

Hurricane Matthew Resilient Redevelopment Plan

Currituck County



May 2017

Version 1.2

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Change Log

Version	Date	Summary of Changes
1.1	6/15/17	Minor Revisions
1.2	8/25/17	Labor and unemployment data updated

Executive Summary

In October 2016, Hurricane Matthew caused widespread destruction in the Caribbean and up the Eastern Seaboard of the United States. In North Carolina, at least 25 people lost their lives, and 100,000 homes, businesses, and government buildings sustained damage estimated at \$4.8 billion.¹ At the storm's peak, 3,744 individuals fled to 109 shelters across the region. More than 800,000 households lost power and 635 roads were closed, including the major east-west and north-south corridors.

In December 2016, the North Carolina General Assembly established the North Carolina Resilient Redevelopment Planning (NCRRP) initiative as part of the 2016 Disaster Recovery Act (*Session Law 2016-124*). The purpose of the program is to provide a roadmap for community rebuilding and revitalization assistance for the communities that were damaged by the hurricane. The program empowers communities to prepare locally driven recovery plans to identify redevelopment strategies, innovative reconstruction projects, and other needed actions to allow each community not only to survive but also to thrive in an era when natural hazards are increasing in severity and frequency.

The NCRRP consists of planning and implementation phases and is managed through North Carolina Emergency Management.

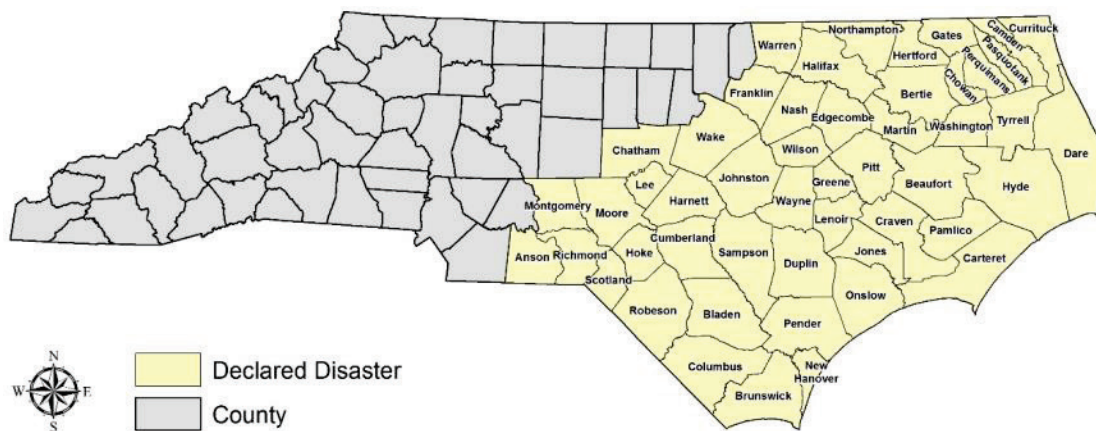


Figure 1. NCRRP Counties

This document is a snapshot of the current needs of the County regarding holistic recovery and redevelopment. The plan will evolve as the county analyzes the risk to its assets, identifies needs and opportunities, determines the potential costs and benefits of projects, and prioritizes projects. As projects are more fully defined, the potential impact on neighboring communities and the region may lead to modifications.

¹ State of North Carolina Supplemental Request for Federal Assistance Hurricane Matthew Recovery, <https://governor-new.s3.amazonaws.com/s3fs-public/documents/files/Hurricane%20Matthew%20Relief--2017%20Federal%20Request%20%28002%29.pdf>.

After multiple public meetings, Currituck County has identified 16 projects in four pillars: Housing, Economic Development, Infrastructure, and Environment. Details of these projects can be found in Section 4 of this plan.

Pillar	Project/Action Count
Housing	3
Economic Development	3
Infrastructure	6
Environment	4
Grand Total	16

Table 1. Currituck County Summary of Projects by Pillar

Implementation of the proposed projects and actions described in this plan is subject to applicable federal, state, and local laws and regulations. Proposed projects or actions may be eligible for state or federal funding, or could be accomplished with municipal, nonprofit, or private investments. However, inclusion of a project or action in this plan does not guarantee that it will be eligible for recovery funding.



1. Background

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Summary of Hurricane Matthew Storm Damage

Hurricane Matthew was an extraordinarily severe and sustained event that brought record-level flooding to many areas in eastern North Carolina’s coastal plain, sound, and coastal communities. Hurricane Matthew hit North Carolina on October 8, 2016, as a Category 1 storm. Communities were devastated by this slow-moving storm primarily by widespread rainfall. During a 36-hour period, up to 18 inches of heavy rainfall inundated areas in central and eastern North Carolina.

Riverine flooding began several days after Hurricane Matthew passed and lasted for more than 2 weeks. New rainfall records were set in 17 counties in the Tar, Cape Fear, Cashie, Lumber, and Neuse River watersheds. Entire towns were flooded as water levels throughout eastern North Carolina crested well beyond previously seen stages.

During the peak of the hurricane, 800,000 households lost power and 635 roads were closed, including a section of I-40 West in Johnston County that was closed for 7 days, and sections of I-95 North and South in Robeson and Cumberland Counties that were closed for 10 days.

Approximately 88,000 homes were damaged and 4,424 were completely destroyed. Losses totaled more than \$967 million, representing an economic loss as high as 68% of the damages, or \$659 million, not expected to be covered by insurance or FEMA assistance.

North Carolina Governor McCrory requested FEMA assistance on October 9, 2016, and FEMA subsequently declared a major disaster (DR-4285) for North Carolina on October 10, 2016, for 48 counties encompassing approximately 325 cities, towns, townships, and villages.

Preliminary estimates indicate more than 30,000 businesses suffered physical or economic damage, and 400,000 employees were affected as a result. Hurricane Matthew also had a significant impact on the agriculture and agribusiness economy in eastern North Carolina. The nearly 33,000 agricultural workers and 5,000 agricultural-support workers hit by the storm account for more than half of the state’s agriculture and agriculture-support workforce.

Initial economic analysis of the impacts of crop and livestock losses caused by Hurricane Matthew estimated the loss of more than 1,200 jobs and roughly \$10 million in state and local income and sales tax revenue.²

State/Legislative Response

North Carolina’s response to Hurricane Matthew included 2,300 swift-water rescues using 79 boats and more than 90 air rescues. North Carolina also deployed over 1,000 National Guard and State Highway Patrol to assist with rescue and sheltering missions. There were 3,744 individuals transported to 109 shelters across central and eastern North Carolina during the storm’s peak.

FEMA’s disaster declaration made 50 counties eligible for FEMA assistance, 45 of which are eligible for Individual Assistance and Public Assistance and 5 of which are eligible for Public Assistance only.

- There were 81,832 individuals registered for FEMA/state assistance.

² Governor McCrory’s Request for Federal Assistance for Hurricane Matthew Recovery, November 14, 2016

- Federal/state financial assistance in the amount of \$92.5 million was approved to help flood survivors recover.
- Small Business Administration (SBA) loans approved for individuals after Hurricane Matthew totaled \$65.6 million.
- SBA loans approved for businesses after Hurricane Matthew totaled \$23.2 million.

After the immediate response period, North Carolina Governor McCrory and the North Carolina General Assembly took the steps summarized below to obtain and allocate long-term funding for Hurricane Matthew.

November 1: The Hurricane Matthew Recovery Committee is established. Preliminary damage assessments are completed, and the State Emergency Response Task Force continues to administer programs and identify needs unmet by existing federal programs.

November 14: Governor McCrory formally submits North Carolina’s request for supplemental federal disaster assistance to the delegation as Congress returns to work.

Late November/Early December: Congress appropriates supplemental disaster assistance for North Carolina. After the supplemental federal disaster recovery assistance package is received, Governor McCrory submits a supplemental state disaster assistance package (House Bill 2) recommendation to the General Assembly and calls a special session. Governor McCrory then signs the Hurricane Matthew Recovery Act to fund disaster recovery efforts.

This supplemental federal assistance was to focus on housing, infrastructure, economic development, and the environment. These four pillars were to be funded through the following programs and agencies: The U.S. Department of Housing and Urban Development’s Community Development Block Grant–Disaster Recovery (CDBG-DR) program, Army Corps of Engineers Operations and Maintenance, the FEMA National Dam Safety Program, the Federal Highway Administration’s Emergency Highway Funding, and the U.S. Department of Agriculture’s Emergency Conservation and Watershed Protection programs.

Resilient Redevelopment Planning

The purpose of the NCRRP initiative is to provide a roadmap for communities in eastern North Carolina to rebuild and revitalize after being damaged by Hurricane Matthew. The program empowers communities to prepare locally driven, resilient redevelopment plans to identify redevelopment strategies, innovative reconstruction projects, and other actions to allow each community not only to survive, but also to thrive in an era when natural hazards are increasing in severity and frequency.

The NCRRP initiative employs a holistic approach to planning that includes four pillars: housing, infrastructure, economic development, and the environment. Redevelopment strategies and reconstruction projects for each of the four pillars is included in each plan.

The NCRRP initiative consists of planning and implementation phases and is managed through North Carolina Emergency Management (NCEM).

Scope of the Plan

This document is a snapshot of the County’s current needs for achieving holistic recovery and redevelopment. The plan will evolve as the County analyzes the risk to its assets, identifies needs and opportunities, determines

the potential costs and benefits of projects, and prioritizes the projects. As projects are more fully defined, the potential impact on neighboring communities and the region may lead to modifications.

Planning objectives are to (1) develop strategic, resilient redevelopment plans and actions, and (2) to define any unmet funding needed to implement such actions after taking into account other funding sources.

The resulting resilient redevelopment plans will be the foundation for any supplemental funding received through Congress, the North Carolina General Assembly, and other funding sources. These plans will also be the basis for the state's Recovery Action Plan, which is required by the U.S. Department of Housing and Urban Development before the state can expend funds received from the CDBG-DR program.

Local Participation and Public Engagement

Stakeholder engagement and public involvement was an essential component of the NCRRP initiative. Four rounds of discovery, analysis, collaboration, and interaction were held with each affected county. Each meeting had two components: an in-depth working session with county officials, subject matter experts, and planners from the affected counties and municipalities; and a public open house. The purpose of each meeting was as follows:

Meeting 1 – Initiated the planning process and validated the existing data pertaining to damage and impacts.

Meeting 2 – NCEM presented draft documentation of resilient redevelopment strategies and received feedback from community leaders and the public.

Meeting 3 – NCEM presented refined resilient redevelopment strategies based on feedback from Meeting 2 and received additional feedback.

Meeting 4 – NCEM presented actions developed during the course of the planning process and allowed the county to rank actions; apply High, Medium, or Low Prioritization; and approve inclusion of the actions in the final plan.

Each of the 50 counties that were declared a major disaster by the President of the United States as a result of Hurricane Matthew under the Stafford Act (P.L. 93-288) participated in the resilient redevelopment planning process. Each municipality in those counties, as well as the five economic development regions that sustained damage from Hurricane Matthew, were also invited to participate. The counties impacted by the storm cover the eastern half of North Carolina and occupy parts of the piedmont, sand hills, and coastal areas of the state.

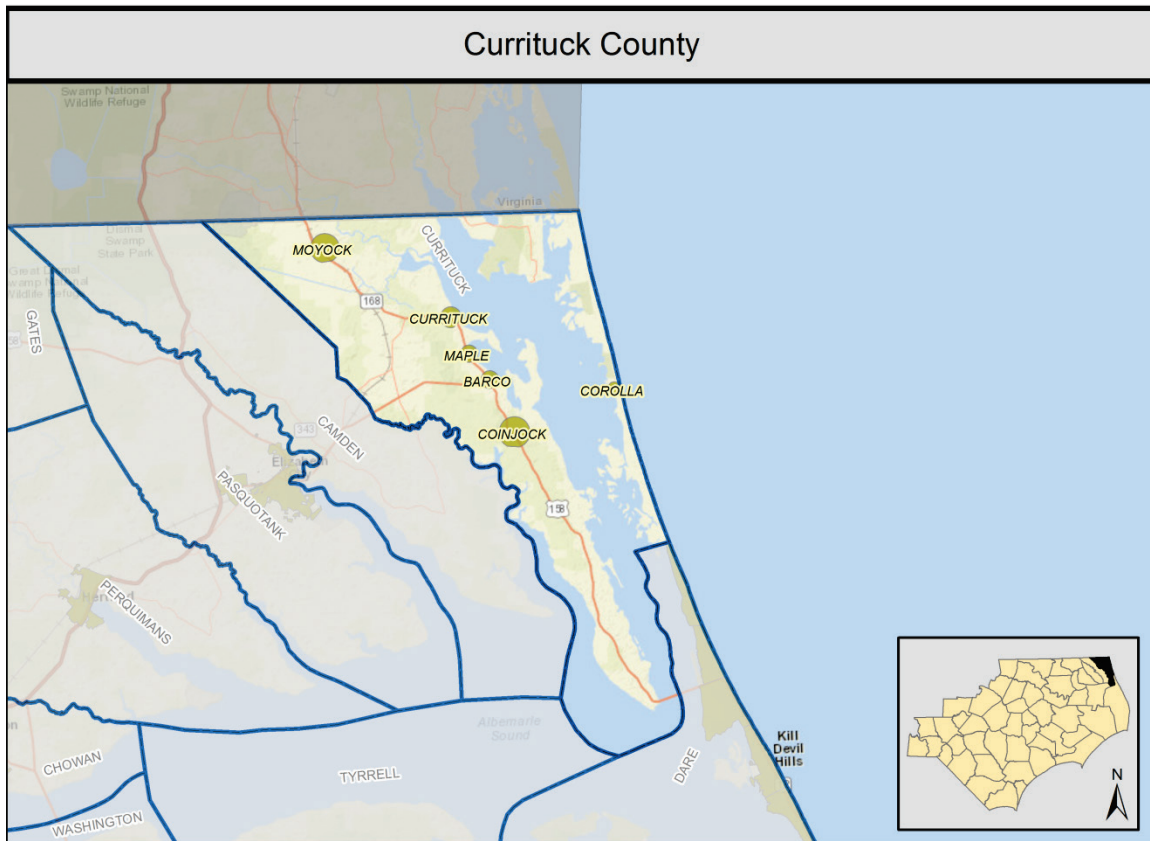


Figure 2. Currituck County and Neighboring Counties

Data, Assumptions, and Methodologies

NCEM has assembled a wealth of data, resources, and technical expertise from state agencies, the private sector, and the University of North Carolina system to support the development of innovative best practice strategies.

Implementation of the proposed projects and actions described in this plan is subject to applicable federal, state, and local laws and regulations. Inclusion of a project or action in this plan does not guarantee that it will be eligible for recovery funding. However, proposed projects or actions may be eligible for state or federal funding or could be accomplished with municipal, nonprofit, or private investment.

An aerial photograph showing a residential neighborhood severely affected by flooding. The water is a murky, brownish-yellow color, covering large areas of the landscape. Numerous houses with grey roofs are visible, some partially submerged. A network of roads crisscrosses the area, with some sections completely underwater. Large green trees are scattered throughout, many of which are isolated in the floodwater. The overall scene depicts a significant natural disaster impact on a community.

2. County Profile

2. County Profile

Currituck County is located in northeastern North Carolina and is bordered by Virginia to the north, the Atlantic Ocean to the east, Dare County and the Albemarle Sound to the south, and Camden County to the west. The county includes approximately 260 square miles of land and is comprised of three separate areas:

- Mainland Currituck County
- Currituck Outer Banks
- Knotts Island

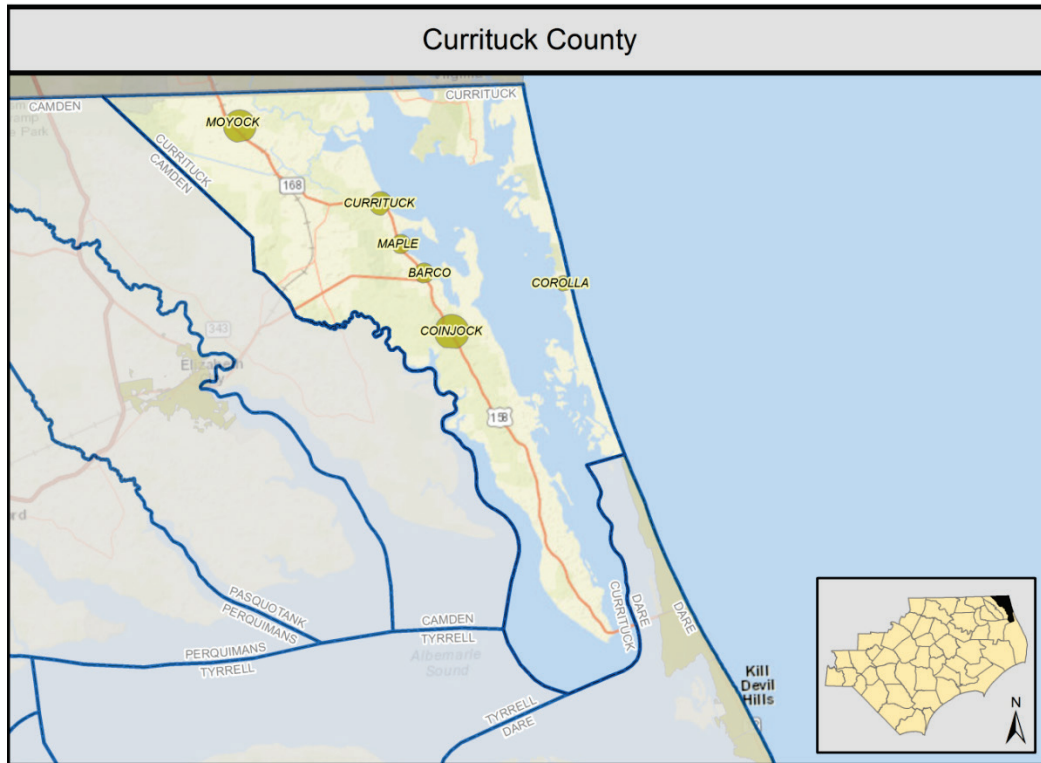


Figure 3. Currituck Base Map

The mainland area is a peninsula bordered by Virginia to the north, Currituck Sound to the east, and Camden County and the North River to the west. It includes the two census-designated places in the county, Moyock and Coinjock.

