict zoning regulations for dune protection.
KDH19	Complete the Wrightsville Goddard Street Intercept Project	Flooding (including Sea Level Rise)	1.2, 2.1	High	Structural Projects	Planning Department and Public Services	General Fund and Grants	1-3 years	New	
KDH20	Increase Storm Drainage Capacity and improve stormwater quality	Flooding (including Sea Level Rise), Hurricane & Coastal Hazards	1.2	High	Structural Projects	Planning Department and Public Services	General Fund and Grants	1-5 years	New	
KDH21	Develop Living Shorelines to prevent estuarine erosion	Flooding, Hurricane & Coastal Hazards (including Erosion)	1.2, 3.2	High	Structural Projects	Planning	General Fund and Grants	2-5 years	New	
KDH22	Extend NCDOT Outfalls	Flooding	1.2, 2.1	High	Structural Projects	NCDOT	NCDOT	1-5 Years	New	
KDH23	Hazard Warning - Facilitate evacuation	All Hazards	1.1	High	Emergency Services	Dare County Control Group	General Fund	Annually	Carry Forward	Dare County tests its emergency system and procedures annually.
KDH124	Health and Safety Maintenance - Develop ongoing protocols to assure the maintenance of critical public services	All Hazards	2.1	High	Emergency Services	Police, Fire & Rescue, Public Works, Dare County Emergency Management	General Fund	Annually	Carry Forward	Town reviews and inspects critical public facilities continually throughout the year and also does a pre-check in the event of a pending storm
KDH25	Emergency Services - Hurricane Exercises	Hurricane & Coastal Hazards	2.1	High	Emergency Services	Planning Department	General Fund	1 year	Carry Forward	Town continues to participate in the Dare County Emergency response training, a multi jurisdictional training exercises. Town reviews and update Kill Devil Hills' Emergency Plan annually.
KDH26	Hazard Recovery - Coordinate efforts to expedite recovery.	All Hazards	1.1	High	Public Education & Awareness	Planning Department, Board of Commissioners	General Fund	1 year	Carry Forward	Town Public Information Officer works closely with all other jurisdictions and Dare County. Dare County serves as the point of information with input from the Towns to create a unified message.
KDH27	Insurance - Maintain outreach efforts and continue making flood insurance available to the Town's residents	Flood, Hurricane & Coastal Hazards	1.1	High	Public Education & Awareness	Planning Department, Town Clerk	General Fund	1 year	Carry Forward	Continue to follow the Town PPI plan and annual updates for public outreach and education. Continue coordinate with CRS Users Group on regional outreach projects.

Action #	Action Description	Hazard(s) Addressed	Goal & Objective Addressed	Priority	Mitigation Category	Lead Agency / Department	Potential Funding Source	Implementation Timeline	2024 Status	2024 Implementation Status Comments
KDH28	Compile and maintain current information in the Kill Devil Hills Floodplain Management Library	Flood, Hurricane & Coastal Hazards	1.1	High	Public Education & Awareness	CRS Coordinator	General Fund	Annually	Carry Forward	Town has scanned all historic flood maps and elevation certificates. Planning Department has developed a scanning protocol to ensure build permits and associated submittals are scanned at the completion of a project including but not limited to as built surveys, elevation certificates and permits. The Town is currently working on an educational video on how to prepare your home from freezing temperatures both about energy efficiency and avoiding frozen pipes. We will also be looking into another educational video on heat stroke and how to protect yourself in extreme heat this spring/summer. The video will run on Government TV, Town YouTube channel and the Town website.
KDH29	Outreach Projects - Initiate outreach projects to inform the public on Town and County initiatives that will reduce hazard related losses of property and life	All Hazards	1.1	High	Public Education & Awareness	Planning Department, Dare County Emergency Management	General Fund	1 year or Annually	Carry Forward	Continue to follow the Town PPI plan for public outreach and education for flood-related hazards. Additional all-hazards education efforts includes mailings, videos, brochures, public engagement and coordinated efforts with Dare County outreach.
KDH30	Circulate brochure specifically on NFIP	Flood, Hurricane & Coastal Hazards	1.1	High	Public Education & Awareness	Planning Department	General Fund	Annually	Carry Forward	Town maintained a Class 5 CRS rating in 2023. Town continue to strive to improve. Town provides FEMA publication in the office, on the Town website and at the Kill Devil Hills Public Library
KDH31	Conduct contractors meeting - Hold an annual outreach meeting for engineers and developers on how to construct to a higher standard to prevent damage.	All Hazards	3.1	High	Public Education & Awareness	Planning Department	General Fund	1 year	Carry Forward	Missed several year of contractor meeting due to global pandemic. Held a surveyor/engineers Elevation Certificate training by NCEM at KDH Town Hall Spring 2024 and planning a contractor meeting Fall 2024.
KDH32	Outreach Projects - Present at civic groups, professional organizations, etc. annually for citizens and stakeholder groups to discuss hazards and how to protect themselves.	All Hazards	1.1	High	Public Education & Awareness	Planning Department	General Fund	1 year	Carry Forward	Presented Hurricane Preparation and Flood Information and protection session at the Dare County Senior Center in 2023 and 2024. AS well as targeted outreach efforts to other civic groups.
KDH33	Create educational brochure on the dangers of extreme heat and cold and steps the public can take to protect themselves	Excessive Heat, Severe Winter Weather	1.1	Medium	Public Education & Awareness	Planning Department	General Fund	1-2 years	Carry Forward	Not yet completed. Still a priority.
KDH34	Mitigation education for homeowners	All Hazards	1.1	Medium	Public Education & Awareness	Planning Department	General Fund	2-3 years	Carry Forward	Mitigation education is part of our brochures. Need to create a presentation calendar for the Board of Commissioners. This action includes pre-event preparedness outreach.

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Action #	Action Description	Hazard(s) Addressed	Goal & Objective Addressed	Priority	Mitigation Category	Lead Agency / Department	Potential Funding Source	Implementation Timeline	2024 Status	2024 Implementation Status Comments
KDH35	Keep Storm Drains Open Education Campaign	Flooding, Hurricane & Coastal Hazards	1.1	High	Public Education & Awareness	Planning and Public Services	General Fund	1-3 Years	New	
KDH36	Wildfire Education Program	Wildfire	1.1	Medium	Public Education & Awareness	Fire Department	General Fund	3-5 years	New	