The Currituck Outer Banks represent two distinct areas. One is the highly developed area of Corolla south to the Dare County line. Carova Beach, or the “off-road” area north of Corolla to the Virginia state line, represents the second area. Carova Beach is a designated Coastal Barrier Resources Act (COBRA) zone and is therefore ineligible for federal grants and programs.

Knotts Island is located in the north center of the county. It is separated from mainland Currituck County by the North Landing River and from the Outer Banks by Knotts Island Bay. It is accessed by boat from the mainland and Outer Banks and by car from Virginia.

Due to its unique geography, the county maintains offices in both the mainland and Outer Banks areas of the county. This section provides a profile of housing, economics, infrastructure, environment, and administration within Currituck County.

Demographic Profile

Demographics for Currituck County and census-designated places within the county are summarized and compared to statewide averages in this profile. The demographic data is from the 2000 Census, 2010 Census, and 2011-2015 American Community Survey five-year estimates. Currituck County is part of the Norfolk-Virginia Beach-Newport News Metropolitan Statistical Area (MSA). In 2010, the MSA had a total population of 1,626,972.

Population

Currituck County has a population of 24,492. The two census-designated places have populations of 235 for Coinjock and 3,456 for Moyock.³

Population Change (2000 to 2010)

The Currituck County population grew approximately 30 percent between the 2000 and 2010 Census. In 2000 the population was 18,190, and in 2010 it was 23,547. In comparison, North Carolina grew by 19 percent from 8,049,313 people in 2000 to 9,535,483 in 2010.⁴

Age

The median age in Currituck County is 42, which is the same for North Carolina. Within Currituck County, the median age in Coinjock and Moyock is lower at 26 and 39, respectively.³

Race and Ethnicity

Currituck County is mostly White (90 percent), with smaller populations of African Americans (6 percent) and those identifying as Two or More Races (2 percent). American Indian and Alaska Native, Asian, and other races comprise the remaining 2 percent. In comparison, North Carolina is 70 percent White, 22 percent African American, 1 percent American Indian and Alaska Native, 3 percent Asian, less than 1 percent Native Hawaiian/Pacific Islander, 3 percent Some Other Race, and 2 percent Two or More Races.

Within Currituck County, Coinjock and Moyock are also predominantly White with small populations of African Americans, American Indian and Alaska Native, and other races.

The Latino population in Currituck County is 3.5 percent compared to 9 percent for North Carolina. Moyock has a larger Latino population (12 percent) while Coinjock does not have Latino populations according to the census data.

Geography	White	Black or African American	American Indian and Alaska Native Alone	Asian	Native Hawaiian/Pacific Islander	Some Other Race	Two or More Races	Total Non-White
Coinjock	97.4%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	2.6%
Moyock	90.7%	4.0%	2.2%	0.0%	0.0%	0.4%	2.7%	9.3%
Currituck County	90.3%	6.2%	0.6%	0.4%	0.0%	0.4%	2.0%	9.7%
North Carolina	69.5%	21.5%	1.2%	2.5%	0.1%	3.0%	2.4%	30.5%

Table 2. Currituck County Race and Ethnicity

³ Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B01001, Sex by Age

⁴ Source: Minnesota Population Center. National Historical Geographic Information System: Version 11.0 [Database]. Minneapolis: University of Minnesota. 2016. <http://doi.org/10.18128/D050.V11.0> Census 2000/Census 2010 Time Series Tables Geographically Standardized

Limited English Proficiency

Limited English Proficiency (LEP) is defined as populations 18 years or older that speak English less than very well. In Currituck County, most of individuals identified as LEP speak Spanish while others speak Indo-Euro, Asian/Pacific, or other languages. Similarly, the primary language group for LEP individuals in North Carolina is Spanish. Within Currituck County, the Moyock area has the largest Spanish-speaking LEP population while Coinjock does not have a LEP population according to census data.

Poverty

In Currituck County, 10 percent of the population is below the poverty level compared to 17 percent of the North Carolina population. This is even lower in Coinjock and Moyock, with 8.5 percent and 5 percent of their populations, respectively, below the poverty level.

Low and Moderate Income Individuals

In Currituck County, 38.5 percent of the population is classified as low and moderate income (LMI) individuals based on the US Department of Housing and Urban Development's definition. This is similar to the 39 percent of the North Carolina population that is classified as LMI.⁵

Median Household Income

The median household income of the population 25 to 64 years old is \$65,000 in Currituck County and \$53,000 in North Carolina. Median household income was not available for Coinjock and Moyock.⁶

Zero Car Households⁷

In Currituck County, 3 percent of households do not have a vehicle available compared to 7 percent of North Carolina households. Within Currituck County, Coinjock has the highest percentage of households without access to a vehicle, 18.5 percent, while Moyock has the lowest percentage: 1 percent.

⁵ Source: US Department of Housing and Urban Development, Estimate of Low and Moderate Income Individuals, <https://www.hudexchange.info/programs/acs-low-mod-summary-data/acs-low-mod-summary-data-block-groups-places/>

⁶ Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B19094, Median Household Income in the Past 12 Months.

⁷ Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B25044, Tenure by Vehicles Available.

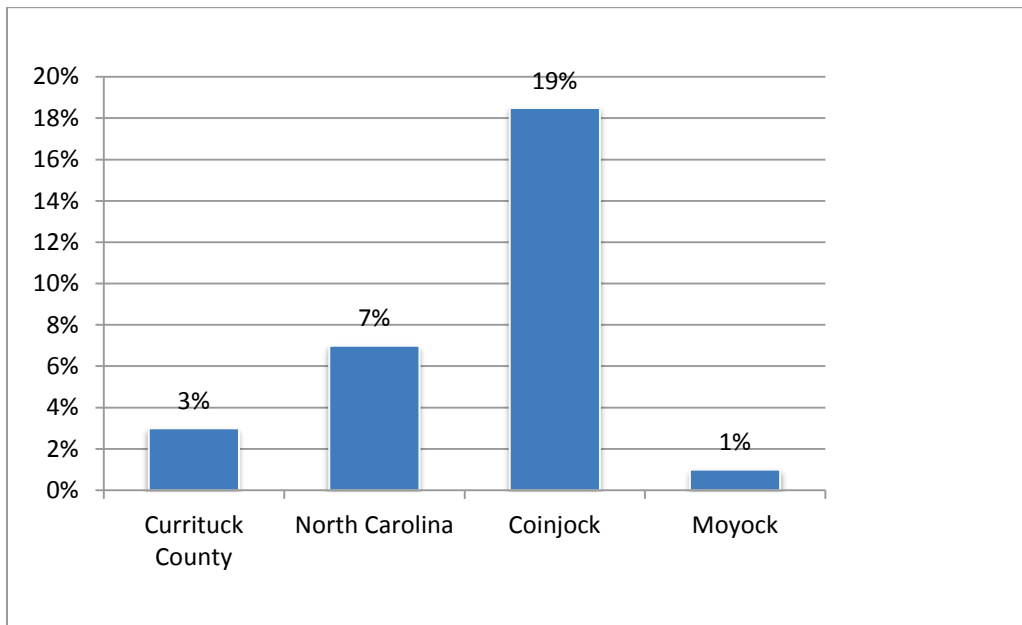


Figure 4. Zero Car Households by Percentage

Commuting: Travel Time to Work, Means of Transportation⁸

The majority of Currituck County residents commute alone to work by vehicle, 85 percent, which is slightly higher than the North Carolina average of 81 percent. Within Currituck County, Coinjock has the largest percentage of commuters commuting alone, 100 percent, while in Moyock 85 percent of commuters commute alone, 11 percent carpool, and 1 percent use public transportation.

The mean commute time to work for Currituck County residents is 35.8 minutes. In comparison, the North Carolina mean commute time is 24.7 minutes. Within Currituck County, more than 42 percent of commuters travel 30 to 60 minutes to work, while about 20 percent travel more than 60 minutes.

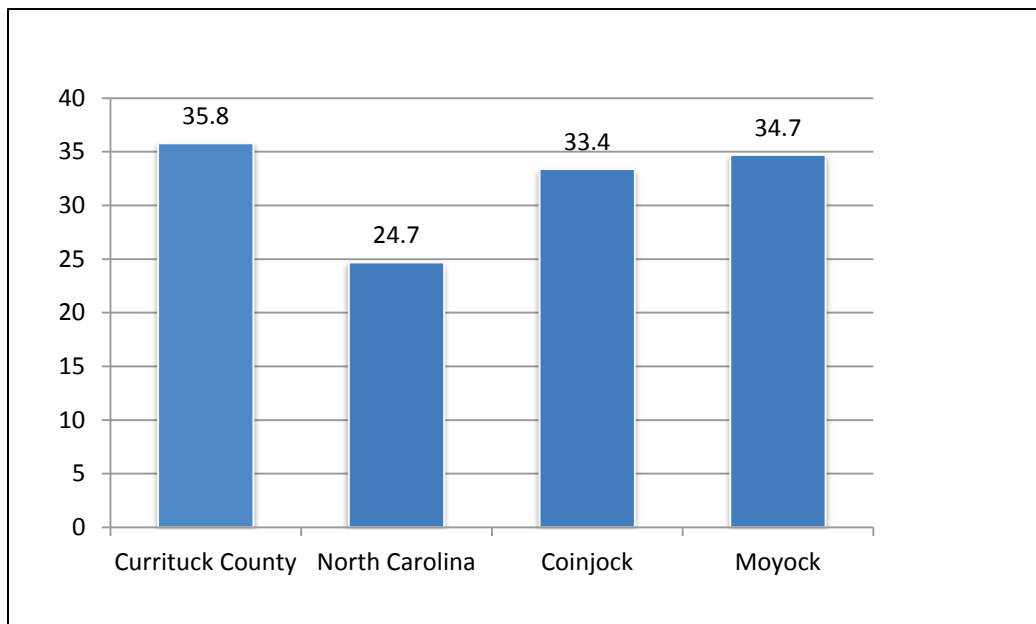


Figure 5. Mean Commute Time to Work in Minutes

⁸ Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B08301, "Means of Transportation to Work" and Table GCT0801, "Mean Travel Time to Work of Workers 16 Years and Over Who Did Not Work at Home (Minutes)".

Housing Profile⁹

Currituck County has over 14,800 housing units, 84 percent of which are single-family homes, 3 percent multi-family units, and 13 percent manufactured housing.

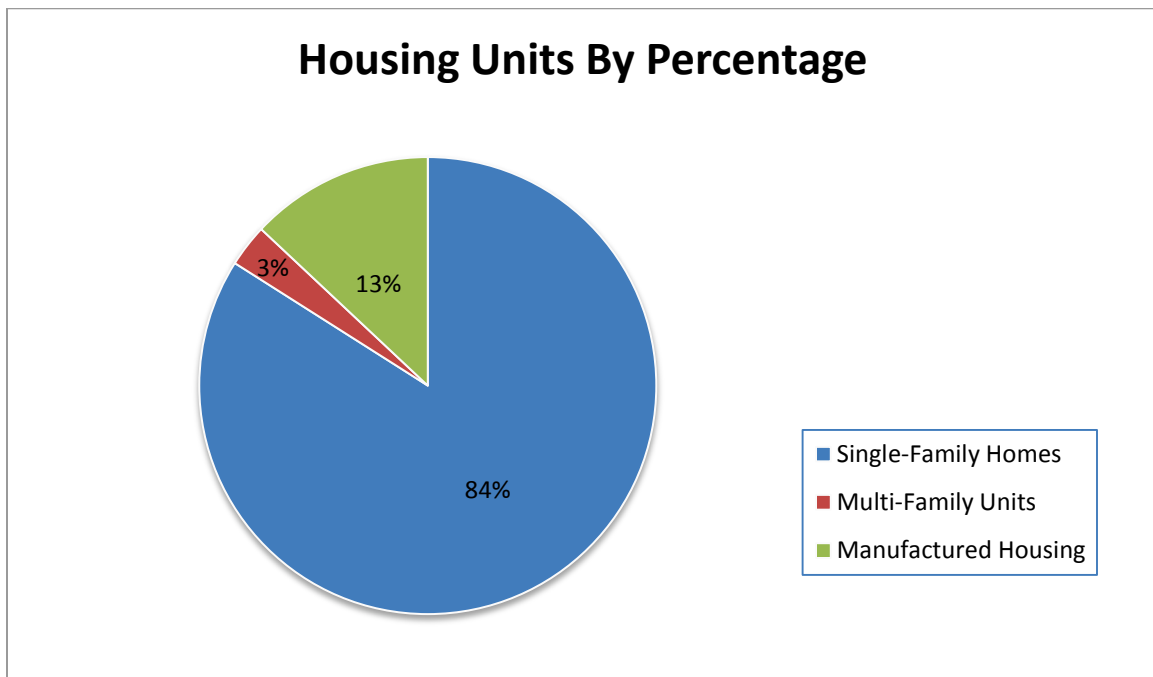


Figure 6. Housing Units By Percentage

In Currituck County 38 percent of housing units were reported as vacant, which may be due to the high number of vacation homes in the county. In comparison, 14.5 percent of housing units are vacant in North Carolina. Within Currituck County, Moyock has a much lower percentage of vacant housing units at 7 percent, while in Coinjock, 38 percent of units are vacant.

Of the occupied housing units, 81 percent are owner-occupied compared to 65 percent in North Carolina; 19 percent are renter-occupied compared to 35 percent in North Carolina. In Moyock, the percentages are the same as for the county; however, in Coinjock, approximately 50 percent of units are owner occupied and 50 percent are renter occupied.

The median housing value in Currituck County is \$229,000. In comparison, the median housing value in North Carolina is \$140,000. Within Currituck County, Moyock has a highest median housing value (\$260,300) than Coinjock (\$183,800).

According to the National Housing Preservation Database, Currituck County has 51 affordable housing units.

⁹ Sources: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B25002 Occupancy Status; Table B25003 Tenure; Table B25024 Units in Structure; Table B25077 Median Value (Dollars) - National Housing Preservation Database.

Economic/Business Profile

Currituck County has large numbers of jobs in retail trade, real estate and rental and leasing, recreation, and accommodation and food services, indicative of the importance of tourism to the county's economy.¹⁰

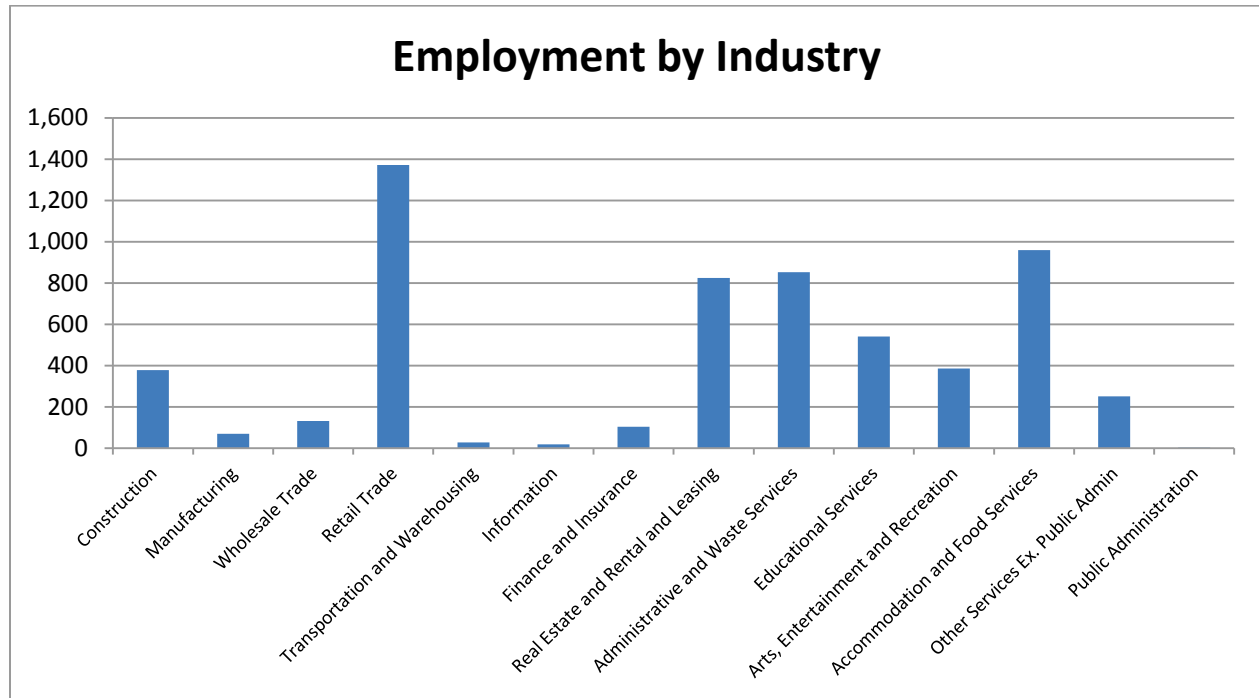


Figure 7. Employment by Industry

The Currituck County mainland is heavily influenced by the metropolitan areas of southeastern Virginia to the north and Dare County to the south. Since development in the northern portion of the mainland in the Moyock area is strongly affected by the economic hubs of neighboring Virginia, new residential growth in this area tends to be of a “bedroom community” nature. Subsequently, commercial uses in this area tend to be residential support services. As a result of continued residential growth, additional commercially zoned properties are developing in this area.

On the mainland, there is a strong economic interest in capturing tourist dollars from travelers en route to the Outer Banks beaches. As a result, commercial uses in the lower portion of the mainland tend to involve retail sales and warehousing adjacent to NC 158 related to the support of the Outer Banks resort/retirement economy. Commercial uses targeting boaters are also found along the Atlantic Intracoastal Waterway in the Coinjock area. Development is clustered in several small communities including Currituck, Maple and Barco.

The Outer Banks is a popular destination for vacation travelers, with vacation home rentals, hotels, campgrounds, parks, shopping, restaurants, and golf courses.

Agriculture continues to be an important component of the county's economy, with major revenue crops being corn, soybeans, wheat, and cotton.

¹⁰ Source: AccessNC – North Carolina Department of Commerce, April 2017:
<http://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/countyProfile/NC/37065.pdf>

Labor Force

According to the local area unemployment statistics (LAUS) from the Labor and Economic Analysis Division (LEAD) for the unadjusted data for all periods in 2016, the civilian labor force population of Currituck County is 12,941.¹¹ Both Coinjock and Moyock have population in the labor force similar to the 66 percent in the County (60 percent and 70 percent, respectively).¹²

The civilian unemployment rate in Currituck County is 5.2 percent. In comparison, the North Carolina civilian unemployment rate is 5.1 percent.¹¹ Coinjock and Moyock have very low unemployment rates at 0 percent and 2 percent, respectively.¹²

Major Employers

The top ten employers in Currituck County¹³ represent the education and health services, public administration, professional and business services, and trade, transportation, and utilities industries, and are listed in order of total employees.

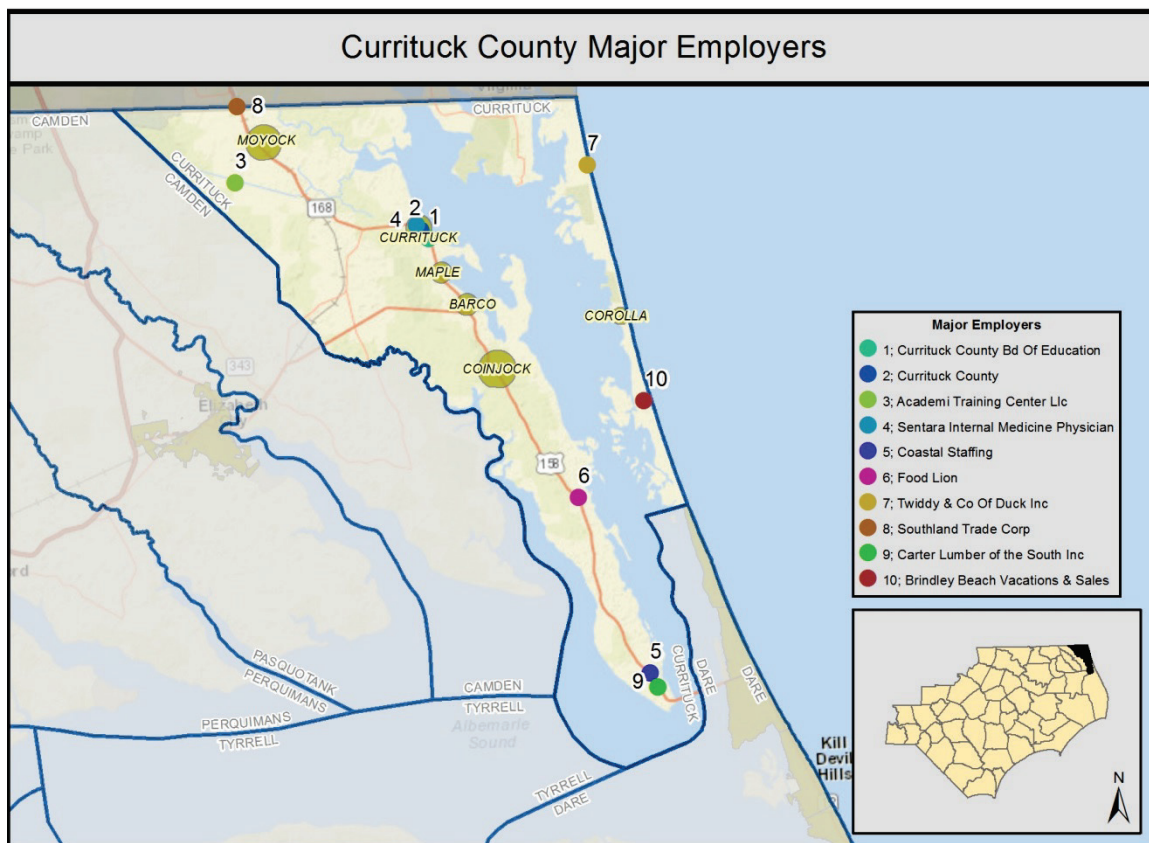


Figure 8. Major Employers by Number of Employees

11 Source: Civilian Population and Unemployment Rate - Labor and Economic Division (LEAD) of North Carolina Department of Commerce – Local Area Unemployment Statistics <http://d4.nccommerce.com/LausSelection.aspx>

12 Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B23025 Employment Status For The Population 16 Years And Over

13 Source: NC Department of Commerce

Economic Development¹⁴

There are three industrial parks located in the mainland of Currituck County. The Moyock Industrial Park is located just south of Moyock on NC 168. The Harbinger Industrial Park is located in the southern portion. Another industrial park is operated by Currituck County at the Currituck County Regional Airport site as part of its Maple Complex. The Maple Complex is made up of approximately 400 acres and houses the airport, the Maple Industrial Park, a community park, and county government facilities.

The Currituck County Economic Development Department is charged with strengthening and diversifying the local economy while encouraging job growth. The Economic Development Department supports expansion of existing businesses, recruits new industries, and promotes tourism-related business expansion in partnership with the county's Travel and Tourism Department.

Visit North Carolina, a unit of the public-private organization contracted to lead North Carolina's marketing programs, estimates that in 2015, Currituck County had \$147 million in tourism expenditures, resulting in \$6.8 million in local tax receipts.

Infrastructure Profile

Transportation, health, education, water, and power infrastructure are summarized for Currituck County in the sections that follow.

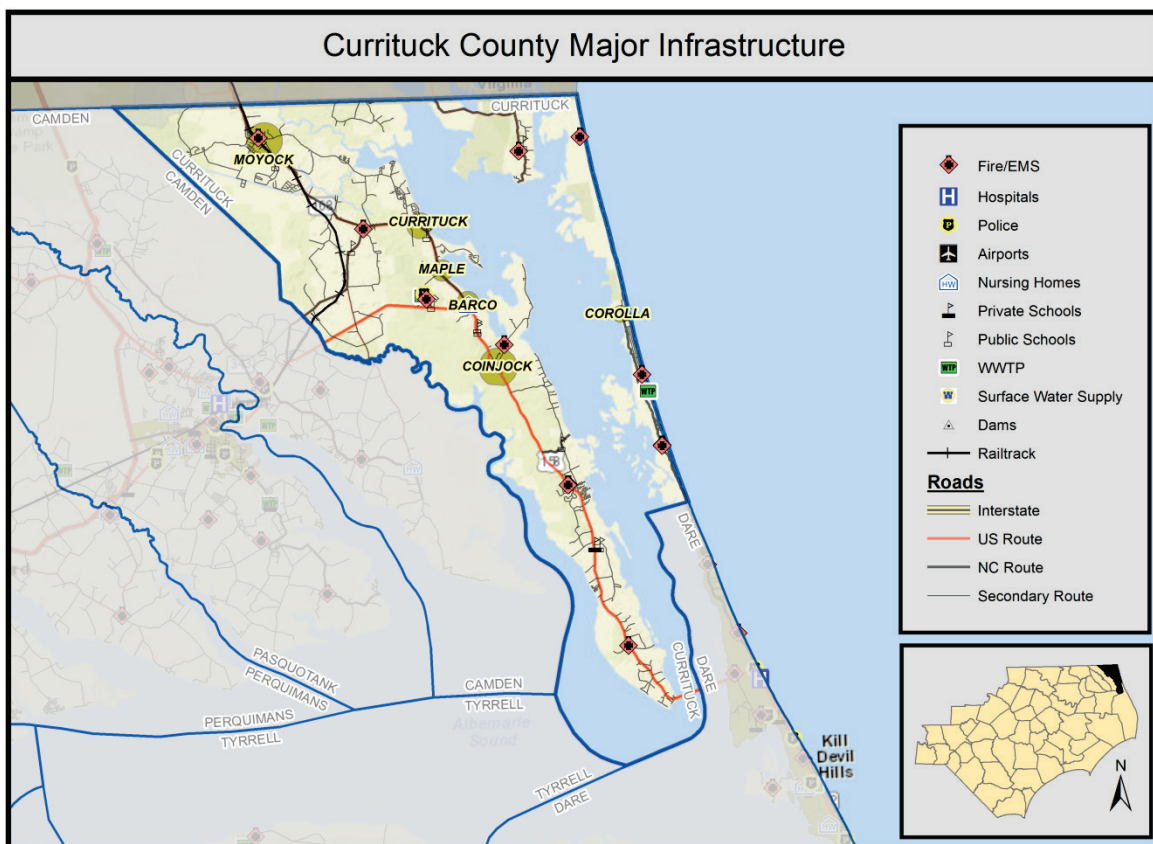


Figure 9. Currituck County Major Infrastructure

¹⁴ Sources: Currituck County Economic Development Department; Currituck County 2006 Land Use Plan; Visit North Carolina

Transportation

Currituck County is connected to the region by US 158 and US 168. US 168 runs from the Virginia line south to Barco. US 158 enters Currituck County from Camden County from the west before turning south at Barco to provide access to the southern end of the Currituck County mainland and to the Outer Banks via the Knapp Bridge. NC 12 provides access through the Dare County towns of Southern Shores and Duck north to Currituck's Outer Banks community of Corolla. Traffic on these facilities is especially heavy during summer weekends as tourists travel to and from the Outer Banks.

The Corova community is accessed via unpaved, sand roads only. There is no road connection between Virginia and the Currituck Outer Banks.

Knotts Island in north-central Currituck County is accessible by road from Virginia or by ferry or private boat from the Currituck mainland or Outer Banks. The ferry terminal is located near the Currituck County offices in the community of Currituck.

The Currituck County Regional Airport is a publicly owned general aviation airport located on US 158 near the Camden/Currituck county line. The airport includes a terminal building and 5,500-foot runway.

Health

Currituck County provides pre-hospital emergency medical care and transportation through their Fire-Emergency Medical Services Department. The Outer Banks Hospital Urgent Care Center is located near the intersection of US 158 and NC 12 on the Outer Banks side of the Knapp Bridge in Dare County. The closest hospitals are Sentara Norfolk General Hospital in Virginia and Sentara Albemarle Medical Center in Elizabeth City.

Education¹⁵

The Currituck County School System serves approximately 3,850 students in ten schools. This includes six elementary schools, two middle schools, an early college high school, and a traditional high school. All of the schools are located on the mainland area of the county, with the exception of Knotts Island Elementary, which is located on Knotts Island. The J.P. Knapp Early College High School is operated in coordination with the College of the Albemarle. The College of the Albemarle is part of the North Carolina community college system and has four campuses in northeastern North Carolina, including the Regional Aviation and Technical Training Center located adjacent to the Currituck County Regional Airport.

Water¹⁶

Currituck County's water supply system is composed of 16 individual facilities with three of these being county-owned. Currituck County operates three water systems to serve different areas of the county: the Mainland Water System, Southern Outer Banks Water System, and Ocean Sands Water and Sewer District. The other systems are private entities providing service to individual developments or neighborhoods.

The Mainland Water System provides water to approximately 5,300 customers in Moyock and along US 158 south to Point Harbor. Groundwater is drawn from 28 wells. The water plant treatment capacity is 2.9 million gallons per day, with a storage capacity of 1.9 million gallons. There are five elevated storage tanks: Moyock

¹⁵ Sources: Currituck County School System and College of the Albemarle

¹⁶ Sources: NC Division of Water Resources, Local Water Supply Plans; Currituck County Water Department; Currituck County 2006 Land Use Plan

(100,000 gallons), High Cotton (500,000 gallons), Currituck (300,000 gallons), Grandy (100,000 gallons), and Currituck Industrial Park (300,000 gallons).

The Southern Outer Banks Water System (SOBWS) serves the potable water needs of more than 3,000 customers in several communities on the Currituck Outer Banks. The SOBWS treatment plant has a capacity of 2.1 million gallons per day (1.1 million gallons per day of conventional treatment and 1.0 million gallons per day of reverse osmosis treatment). The SOBWS owns and operates two shallow well fields and five deep wells (about 250 feet), which provide raw water that is treated through reverse osmosis. The SOBWS treatment plant has a 1.5 million gallon storage tank and one 150,000 gallon elevated tank in Ocean Sands.

The Ocean Sands Water and Sewer District (OSWSD) provides water and sewer service to approximately 1,000 properties in the Ocean Sands area of the Outer Banks. The OSWSD owns five water supply well fields located within the Ocean Sands development that withdraw groundwater from approximately 40 to 60 feet below ground. The wells yield a total of about 525,000 gallons per day, which is conveyed to the Southern Outer Banks Water Treatment Plant (part of SOBWS) and treated conventionally.

There are two small water systems on Knotts Island to serve the Anchor Christian Retreat and the Sandy Point Resort. Neither system is operated by Currituck County. The majority of Knotts Island is served by individual wells.

Wastewater

The majority of the county is served by individual on-site wastewater systems while a small percentage (less than 5 percent) of the population is served by community wastewater. There are no large central sewer systems in Currituck County. However, there are 9 large surface sewage treatment plants and 64 on-site wastewater treatment systems that serve individual developments on the mainland and in the southern section of the Outer Banks. There are no large surface sewage treatment plants in the northern portion of the Outer Banks or in Knotts Island.

Wastewater from Ocean Sands is treated at the Ocean Sands Wastewater Treatment Plant (WWTP), which is county-owned and privately operated. The Ocean Sands WWTP has a capacity of 500,000 gallons per day.

The county also operates several smaller, community wastewater districts, including the Newtown Road Wastewater Treatment District (15,000 gallons per day capacity), Moyock Commons Sewer District (40,000 gallons per day capacity), and Walnut Island Sewer District.

Much of the Currituck Outer Banks consists of Planned Unit Developments (PUDs) and subdivisions. Many of the PUDs in Corolla provide water and sewer service to residents and businesses, while residences in Carova Beach rely upon septic tanks.

Power

The majority of Currituck County is within the service area of Dominion NC Power, an operating unit of Dominion Resources. A small portion of the mainland is within the service area of Albemarle Electric Membership Corporation, a rural cooperative.

There is a solar farm located within Currituck County along NC 34 north of Shawboro. It has a net summer capacity of 20 megawatts.¹⁷

Environmental Profile

Water resources, natural areas, managed areas, biodiversity, wildlife habitat, and recreation are summarized for Currituck County in the sections that follow.

Water Resources

There are more than 180 square miles of water resources in Currituck County. Currituck County is bordered to the east by the Atlantic Ocean. Currituck Sound separates mainland and Outer Banks sections of Currituck County, and the North River separates Currituck and Camden counties. Other waterbodies in Currituck County include Northwest River, Tulls Creek, and Landing Creek.

Virtually all of the Outer Banks area is included in the 100-year flood hazard area. The majority of the western portion and areas along the eastern waterfront of Knotts Island are designated as flood hazard areas, and substantial portions of the upper and lower mainland are also included.

Wetlands are located throughout the county. Significant amounts of coastal wetlands are also located on the west side of Knotts Island, the Northwest River at Tulls Bay, along the Outer Banks side of Currituck Sound, and along the North River on the western side of the Currituck mainland. Non-coastal wetlands are located on the Outer Banks between coastal wetlands and uplands along Currituck Sound, in the southwestern portion of Knotts Island, and on the mainland along the Northwest River, the western county boundary, and on either side of US 158 between the communities of Maple and Grandy.

Other restrictions on water resources in Currituck County include designated anadromous fish spawning areas and Primary Nursery Areas. Anadromous fish spawning areas are those tributary streams where certain species of ocean fish spawn. In Currituck County, anadromous fish spawning areas are in the North River, Intracoastal Waterway, Tulls Creek, and other creeks on the mainland. Primary Nursery Areas, defined by NC Division of Marine Fisheries as growing areas for juvenile finfish and shellfish of economic importance, include more than 1,100 acres in Deep Creek, Lutz Creek, Tulls Creek, and Tulls Bay on the mainland.¹⁸

Natural and Managed Areas

Significant areas in Currituck County on the mainland, Knotts Island, and the Outer Banks are in state and federal ownership.¹⁸ These areas are considered protected lands and are unavailable for development. On the mainland, the NC Wildlife Resources Commission (WRC) North River Game Land, which extends into Camden County, is located in the southwestern portion of Currituck County. The NC WRC's Northwest River Marsh Game Land (about 2,850 acres) is located in the northern part of the mainland. Other private conservation lands and easements are held by the NC Coastal Land Trust and the Conservation Fund.

Mackay Island National Wildlife Refuge (NWR) makes up approximately 7,000 acres, or 70 percent, of Knotts Island. The NWR is comprises the western portion of the island, adjacent to Currituck Sound and North Landing River.

¹⁷ Sources: US Department of Energy, US Energy Mapping System; Currituck County

¹⁸ Sources: NC Natural Heritage Program; Currituck County 2006 Land Use Plan

On the Outer Banks, protected lands include the Currituck National Wildlife Refuge (about 3,700 acres), the North Carolina Coastal Management Currituck Estuarine Sanctuary (about 1,000 acres), and Pine Island Audubon Sanctuary.

There are also several other areas identify by the NC Natural Heritage Program as “Significant Natural Heritage Areas.” Although these sites are generally not protected, they are areas of significant natural diversity and quality. Significant Natural Heritage Areas in Currituck County include:

- Great Marsh on Klotts Island
- Currituck Banks / Swan Island Natural Area (Outer Banks)
- Currituck Banks Corolla Natural Area (Outer Banks)
- Pine Island / Currituck Club Natural Area (Outer Banks)

Other major Heritage Areas on the mainland include:

- the Green Sea in the northwestern tip of the County
- the area around Northwest River including the Northwest River Marsh Game Land, Nellie Bell Ponds Marsh and Cedar Swamp
- Gibbs Woods / Tull Bay Marshes
- Gibbs Point Forests and Marshes and Lower Tull Creek Woods and Marsh
- Buckskin Creek / Great Swamp and Indiantown Creek / North River Cypress Forest west of the community of Maple
- Church Island Marsh, Maple Swamp Gordonia Forest and North River / Deep Creek Marshes and Forest near Coinjock
- Mamie Marshes and Ponds and Harbinger Marshes on the southern tip of the mainland

Biodiversity and Wildlife Habitat

The NC Natural Heritage Program produces a biodiversity and wildlife habitat assessment for the state. According to this assessment, areas with the highest rating for biodiversity and wildlife habitat are in the Mackay Island National Wildlife Refuge, Currituck National Wildlife Refuge, and along Currituck Sound and North River. These areas rank between a 7 and 10, with 10 being the highest possible score.¹⁹

Parks and Recreation

The Currituck County Parks and Recreation Department maintains several parks and facilities in Currituck County:

- Carova Beach Park
- Currituck Community Center/YMCA
- Klotts Island Ruritan Park
- Maple Park/Maple Skate Park

¹⁹ Source: NC Natural Heritage Program

- Poyner’s Road Park
- Shingle Landing boating access
- Sound Park
- Veterans Memorial Park
- Walnut Island Park

These parks offer athletic fields, playgrounds, picnic shelters, and/or walking trails. Poyner’s Road Park, Shingle Landing, and Sound Park have boat ramps. The county also provides a variety of youth sports and senior programs.²⁰

In addition, Currituck County’s beaches and waterways attract recreational visitors. On the Outer Banks, the beaches and ocean are used by vacationers. In Currituck Sound and NC WRC game lands, boating and waterfowl hunting are prevalent.

Administrative Profile

The administrative capabilities of Currituck County are discussed in detail in Section 6 of the Albemarle Regional Hazard Mitigation Plan. The assessment evaluates the capabilities of the County to implement mitigation actions across the areas of administrative and technical capabilities, planning and regulatory capabilities, financial capabilities, educational and outreach capabilities and legal and political capabilities.

In terms of administrative capabilities, the County has many of the staff and the necessary plans, policies and procedures in place that are found in communities with “high” capabilities. Currituck County has emergency management, emergency services and planning departments with the capacities to assist in implementing the resilience strategies proposed in this plan. Some of the other indicators of capability for the County include the following: Comprehensive Land Use Plan, Zoning Ordinance, Subdivision Regulations, Floodplain Management Ordinance, Stormwater Management Plan. These plans, policies and procedures help ensure that new development in the County will be done in a responsible manner and in non-hazardous areas. In addition, the County participates in the NFIP Community Rating System as a Class 8 participant.

Federal grants and programs, including flood insurance, are not available for the Carova area, as this portion of the beach has been designated as a Coastal Barrier Resource Act (COBRA) zone.

²⁰ Sources: Currituck County Department of Travel and Tourism; Currituck County Parks and Recreation Department

An aerial photograph showing a residential neighborhood severely impacted by flooding. The water is a murky, brownish-yellow color, submerging large areas of the landscape. In the upper half of the image, a large body of water has inundated a wooded area, with only the tops of many trees visible. Below this, a residential street is shown with several houses. The yards and surrounding areas are completely underwater. The houses are mostly two-story structures with light-colored siding and dark roofs. Some houses appear to be partially submerged, with water reaching up to their first floors. The lower half of the image shows a dense forest of green trees, which appears to be less affected by the flooding, though some water is visible at the edges of the wooded area. The overall scene depicts significant property damage and displacement due to a storm event.

3. Storm Impact

3. Storm Impact

Rainfall Summary

Hurricane Matthew officially made landfall as a Category 1 storm southeast of McClellanville, South Carolina early on October 8, 2016. The track and speed of the storm resulted in nearly two days of heavy precipitation over much of North Carolina that caused major flooding in parts of the eastern Piedmont and Coastal Plain. The storm produced widespread rainfall of 3-8 inches in the central regions of North Carolina and 8 to more than 15 inches in parts of eastern North Carolina. A number of locations received all-time record, one-day rainfall amounts. Many locations in the Coastal Plain of North Carolina had received above normal rainfall in the month of September leading to wet antecedent conditions prior to Hurricane Matthew. Total rainfall depth for Currituck County is highlighted graphically in the figure below.

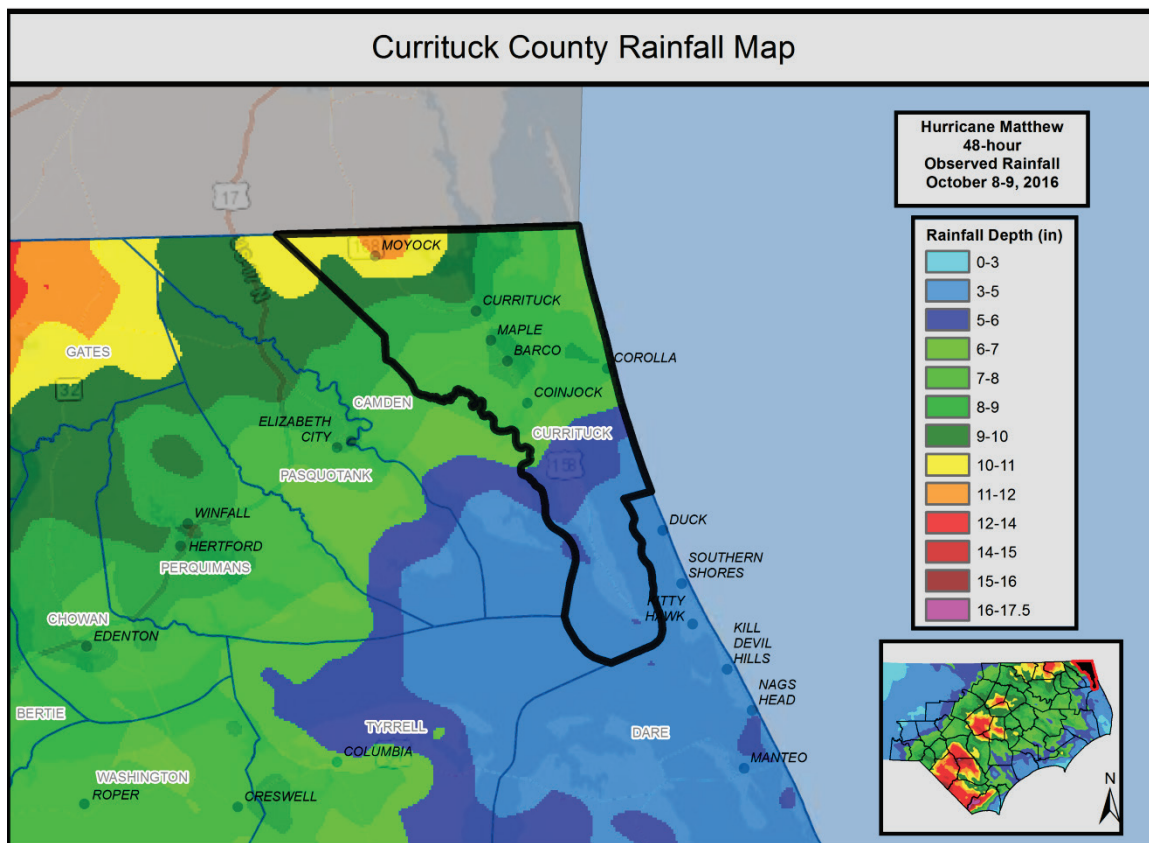


Figure 10. 48-hour Observed Rainfall Depth (October 8-9, 2016)

Details of impacts categorized under housing, economic, infrastructure, and environment are included in the following sub-sections.

Housing

According to Individual Assistance claims, there were 319 impacted houses in Currituck County as a result of Hurricane Matthew. In addition, there have been 353 claims filed through the National Flood Insurance Program (NFIP). It should be noted that additional claims from Hurricane Matthew may still be pending, so this number may not reflect the final claims data from the event. This also does not take into account other historic impacts to the county or other areas of concern for flooding that may not have occurred during this storm. It should also

be noted that there are more than 435 residences in the Corolla area of the Currituck County Outer Banks that are not eligible for Federal assistance; therefore, impacts to these homes are not included in these totals.

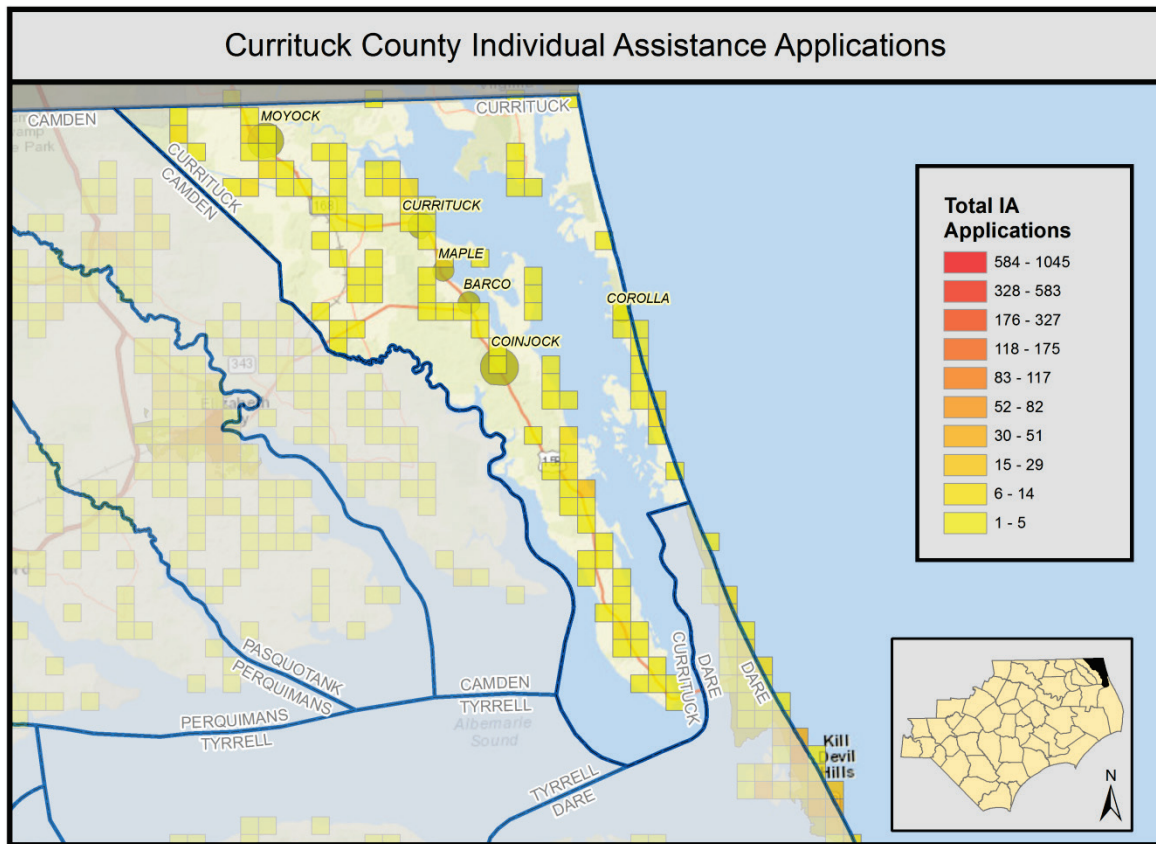


Figure 11. Currituck County IA Applications by Area

Approximately 285 homes on the Currituck County Outer Banks reported damage from Hurricane Matthew. Seven homes on Knotts Island were damaged. The remaining 380 claims are located on the Currituck County mainland. The bullets below summarize some of the other impacts to housing that occurred on the mainland area:

- Nine homes in northwestern corner of the County, off Northwest Backwoods Road.
- 10 homes along Moyock Run west of NC 168.
- 16 homes in the Eagle Creek subdivision.
- Eight homes in the Ranchland subdivision.
- Six homes in the Tulls Bay area.
- Approximately 40 homes in the vicinity of Tulls Creek Road and Baxter Estates.
- Six homes in Beechwood Shores.
- Eight homes on Bells Island
- 12 homes along Waterlily Road.
- 13 homes in the Aydelett community.

- Approximately 25 homes east of US 158 in the Walnut Island area.
- Other roads with multiple homes affected include:
 - Guinea Road
 - Poyners Road
 - Maple Road
 - Taylors Road
 - Simpson Road
 - Hampton Road
 - Narrow Shore Road
 - Poplar Branch Road
 - Grandy Road
 - Jarvisburg Road
 - South Bayview Road
 - Colonial Beach Road
 - Snows Lane
 - Acorn Lane

Numerous other properties scattered throughout the mainland area and along US 158 also experienced flooding.

Economics / Business / Jobs

Economic impacts to Currituck County from Hurricane Matthew were generally minor compared to the other categories (housing, infrastructure and ecosystem). The bullets below summarize some of the impacts to the economy/businesses/jobs that were identified from the event.

- **Small Business:** Approximately 60 applications have been submitted through the US Small Business Administration (SBA) Disaster Assistance loan program. Approximately half of these are on the Outer Banks, and the other half are scattered throughout the mainland area.
- **Tourism:** Many of the properties on the Currituck County Outer Banks are rental properties and businesses that serve the tourism industry. Damage to these properties, as well as lack of accessibility after the event, is a big economic impact for the county.
- **Agriculture:** County officials noted that agricultural fields in the northwestern part of the county were flooded.

Infrastructure

There have been no Public Assistance claims in Currituck County as a result of Hurricane Matthew. It should be noted that additional claims from Hurricane Matthew might still be pending, so this number may not reflect the

final claims data from the event. The bullets below summarize some of the impacts to infrastructure that were identified by local officials from the event.

- **Road/Bridge Flooding:** Major roadways, including NC 168, US 158, NC 34, and NC 12, in Currituck County were constructed along ridgelines and are generally not impacted by flooding. However, several other locations were impacted during Hurricane Matthew. Many of these locations have been historical hotspots in the county and are affected even during rainfall events that are not as extreme as hurricane/tropical storm events. For example:
 - On the mainland, Tulls Creek Road, Old Tulls Creek Road, and Rocky Top Road flooded.
 - Bells Island Road was flooded, severing access to approximately 200 homes. Roads on Bells Island also were inundated.
 - Waterlily Road was flooded, cutting off access to more than 150 residences and more than 100 mobile homes/campers.
 - NC 12 in Dare County was breeched, isolating the Currituck Outer Banks.
 - Private subdivision roads on the Outer Banks in several areas were flooded for up to 10 days.
 - County officials also noted that the Corova area, which is accessible only via sand roads, was isolated for a month following Hurricane Matthew.

The following roads were closed during and after Hurricane Matthew:

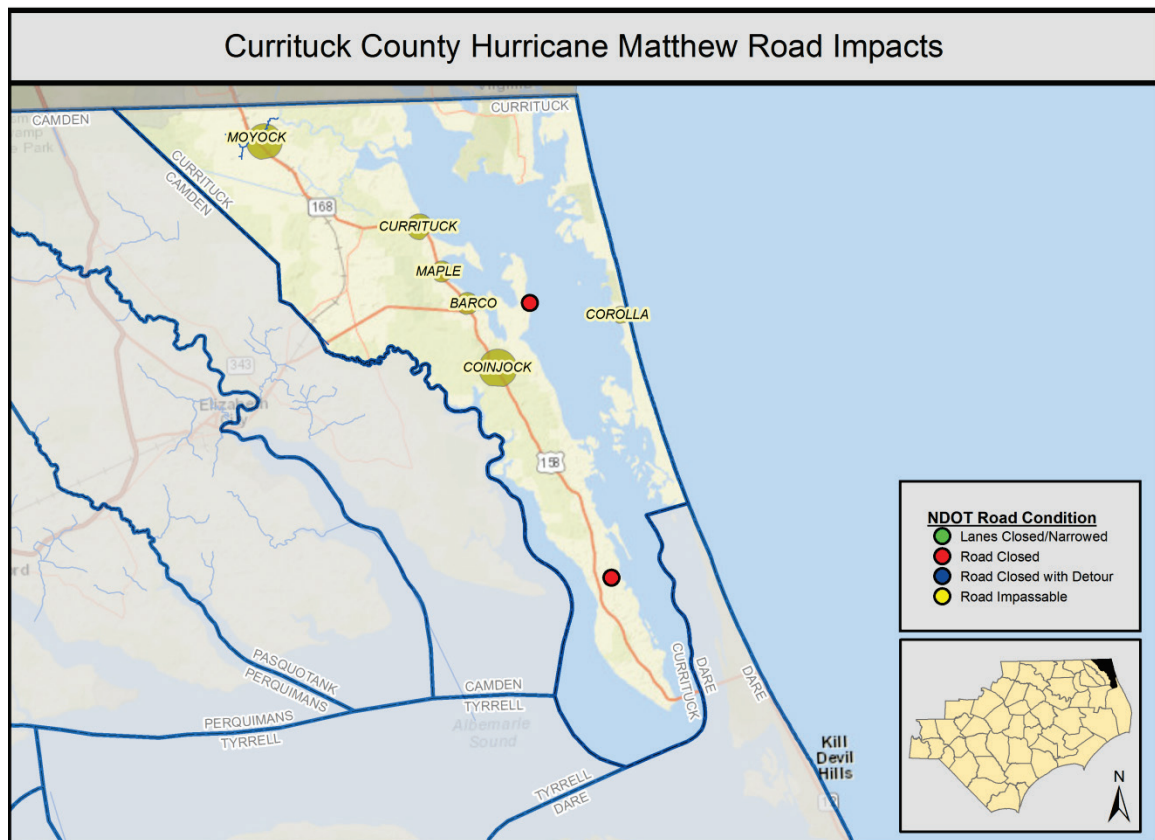


Figure 12. Impacted NCDOT Roads in Currituck County

- **Water/Wastewater Infrastructure:** County officials did not report any damage to water and wastewater infrastructure. However, they did note that the southern portion of the mainland, south of the Intracoastal Waterway, receives water through a single pipe that crosses the Intracoastal Waterway near Barco. They noted that there is concern for this pipe being damaged by a future event that would disrupt service to a large number of residents.
- **Currituck County Airport:** County officials stated that there was flooding from Hurricane Matthew at the airport and that standing water near the runway attracts waterfowl that jeopardize the safe operation of aircraft.

Ecosystems / Environment

As noted in Section II, there are large areas of natural and managed lands in Currituck County. Overall, environmental impacts in Currituck County as a result of Hurricane Matthew were substantial, resulting from heavy rains, stormwater runoff, downed trees, and other debris. The following impacts resulted from the event:

- Dunes were damaged by the storm, which resulted in erosion and overwash of the frontal dunes that protect homes along the oceanfront on the Currituck Outer Banks.
- Debris from downed trees and other natural remains has blocked the natural flow of many canals, streams, and roadside ditches throughout the county, which contributes to flooding.

An aerial photograph showing a residential neighborhood severely affected by flooding. The water is a murky, brownish-yellow color, submerging large areas of the landscape. Numerous houses with various roof colors (grey, blue, brown) are visible, some partially submerged. A dense line of green trees runs along the bottom and right sides of the frame, with some water visible between them. The overall scene depicts significant environmental damage and displacement.

4. Strategies for Resilient Redevelopment

4. Strategies for Resilient Redevelopment

This section provides details about the resilience and revitalization strategies and actions identified in Currituck County. These actions were identified and refined during three public meetings with local officials and county residents held in March and April 2017. The actions are tied to impacts from Hurricane Matthew and organized by the pillars of housing, economic development, infrastructure and environment. In addition to the public meetings, frequent coordination calls with County officials and data gathered from state agencies and organizations were utilized to formulate the actions listed below.

Meeting 1 was designed to introduce the community and County points of contact to the Resilient Redevelopment Planning process and goals. This meeting allowed the planning team to capture areas within the county that were damaged during Hurricane Matthew and to hear what potential mitigation actions had already been considered. Draft resilience actions were then presented at Meeting 2 of the planning process. This was done to garner general buy-in on the draft actions from the County-level planning teams and residents. More details on the actions were collected between Meetings 2 and 3 through research and follow-up phone calls and emails with the primary points of contact. Meeting 3 provided the opportunity to collect and finalize details for the draft actions. Meeting 4, scheduled in early May 2017, allowed the County points of contact to rank the identified actions, group them into High, Medium, and Low Priorities, and to approve their inclusion in the plan.

Pillar	Project/Action Count
Housing	3
Economic Development	3
Infrastructure	6
Environment	4
Grand Total	16

Table 3. Currituck County Summary of Projects by Pillar

The following table is ordered by the rankings and priorities provided by Currituck County during Meeting 4:

Pillar	Action Name	Priority	Overall Ranking
Economic Development	Economic Development Action 1: Outer Banks Outfalls	High	1
Housing	Housing Action 2: Stormwater Pump Stations	High	2
Infrastructure	Infrastructure Action 1: Coinjock Water Main	High	3
Environment	Environmental Action 4: Roadside Ditch Maintenance	High	4
Infrastructure	Infrastructure Action 3: Waterlily Road Improvements Study	High	5
Infrastructure	Infrastructure Action 4: Bells Island Road Improvements Study	High	6
Infrastructure	Infrastructure Action 6: Knotts Island Marsh Causeway Improvements Study	High	7
Infrastructure	Infrastructure Action 5: Tulls Creek Road Area Improvements Study	High	8

Pillar	Action Name	Priority	Overall Ranking
Environment	Environmental Action 2: Weather Stations	Medium	9
Housing	Housing Action 3: FIRM Education & Outreach	Medium	10
Housing	Housing Action 1: Mitigation for Repetitive Loss Properties	Medium	11
Environment	Environmental Action 3: Dune Enhancement	Medium	12
Environment	Environmental Action 1: Moyock Area Drainage Study	Medium	13
Infrastructure	Infrastructure Action 2: Emergency Operations Center/Public Safety Facility	Medium	14
Economic Development	Economic Development Action 2: NC 12 Feasibility Study	Low	15
Economic Development	Economic Development Action 3: Currituck County Airport	Low	16

Table 4. Projects by Rank

On the following pages, we have organized the projects and actions by pillar. Within each pillar, the projects are grouped by county priority. Please note that maps are provided for all projects that have a specific location within the county. Projects without maps are county-wide projects that will benefit citizens throughout the county.

Housing Strategies

Although Currituck County as a whole suffered only moderate impacts with respect to housing from Hurricane Matthew, as noted in Section III several areas of homes were impacted by flooding and roadway flooding introduced access issues for a number of homes and residents. As a result, in development of Currituck County's housing strategies, the planning team put their focus into the redevelopment of these specific areas, as well as in longer-term projects to increase the county's resiliency:

High Priority Housing Strategies

Pillar	Action Name	Priority	Overall Ranking
Housing	Housing Action 2: Stormwater Pump Stations	High	2

Table 5. Currituck High Priority Housing Summary

Currituck County identified one high priority housing strategy:

- **Stormwater Pump Stations:** Canals in northern Currituck County drain to a single crossing of NC 168, which leads to flooding in residential areas along canals during storm events. This project would include installation of three stormwater pump stations to reduce flooding from stormwater in canals at Ranchland Drive and Green View Road/Eagle Creek subdivision.

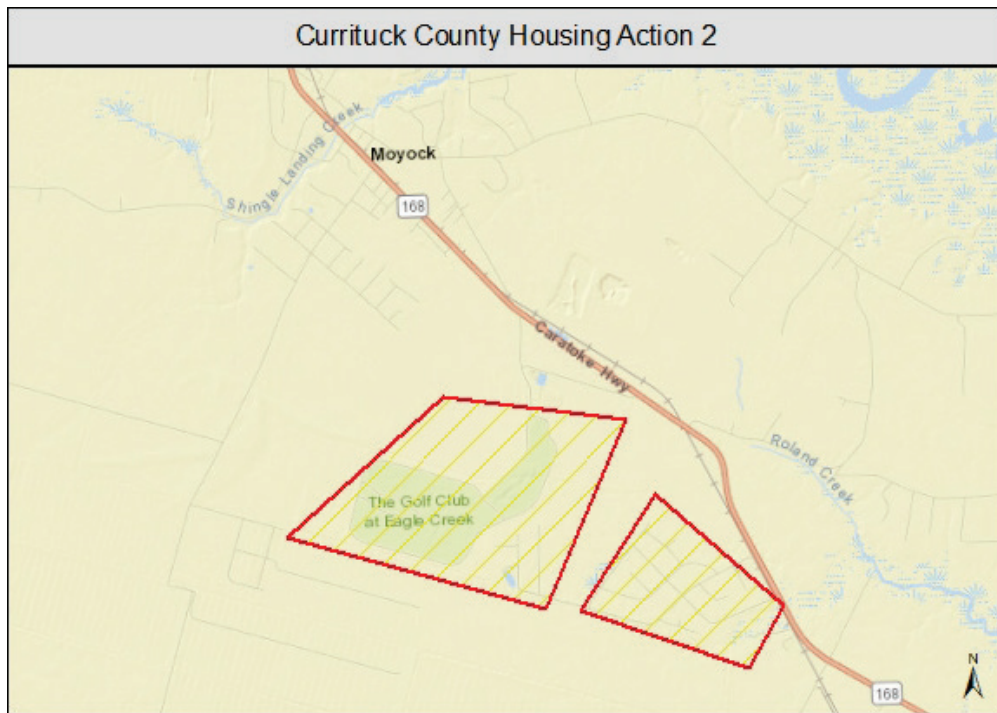


Figure 13. Housing Action 2: Stormwater Pump Stations

Housing Action 2: Stormwater Pump Stations

County: Currituck

Priority Grouping: High Priority

Priority Ranking: 2

Project Timeframe: 12 months

Location: Moyock

Project Summary: Canals in northern Currituck County drain to a single crossing of NC 168, which leads to flooding in residential areas along canals during storm events. This project would include installation of three stormwater pump stations to reduce flooding from stormwater in canals at Ranchland Drive and Green View Road/Eagle Creek subdivision.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Significant flooding occurred throughout the Moyock area as a result of Hurricane Matthew. Flooding was exacerbated by insufficient drainage canals and culverts to allow stormwater flow.	N/A
Consistent with existing plans (describe points of intersection/departure)	Consistent with goals stated in the Albemarle Regional Hazard Mitigation Plan and Currituck County (CUR35: Secure pumps for stormwater pumping prior to storm events).	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	The project could reduce flood risk to roads homes businesses and farmland by pumping stormwater away from these areas.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	100-200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	0	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	Pumping stormwater will remove excess water and allow for drainage ditches to function.	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$501K - \$1M	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

Medium Priority Housing Strategies

Pillar	Action Name	Priority	Overall Ranking
Housing	Housing Action 3: FIRM Education & Outreach	Medium	10
Housing	Housing Action 1: Mitigation for Repetitive Loss Properties	Medium	11

Table 6. Currituck Medium Priority Housing Summary

These two projects represent the housing strategies that Currituck County indicated are of a medium priority to address. Additional detail on the projects can be found below:

- **Flood Insurance Rate Map (FIRM) Education & Outreach:** Draft FIRMs show substantial changes in flood zones, throughout the county. Properties previously within a flood zone are no longer included in a flood zone. This project is to develop property owner outreach materials to explain the changes between the previous and draft FIRMs to encourage property owners to maintain flood insurance.
- **This is a county-wide project, so no project area map has been included.**

Housing Action 3: FIRM Education & Outreach

County: Currituck

Priority Grouping: Medium Priority

Priority Ranking: 10

Project Timeframe: 12 months

Location: Countywide

Project Summary: FIRM Education & Outreach: Draft FIRMs show substantial changes in flood zones, throughout the county. Properties previously within a flood zone are no longer included in a flood zone. This project is to develop property owner outreach materials to explain the changes between the previous and draft FIRMs to encourage property owners to maintain flood insurance.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Draft FIRMs show substantial changes in flood zones throughout the county. Properties previously within a flood zone are no longer included in a flood zone; however some of these areas experienced flooding during Matthew.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	Education on flood map changes and hazard risks as well as encouraging residents to maintain flood insurance could result in fewer losses during future events.	Agree
For how long will this solution be effective?	Less than 10 years	Agree
How effective is the risk reduction?	Unknown	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	0	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$0- \$50K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

- **Mitigation for Repetitive Loss Properties:** This project includes funding for eight applications to elevate repetitive loss homes.

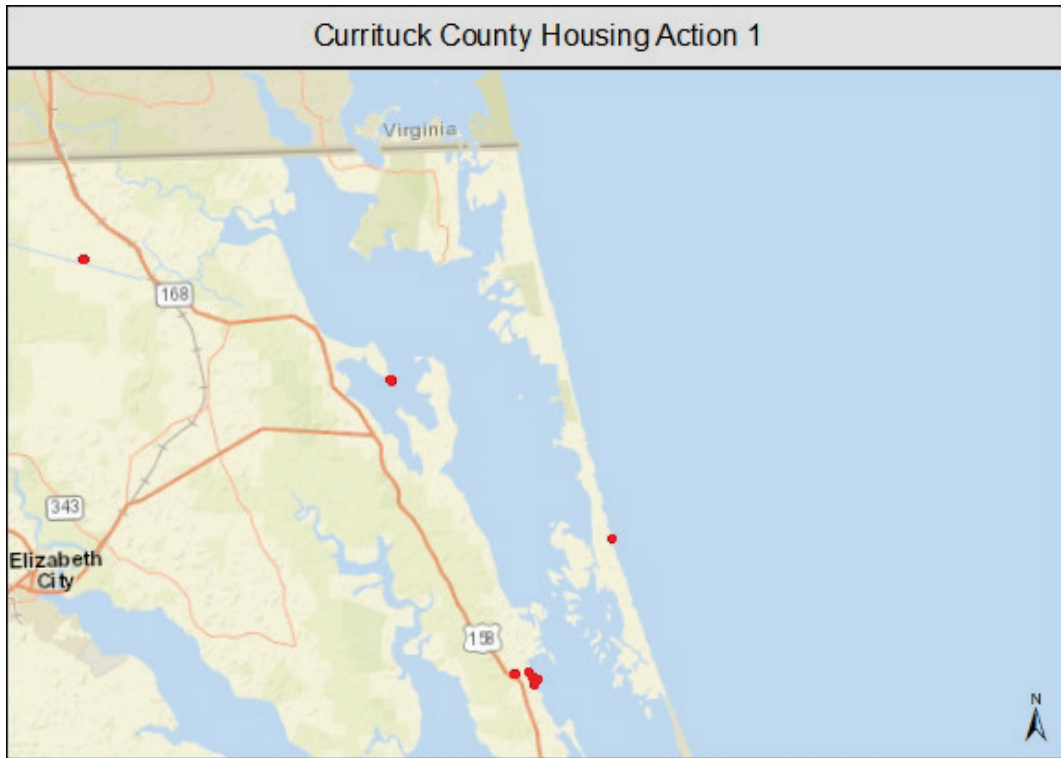


Figure 14. Housing Action 1: Mitigate Repetitive Loss Properties

Housing Action 1: Mitigation for Repetitive Loss Properties

County: Currituck

Priority Grouping: Medium Priority

Priority Ranking: 11

Project Timeframe: 18 months

Location: Various

Project Summary: Mitigation for Repetitive Loss Properties: This project includes funding for eight applications for elevation of repetitive loss homes.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Eight applications for elevation have been submitted by repetitive loss properties in Currituck County following Hurricane Matthew. This project would allow for those elevations to be completed.	N/A
Consistent with existing plans (describe points of intersection/departure)	The proposed project is consistent with goals stated in the Albemarle Regional Hazard Mitigation Plan (REG4: Pursue mitigation of repetitive loss properties throughout the Region) and Currituck County (CUR40: Pursue mitigation of repetitive flood loss properties).	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	Local contractors would likely be hired to complete elevation projects.	Agree
For how long will this solution be effective?	More than 50 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	0	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$501K - \$1M	Agree
What is the level of public support for this project?	High	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

Economic Development Strategies

Due to relatively minor Hurricane Matthew impacts to Currituck County in terms of economic development, the planning team worked with local officials to examine ways to increase resiliency for future storm events and encourage economic growth. Currituck County's economy relies heavily on tourism to the Outer Banks area of the county.

High Priority Economic Development Strategies

Pillar	Action Name	Priority	Overall Ranking
Economic Development	Economic Development Action 1: Outer Banks Outfalls	High	1

Table 7. Currituck High Priority Economic Development Summary

Currituck County identified one economic development project as the highest priority to address:

- Outer Banks Outfalls and Stormwater Pumps:** Many residential areas on the Currituck County Outer Banks are private, with privately-maintained roads and water/sewer systems. Some of these areas stayed flooded for several days following Hurricane Matthew, which affects the County's economy as this area is primarily rental properties and vacation homes. This project would allow the County to acquire portable generators and a portable stormwater pump station to assist in removing stormwater from these areas. The County would also install permanent outfall pipes to the Atlantic Ocean; acquire easements on private property to locate the portable pump when needed. The County would also acquire a Coastal Area Management Act (CAMA) major permit to install the outfalls. These outfalls would be capped on both ends during normal conditions and used only in an emergency when the State permits pumping to the ocean.



Figure 15. Economic Development Action 1: Outer Banks Outfalls and Stormwater Pumps

Economic Development Action 1: Outer Banks Outfalls

County: Currituck

Priority Grouping: High Priority

Priority Ranking: 1

Project Timeframe: 1-2 years

Location: Outer Banks

Project Summary: Flooding of residential areas on the Currituck County Outer Banks (private rental properties and vacation homes, with privately-maintained roads and water/sewer systems) affects the economy. This project would allow the County to install permanent outfall pipes to the Atlantic Ocean, acquire easements on private property to locate the portable pump when needed. The County would also acquire a Coastal Area Management Act (CAMA) major permit to install the outfalls. These outfalls would be capped on both ends during normal conditions and used only in an emergency when the state permits pumping to the ocean.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Following Hurricane Matthew several areas on the Outer Banks were flooded for several days. The County responded with portable pumps and hoses; however it took several days in order to begin pumping. This project would allow the County to respond immediately.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	With permanent outfalls in place and portable pumps on hand the County would be able to respond quickly to remove floodwater from areas of the Outer Banks to minimize disruption to tourism.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	0	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Between 26 and 50%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$251K - \$500K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

Low Priority Economic Development Strategies

Pillar	Action Name	Priority	Overall Ranking
Economic Development	Economic Development Action 2: NC 12 Feasibility Study	Low	15
Economic Development	Economic Development Action 3: Currituck County Airport	Low	16

Table 8. Currituck Low Priority Economic Development Summary

Other economic development strategies were identified as lower priority:

- NC 12 Improvements Feasibility Study:** Currituck County's Outer Banks, which are an important economic resource for the county, are accessible only via NC 12 through Dare County. A section of NC 12 in Duck is particularly susceptible to flooding, which cuts off access to Currituck County Outer Banks. This project would provide funding for a feasibility study coordinated with NCDOT, Dare County, and the Town of Duck to evaluate alternatives for improvements to NC 12 in this area to reduce the risk of NC 12 being severed for extended periods.

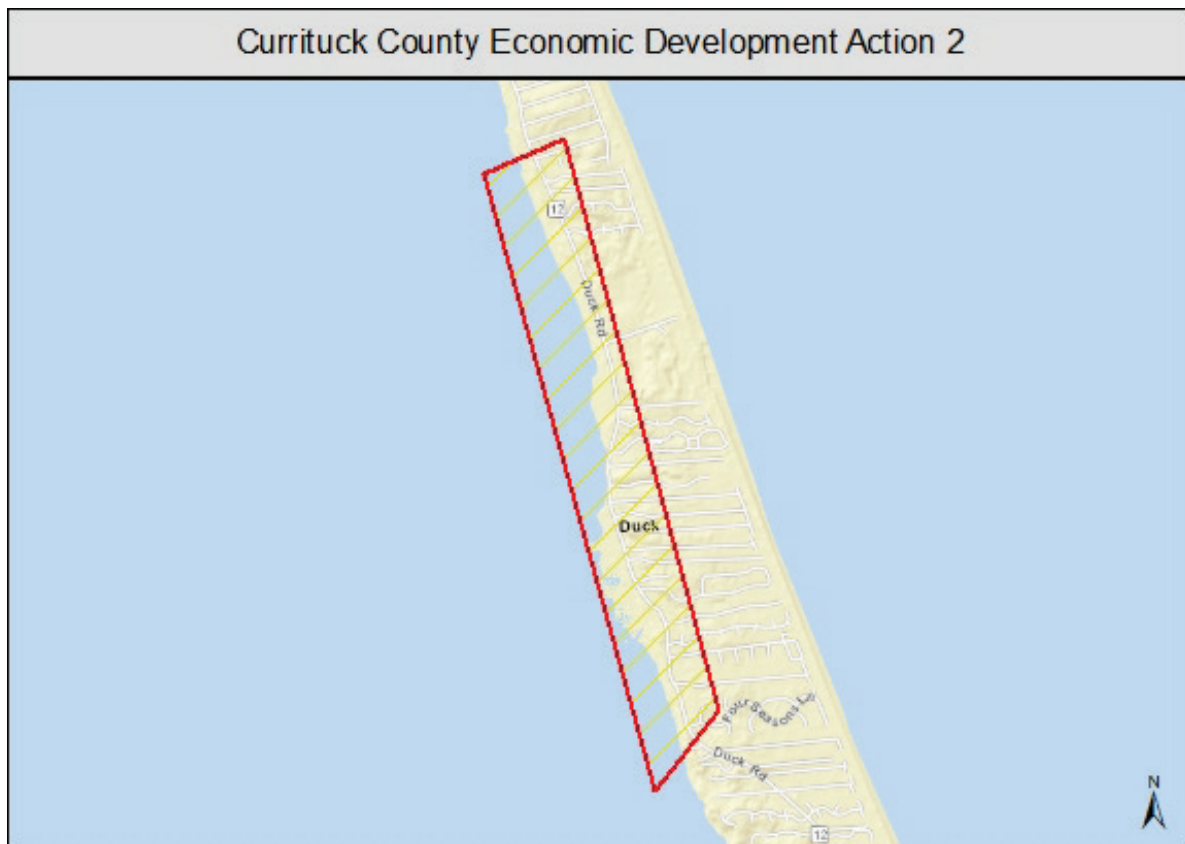


Figure 16. Economic Development Action 2: NC 12 Improvements Feasibility Study

Economic Development Action 2: NC 12 Feasibility Study

County: Currituck

Priority Grouping: Low Priority

Priority Ranking: 15

Project Timeframe: 1-2 years

Location: Outer Banks

Project Summary: Currituck County's Outer Banks, which are an important economic resource for the county, are accessible only via NC 12 through Dare County. A section of NC 12 in Duck is particularly susceptible to flooding, which cuts off access to Currituck County Outer Banks. This project would provide funding for a feasibility study coordinated with NCDOT, Dare County, and Town of Duck to evaluate alternatives for improvements to NC 12 in this area to reduce risk of NC 12 being severed for extended periods.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	During Hurricane Matthew NC 12 was cut off in Duck by floodwater. This blocks the only road access to the Currituck Outer Banks for emergency responders as well as for residents, visitors and tourists.	N/A
Consistent with existing plans (describe points of intersection/departure)	The proposed project is consistent with goals stated in the Albemarle Regional Hazard Mitigation Plan and Currituck County (CUR7 CUR9 and CUR10 which all deal with coordinating with NCDOT and neighboring communities on road improvements).	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	The study will evaluate alternatives and identify a solution that would allow NC 12 to remain open to the maximum extent and allow access to the Currituck Outer Banks.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	100-200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree
Is coordination with other communities/counties needed to complete this project?	Yes	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Between 26 and 50%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	Low	Agree
What is the financial range of this project?	\$51K - \$100K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	Regional	Agree

- **Currituck County Airport Drainage Improvements:** Standing water around a runway attracts waterfowl that cause problems with aircraft. This project would implement drainage improvements at Currituck County Airport to reduce flooding that could interrupt service at the airport.

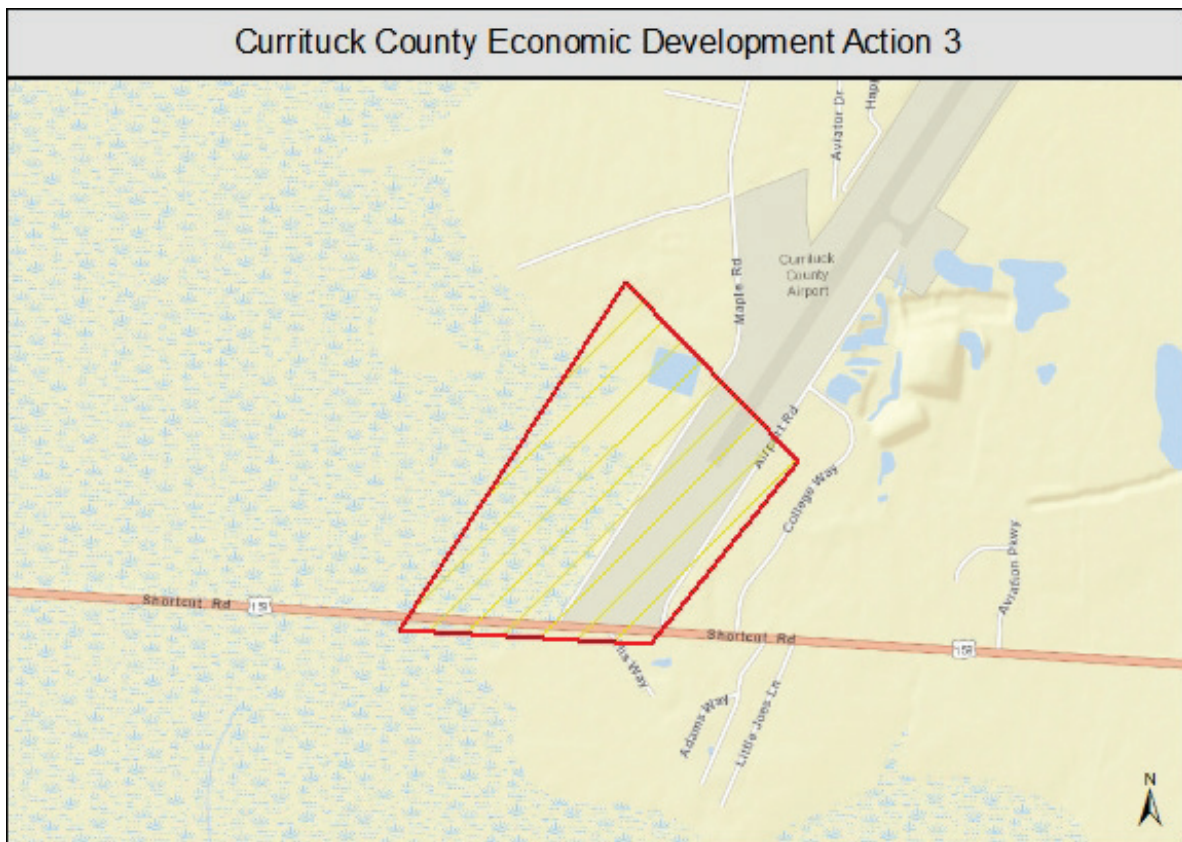


Figure 17. Economic Development Action 3: Currituck County Airport Drainage Improvement

Economic Development Action 3: Currituck County Airport

County: Currituck

Priority Grouping: Low Priority

Priority Ranking: 16

Project Timeframe: 12 months

Location: Currituck County Airport

Project Summary: Currituck County Airport: Standing water around the airport's runway attracts waterfowl, causing conflicts with aircraft. This project would implement drainage improvements at Currituck County Airport to reduce flooding that interrupts service at the airport.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Standing water at the airport after Hurricane Matthew caused operations at the airport to be disrupted.	N/A
Consistent with existing plans (describe points of intersection/departure)	The project is consistent with Currituck County's Land Use Plan which includes a goal to encourage greater utilization of airport facilities.	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	Drainage improvements to remove standing water at the airport would decrease disruption in airport operations.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$0- \$50K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

Infrastructure Strategies

The purpose of the strategies related to Currituck County’s infrastructure is to protect critical facilities and key routes needed to foster community resiliency, sustainability, and safety before, during, and after disasters. These strategies are essential in protecting citizen and community well-being, while augmenting an effective recovery from a potential future storm like Hurricane Matthew. In working with local officials, the planning team developed the following infrastructure strategies:

High Priority Infrastructure Strategies

Pillar	Action Name	Priority	Overall Ranking
Infrastructure	Infrastructure Action 1: Coinjock Water Main	High	3
Infrastructure	Infrastructure Action 3: Waterlily Road Improvements Study	High	5
Infrastructure	Infrastructure Action 4: Bells Island Road Improvements Study	High	6
Infrastructure	Infrastructure Action 6: Knotts Island Marsh Causeway Improvements Study	High	7
Infrastructure	Infrastructure Action 5: Tulls Creek Road Area Improvements Study	High	8

Table 9. Currituck High Priority Infrastructure Summary

These projects represent the infrastructure strategies that Currituck County indicated are the highest priority to address. Additional detail can be found below:

- Coinjock Water Main:** The mainland water system runs primarily north and south. The southern part of the County’s mainland is separated by the USACE Intracoastal Waterway (Coinjock Canal). In 2006, a new 12-inch water main was horizontally directional drilled (HDD) under the canal after the previous water main failed. The only water treatment plant is located in the center portion of the county north of the Coinjock Canal. There are two elevated water towers located south of the Coinjock Canal. Should the water main under the Coinjock Canal break, the southern portion of the county would be out of water in approximately one day. This project would install a backup water main across the Coinjock Canal consisting of approximately 450 feet of 18-inch HDPE bored under the bed of the Coinjock Canal and approximately 150 feet of connection on each end.

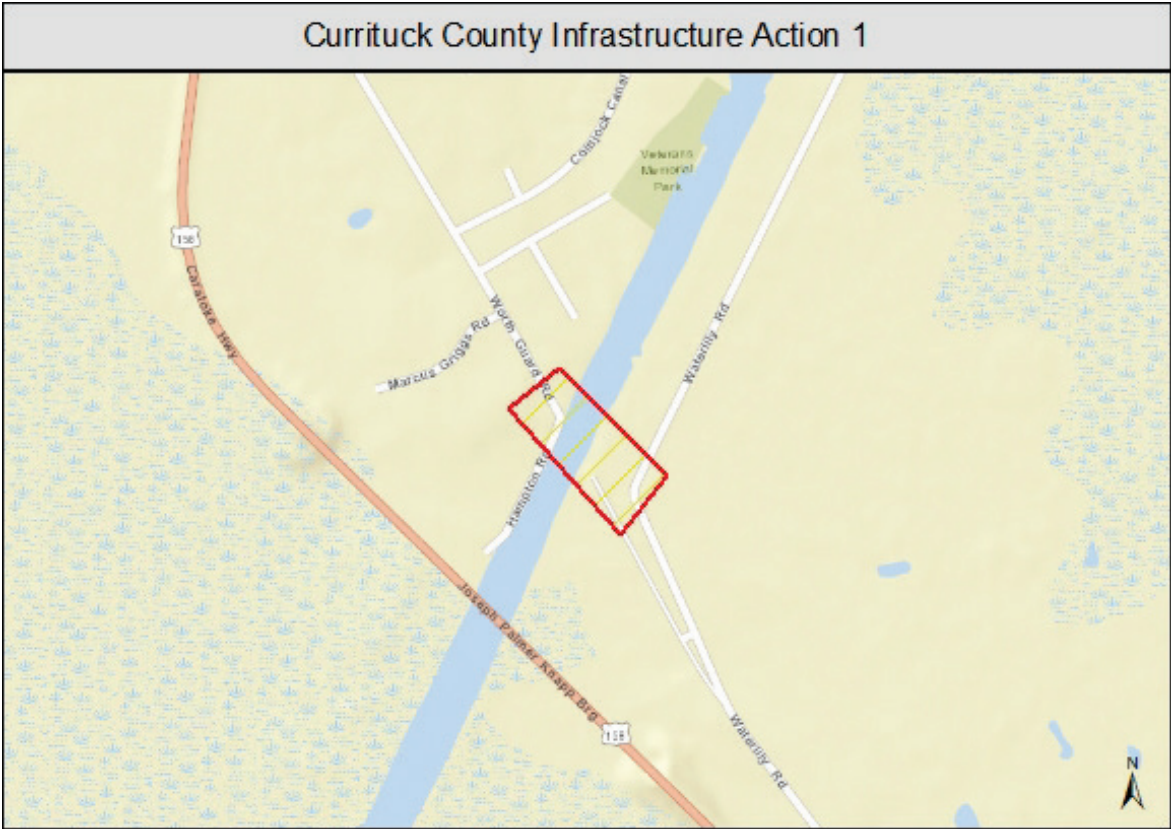


Figure 18. Infrastructure Action 1: Coinjock Water Main

Infrastructure Action 1: Coinjock Water Main

County: Currituck

Priority Grouping: High Priority

Priority Ranking: 3

Project Timeframe: 12 months

Location: Coinjock

Project Summary: This project would install a backup water main across the Coinjock Canal. The project will consist of approximately 450' of 18" HDPE bored under the bed of the Coinjock Canal and approximately 150' of connection on each end.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	The proposed project would contribute to Currituck County's resiliency by providing redundancy and reliability in water service for the southern part of the Currituck County mainland.	N/A
Consistent with existing plans (describe points of intersection/departure)	The project is consistent with the county's plans for growth in the southern portion of the Currituck County mainland. Approximately one-third of the water connections are located south of the Coinjock Canal. There is some growth expected for the southern portion of the county. Presently the 10" water main (with 12" canal crossing) is not adequately sized to handle growth.	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	The proposed project would provide redundancy and reliability in water service for the southern part of the Currituck County mainland.	Agree
For how long will this solution be effective?	More than 50 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	None anticipated	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$251K - \$500K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

- **Roadway Improvements:** During storm events, flooding inundates several roads in the county, cutting off access to residential areas. The county identified the following roads as needing improvements, such as elevating, to reduce flood risk:
 - Waterlily Road
 - Bells Island Road
 - Knotts Island Marsh Causeway
 - Tulls Creek Road, Old Tulls Creek Road, and Rocky Top Road

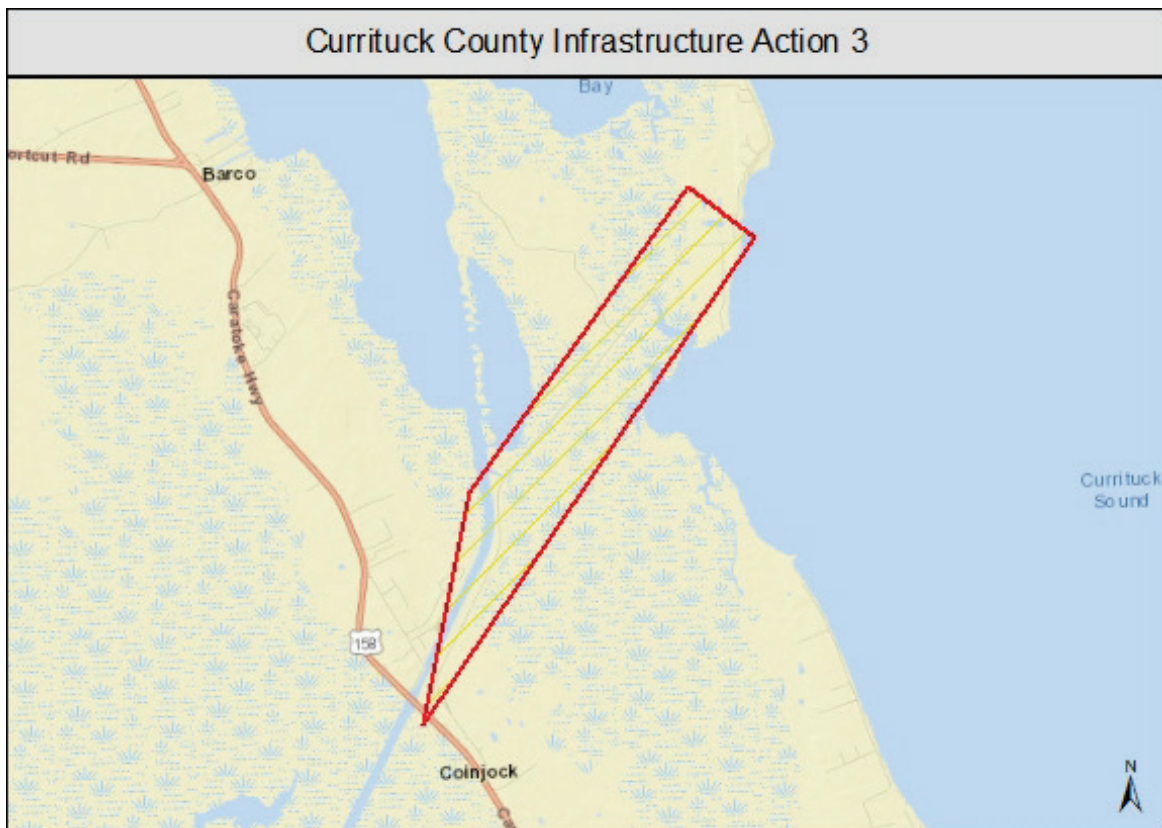


Figure 19. Infrastructure Action 3: Waterlily Road Improvements Study

Infrastructure Action 3: Waterlily Road Improvements Study

County: Currituck

Priority Grouping: High Priority

Priority Ranking: 5

Project Timeframe: 1-2 years

Location: Coinjock

Project Summary: This project would provide funding for a study to evaluate alternatives for elevating Waterlily Road to reduce risk of being inundated during flood events, in coordination with NCDOT.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Flooding as a result of Hurricane Matthew resulted in Waterlily Road being inundated for several days severing the only access to more than 100 homes and 150 mobile homes/campers.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	The project would evaluate improvements that could reduce flood risk to roads resulting in access being cut off to homes and jobs.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$51K - \$100K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

- **Bells Island Road Improvements Study:** During flood events, water overtops Bells Island Road, cutting off the only access route to approximately 200 homes.

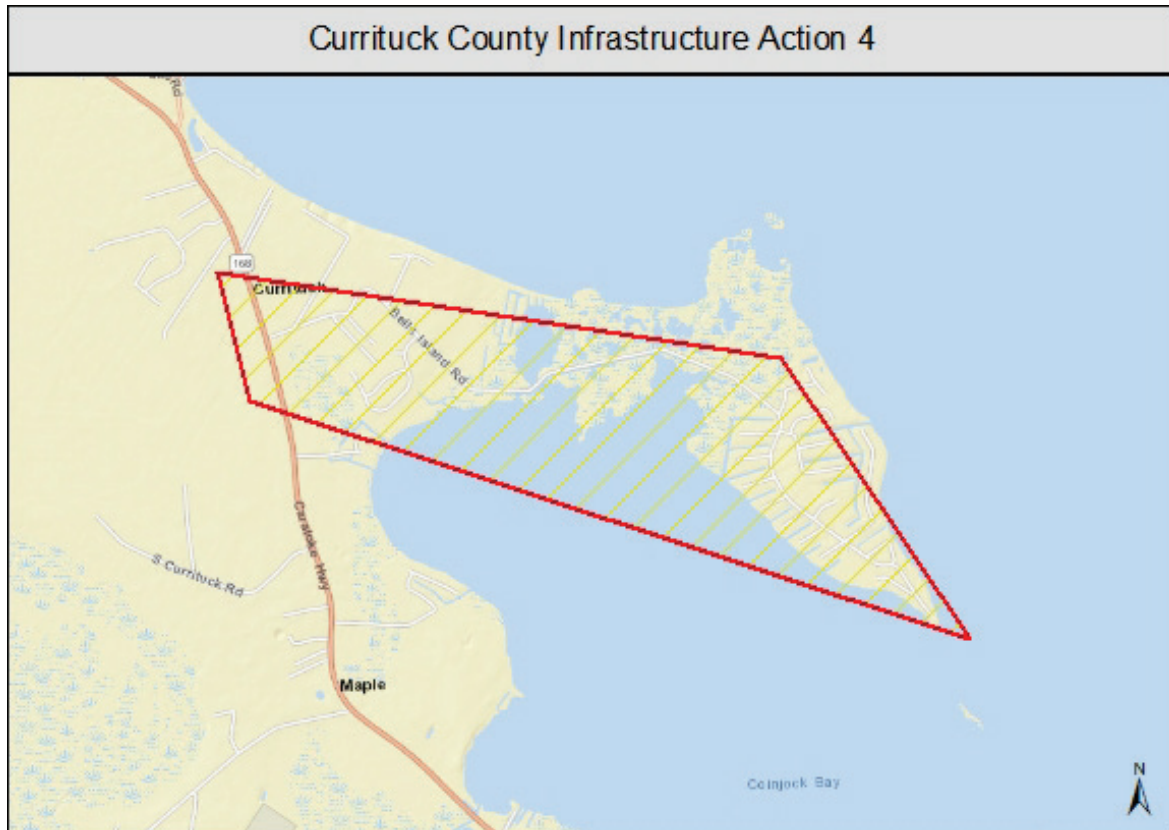


Figure 20. Infrastructure Action 4: Bells Island Road Improvements Study

Infrastructure Action : Bells Island Road Improvements Study

County: Currituck

Priority Grouping: High Priority

Priority Ranking: 6

Project Timeframe: 1-2 years

Location: Bells Island

Project Summary: This project would provide funding for a study to evaluate alternatives for elevating Bells Island Road to reduce risk of being inundated during flood events, in coordination with NCDOT.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Flooding as a result of Hurricane Matthew resulted in Bells Island Road being inundated for several days, severing access to more than 200 homes.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	The project would evaluate improvements that could reduce flood risk to roads resulting in access being cut off to homes and jobs.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$51K - \$100K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

- **Knotts Island Marsh Causeway Improvements Study:** During flood events, water overtops Marsh Causeway, cutting off the only road access to approximately 700 residents on Knotts Island.

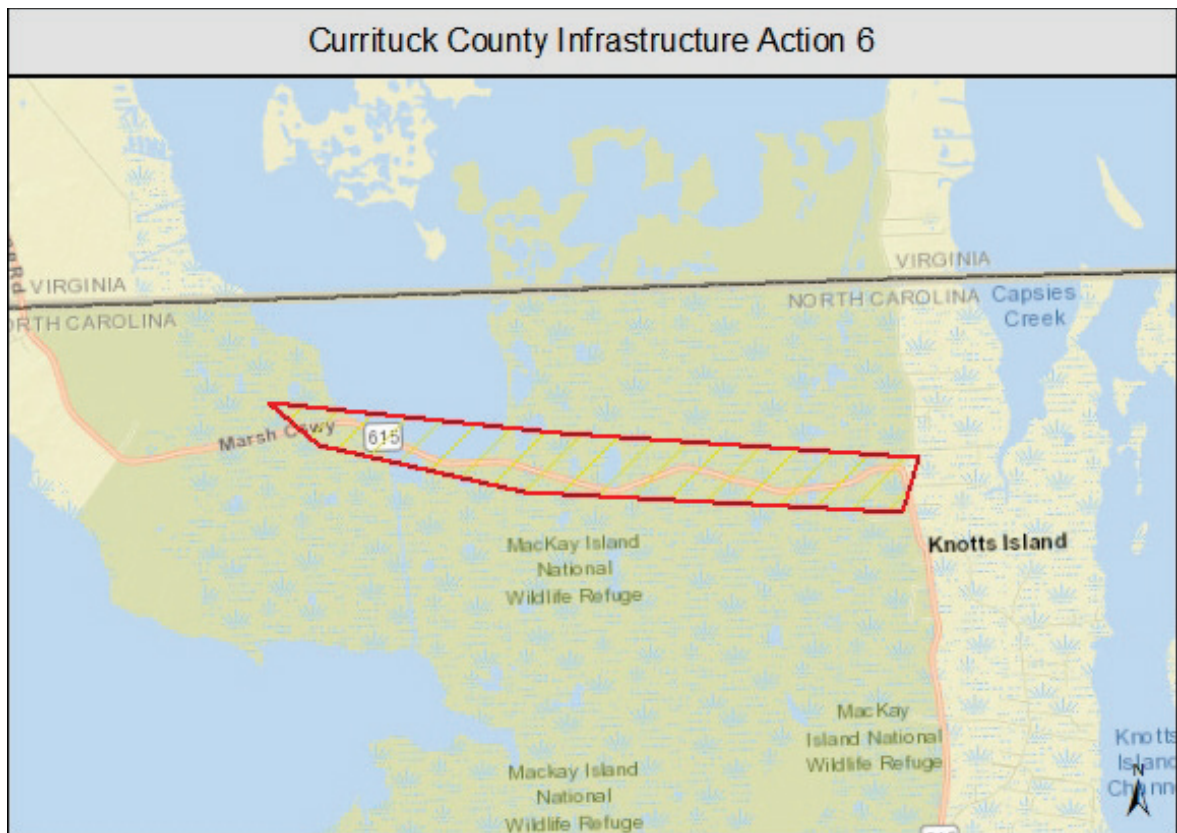


Figure 21. Infrastructure Action 6: Knotts Island Marsh Causeway Improvements Study

Infrastructure Action 6: Knotts Island Marsh Causeway Improvements Study

County: Currituck

Priority Grouping: High Priority

Priority Ranking: 7

Project Timeframe: 1-2 years

Location: Knotts Island

Project Summary: This project would provide funding for a study to evaluate alternatives for elevating Marsh Causeway to reduce risk of being inundated during flood events, in coordination with NCDOT.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Flooding as a result of Hurricane Matthew resulted in Marsh Causeway being inundated for several days cutting of road access for approximately 700 residents of Knotts Island.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	The project would evaluate improvements that could reduce flood risk to roads resulting in access being cut off to homes and jobs.	Agree
For how long will this solution be effective?	More than 50 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	Less than 25%	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$101K - \$250K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	State	Agree

- **Tulls Creek Road Area Improvements Study:** During flood events, water overtops Tulls Creek Road, cutting off access to Tulls Bay community.

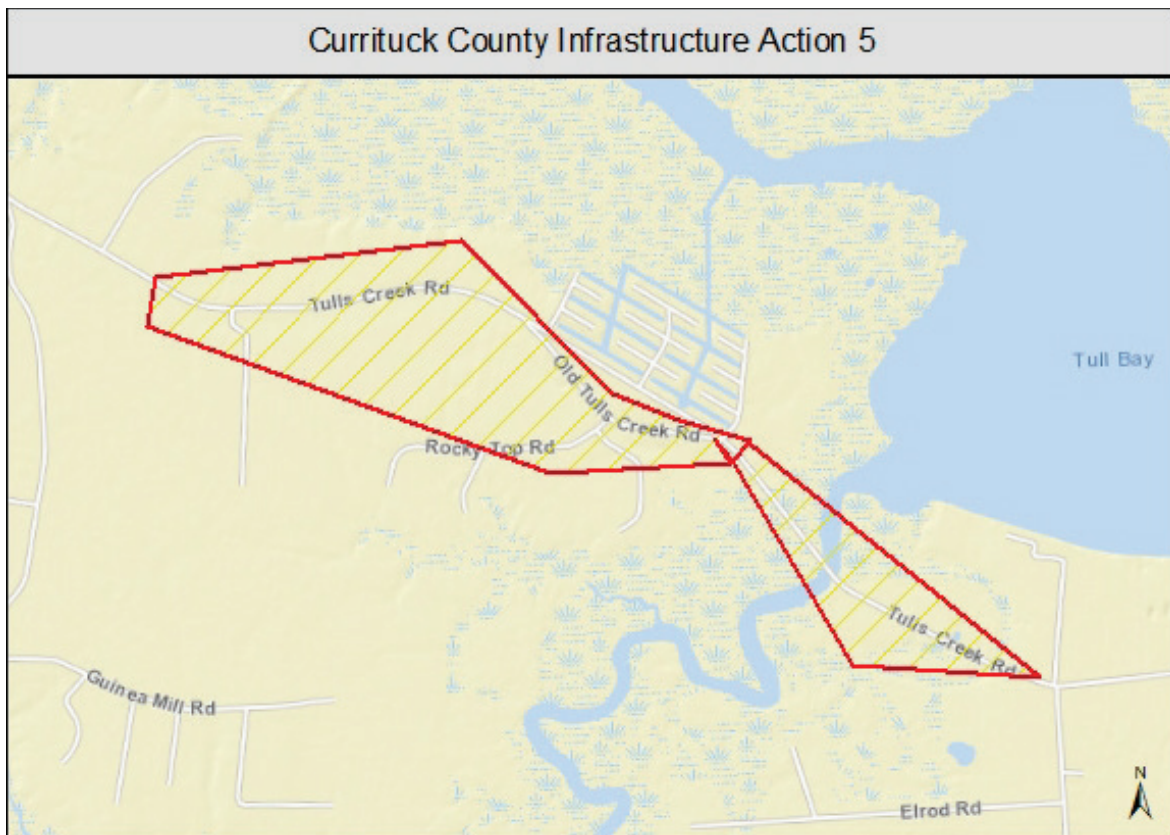


Figure 22. Infrastructure Action 5: Tulls Creek Road Area Improvements Study

Infrastructure Action 5: Tulls Creek Road Area Improvements Study

County: Currituck

Priority Grouping: High Priority

Priority Ranking: 8

Project Timeframe: 1-2 years

Location: Tulls Creek

Project Summary: This project would provide funding for a study to evaluate roadway and drainage improvements on Tulls Creek Road, Old Tulls Creek Road, and Rocky Top Road to reduce risk of roads being inundated for extended periods, in coordination with NCDOT.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Flooding as a result of Hurricane Matthew resulted in Tulls Creek Road Rocky Top Road and Old Tulls Creek Road being inundated for several days.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	The project would evaluate improvements that could reduce flood risk to roads resulting in access being cut off to homes and jobs.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$51K - \$100K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

Medium Priority Infrastructure Strategies

Pillar	Action Name	Priority	Overall Ranking
Infrastructure	Infrastructure Action 2: Emergency Operations Center/Public Safety Facility	Medium	14

Table 10. Currituck Medium Priority Infrastructure Summary

Currituck County identified one medium priority infrastructure project:

- Emergency Operations Center/Public Safety Facility:** Currituck County is currently planning for a centralized emergency operations center and public safety facility. This project would provide funding to design and construct an emergency operations center/public safety facility for Currituck County.

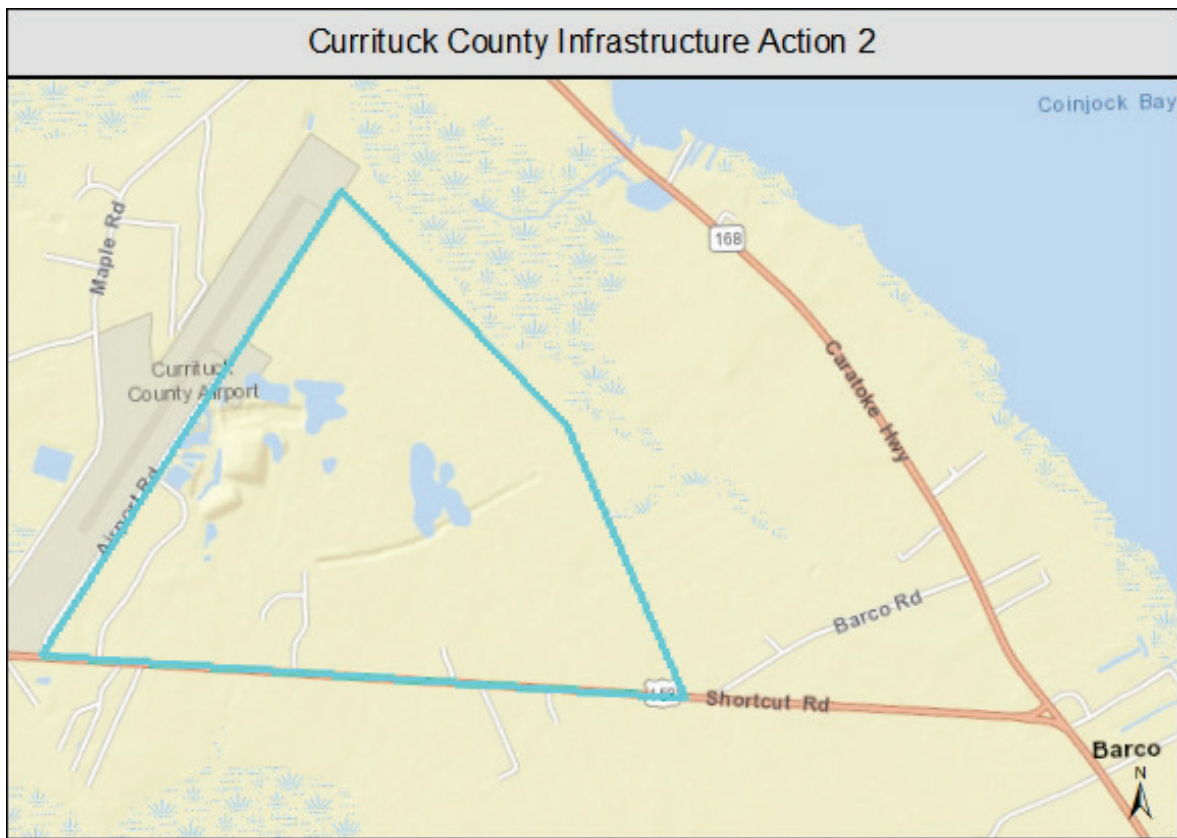


Figure 23. Infrastructure Action 2: Emergency Operations Center/Public Safety Facility

Infrastructure Action 2: Emergency Operations Center/Public Safety Facility

County: Currituck

Priority Grouping: Medium Priority

Priority Ranking: 14

Project Timeframe: 1-2 years

Location: Currituck

Project Summary: Emergency Operations Center/Public Safety Facility: This project would provide funding to design and construct an emergency operations center/public safety facility for Currituck County.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Currituck County currently does not have a centralized location from which to manage emergency operations and public safety.	N/A
Consistent with existing plans (describe points of intersection/departure)	The proposed project is consistent with goals stated in the Albemarle Regional Hazard Mitigation Plan for Currituck County (CUR34: Secure funding design and construct an EOC/Public Safety Facility).	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	N/A	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	>200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	N/A	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$1M+	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

Environmental, Ecosystem and Agricultural Strategies

Currituck County has several distinct environments that provide many opportunities for enhancing environmental resources for both resiliency and recreational purposes. These strategies, paired with the natural beauty already present in many areas, provide opportunities for Currituck County to become more resilient and attractive for locals and visitors.

High Priority Environmental Strategies

Pillar	Action Name	Priority	Overall Ranking
Environment	Environmental Action 4: Roadside Ditch Maintenance	High	4

Table 11. Currituck High Priority Environmental Summary

Currituck County identified one high priority environmental project:

- **Roadside Ditch Maintenance:** As a result of budget and staffing constraints, roadside ditches and drainage structures are not regularly maintained. Lack of maintenance is contributing to flooding of adjacent properties during storm events. This project would provide funding to identify priority roadside ditches and drainage structures for maintenance and work with NCDOT to implement a maintenance program.
- **This is a county-wide project, so no project area map has been included.**

Environmental Action 4: Roadside Ditch Maintenance

County: Currituck

Priority Grouping: High Priority

Priority Ranking: 4

Project Timeframe: 1-2 years

Location: Countywide

Project Summary: This project would provide funding to identify priority roadside ditches and drainage structures for maintenance and work with NCDOT to implement a maintenance program.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Unmaintained ditches contributed to stormwater flooding during Hurricane Matthew.	N/A
Consistent with existing plans (describe points of intersection/departure)	The proposed project is consistent with goals stated in the Albemarle Regional Hazard Mitigation Plan and Currituck County (CUR1: Improve stormwater drainage in order to prevent flooding and CUR2: Routinely inspect and clear debris from drainage system).	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	The project could reduce flood risk to roads homes businesses and farmland by increasing drainage capacity of roadside ditches.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	100-200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	>6	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Low to moderate confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	The project would increase drainage capacity of roadside ditches and reduce stormwater flooding of adjacent areas.	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$101K - \$250K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

Medium Priority Environmental Strategies

Pillar	Action Name	Priority	Overall Ranking
Environment	Environmental Action 2: Weather Stations	Medium	9
Environment	Environmental Action 3: Dune Enhancement	Medium	12
Environment	Environmental Action 1: Moyock Area Drainage Study	Medium	13

Table 12. Currituck Medium Priority Environmental Summary

These projects represent the environmental strategies that Currituck County indicated are of a medium priority to address. Additional detail can be found below:

- **Weather Stations:** Currituck County Emergency Management and public safety staff use wind speed information to make decisions related to public safety response during storms. This project would provide funding for the county to purchase and install up to six weather stations throughout the county.
- **This is a county-wide project, so no project area map has been included.**

Environmental Action 2: Weather Stations

County: Currituck

Priority Grouping: Medium Priority

Priority Ranking: 9

Project Timeframe: 12 months

Location: Countywide

Project Summary: Currituck County Emergency Management and public safety staff use wind speed information to make decisions related to public safety response during storms. This project would provide funding for the county to purchase and install up to six weather stations throughout the county.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Currituck County's geography is such that weather conditions can be vastly different in different areas of the county. This was true during Hurricane Matthew making it difficult for emergency management and public safety officers in one area of the county to make appropriate decisions for other areas of the county.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	N/A	Agree
For how long will this solution be effective?	Less than 10 years	Agree
How effective is the risk reduction?	Unknown	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	4-6	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Minimal to low confidence	N/A
What impact will this action have on the local economy/tax base?	No Impact	Agree
What impacts to the environment of the county will result from this project?	Weather stations located throughout the county would provide valuable information for use in making public safety decisions during storm events.	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$101K - \$250K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree

Who will administer this project?	County	Agree
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- **Dune Enhancement:** Dunes serve as natural mitigation and protection from storms. This project would provide funding for dune plantings, sand fencing, importing sand, and other appropriate measures to repair and enhance frontal dunes.

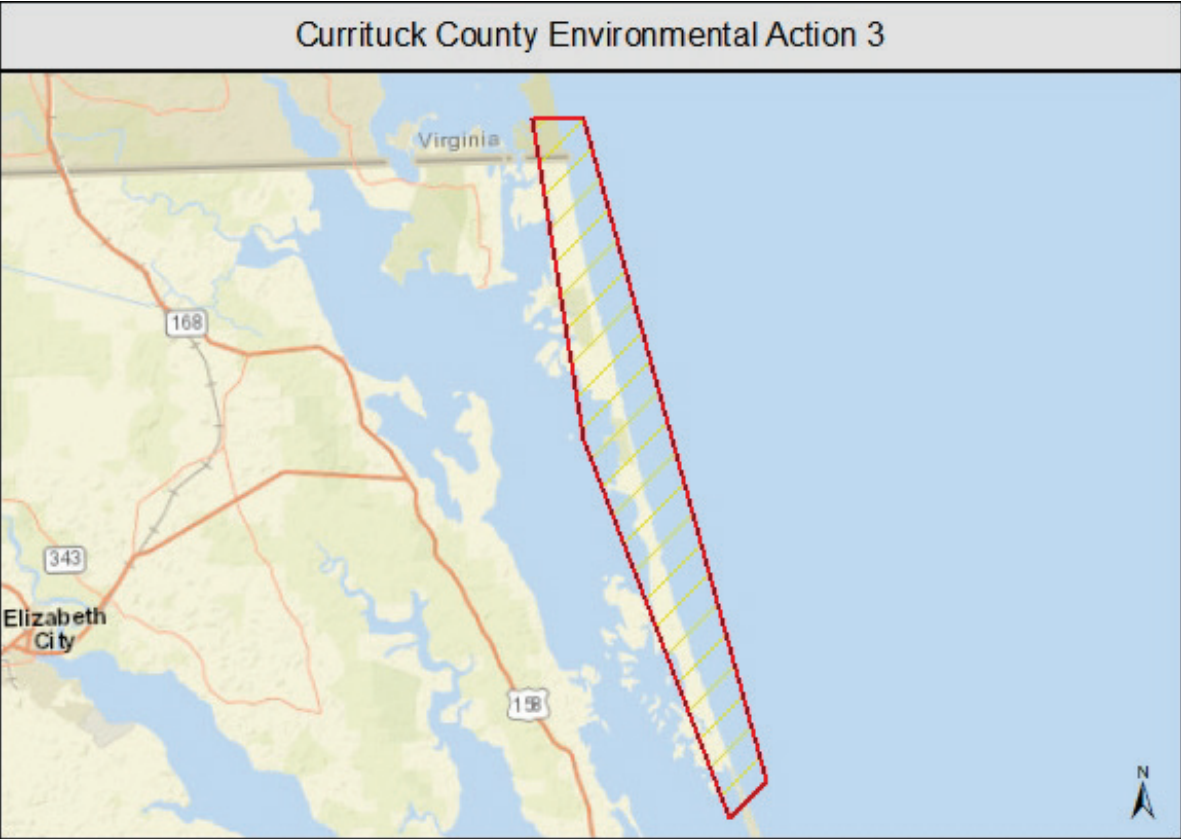


Figure 24. Environmental Action 3: Dune Enhancement

Environmental Action 3: Dune Enhancement

County: Currituck

Priority Grouping: Medium Priority

Priority Ranking: 12

Project Timeframe: 1-2 years

Location: Outer Banks

Project Summary: Dune Enhancement: Dunes serve as natural mitigation and protection from storms. This project would provide funding for dune plantings, sand fencing, importing sand, and other appropriate measures to repair and enhance frontal dunes.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Frontal dunes along the Atlantic Coast on the Currituck County Outer Banks were damaged during Hurricane Matthew.	N/A
Consistent with existing plans (describe points of intersection/departure)	The proposed project is consistent with goals stated in the Albemarle Regional Hazard Mitigation Plan for Currituck County (CUR46: Protect/enhance landforms through both public and private efforts that serve as natural mitigation features by promoting dune grass plantings installation of sand fencing importing sand and other appropriate measures).	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	Dunes serve as natural protection for developed areas from natural hazards.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	50-100 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	0	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	Dunes serve as natural protection for developed areas from natural hazards.	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$101K - \$250K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree

Who will administer this project?	County	Agree
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- **Moyock Area Drainage Study:** Water cannot flow across NC 168 and floods roads, homes, and farms in Moyock west of NC 168. In coordination with U.S. Army Corps of Engineers (USACE) and North Carolina Department of Transportation (NCDOT), this project would fund a drainage study for the Moyock area west of NC 168 to identify improvements that could reduce flood damage to surrounding areas. Drainages to be included in this study include: Eagle Creek, Western Canal, and Roland Creek Canals; Moyock Service District ditches #1-6; Ranchland drainage; Baxter Lane Ditch; Newtown Area Ditches; Survey Road ditch to Roland Creek; Summit Farms culvert and ditches; and NC 168 culverts.

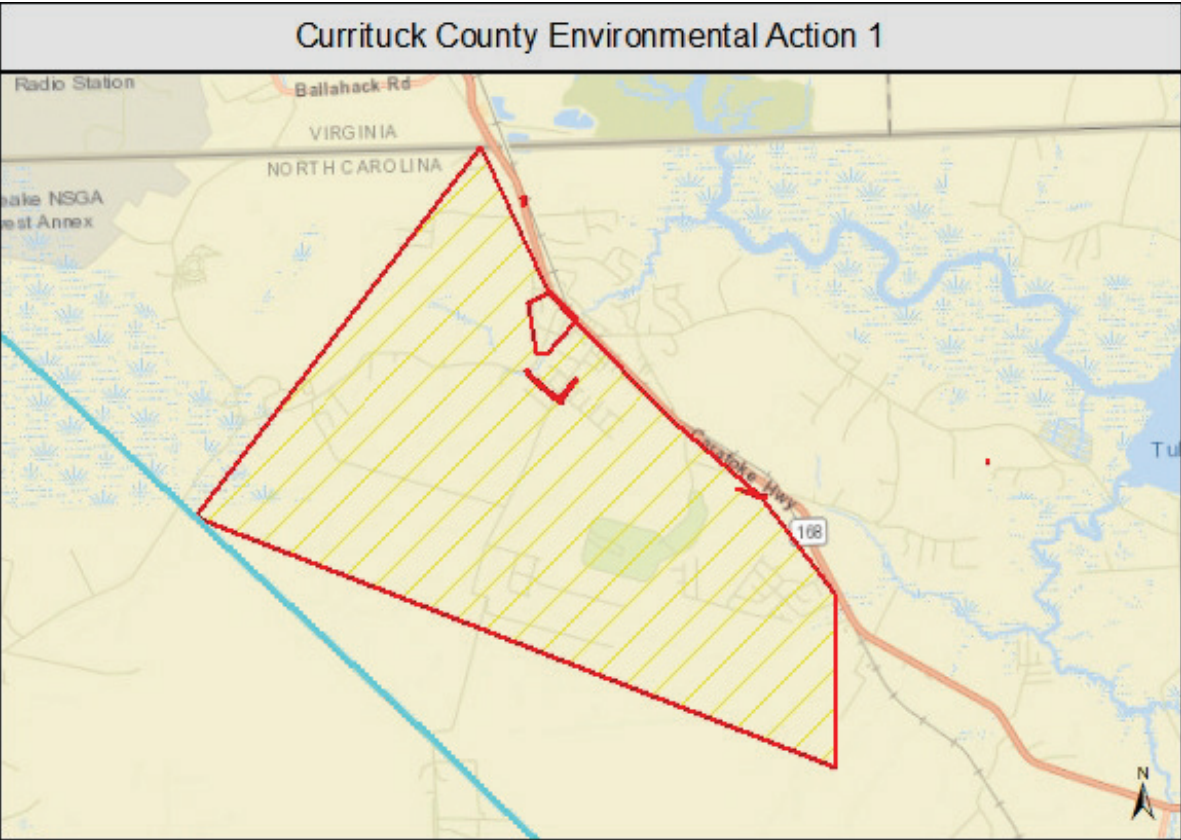


Figure 25. Environmental Action 1: Moyock Area Drainage Study

Environmental Action 1: Moyock Area Drainage Study

County: Currituck

Priority Grouping: Medium Priority

Priority Ranking: 13

Project Timeframe: 1-2 years

Location: Moyock

Project Summary: Moyock Area Drainage Study: Water cannot flow across NC 168 and floods roads, homes, and farms in Moyock west of NC 168. In coordination with USACE and NCDOT, fund a drainage study for the Moyock area west of NC 168 to identify improvements that could reduce flood damage to surrounding areas. Drainages to be included in this study include: Eagle Creek, Western Canal, and Roland Creek Canals; Moyock Service District ditches #1-6; Ranchland drainage; Baxter Lane Ditch; Newtown Area Ditches; Survey Road ditch to Roland Creek; Summit Farms culvert and ditches; and NC 168 culverts.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Significant flooding occurred throughout the Moyock area as a result of Hurricane Matthew. Flooding was exacerbated by insufficient drainage canals and culverts to allow stormwater flow.	N/A
Consistent with existing plans (describe points of intersection/departure)	The proposed project is consistent with goals stated in the Albemarle Regional Hazard Mitigation Plan for Currituck County (CUR3: Prepare stormwater drainage studies and planning for mitigation of known problem areas).	Agree
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree
Explain any benefits or impacts to the economy of the county from this project.	Results of this study could reduce potential flooding of agricultural lands if implemented.	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	100-200 year event	Agree
How many public facilities are involved in this project (buildings and infrastructure)?	>6	Agree
Is coordination with other communities/counties needed to complete this project?	No	Agree
Is this project consistent with Federal Laws	Yes	Agree
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Medium to high confidence	N/A
What impact will this action have on the local economy/tax base?	Less than 25%	Agree
What impacts to the environment of the county will result from this project?	Results of this study could reduce potential flooding if implemented.	N/A
What is the capability of the local government to administer this project?	High	Agree
What is the financial range of this project?	\$251K - \$500K	Agree
What is the level of public support for this project?	Unknown	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

Summary

Implementation has already begun for some of these actions but for those that have not already been funded, the State of North Carolina will begin a process of prioritizing the actions and seeking to match a funding stream to each action. Those that are not matched with a funding source will be added to the State's Unmet Needs Report. Funding for Unmet Needs will be sought through additional funding from Congress and from the North Carolina General Assembly. Any action that cannot be matched to a funding source should be incorporated into the County's Hazard Mitigation Plan for consideration for future funding. It is important to seek to implement as many of these actions as feasible. Doing so will significantly contribute to helping improve the resiliency of North Carolina's communities.