

# **Hurricane Matthew Resilient Redevelopment Plan**

## **Tyrrell County**



May 2017

Version 1.2

CAUTION

CAUTION

CAUTION

CAUTION

CAUTION

## Contents

<b>Change Log .....</b>	<b>iii</b>
<b>Executive Summary .....</b>	<b>iv</b>
<b>1. Background .....</b>	<b>1-1</b>
Summary of Hurricane Matthew Storm Damage .....	1-1
State/Legislative Response .....	1-1
Resilient Redevelopment Planning .....	1-2
Scope of the Plan .....	1-2
Local Participation and Public Engagement .....	1-3
Data, Assumptions, and Methodologies .....	1-4
<b>2. County Profile.....</b>	<b>2-1</b>
Demographic Profile .....	2-1
Population .....	2-1
Population Change (2000 to 2010) .....	2-1
Age .....	2-2
Race and Ethnicity .....	2-2
Limited English Proficiency .....	2-2
Poverty .....	2-2
Low and Moderate Income Individuals .....	2-2
Median Household Income .....	2-3
Zero Car Households .....	2-3
Commuting: Travel Time to Work, Means of Transportation .....	2-3
Economic/Business Profile .....	2-5
Labor Force .....	2-5
Major Employers .....	2-6
Economic Development .....	2-6
Infrastructure Profile.....	2-7
Transportation .....	2-7
Education .....	2-7
Water.....	2-7
Power .....	2-8
Environmental Profile .....	2-8
Water Resources .....	2-8
Natural and Managed Areas .....	2-8
Biodiversity and Wildlife Habitat.....	2-8
Administrative Profile .....	2-8
<b>3. Storm Impact .....</b>	<b>3-1</b>
Rainfall Summary.....	3-1
Housing .....	3-1

Economics / Business / Jobs ..... 3-3

Infrastructure ..... 3-3

Ecosystems / Environment ..... 3-5

**4. Strategies for Resilient Redevelopment..... 4-1**

    Housing Strategies..... 4-2

    High Priority Housing Strategies ..... 4-2

    Economic Development Strategies ..... 4-9

    High Priority Economic Development Strategies ..... 4-9

    Medium Priority Economic Development Strategies ..... 4-11

    Infrastructure Strategies..... 4-13

    High Priority Infrastructure Strategies ..... 4-13

    Medium Priority Infrastructure Strategies ..... 4-26

    Medium Priority Environmental Strategies ..... 4-30

    Summary..... 4-34

# 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.<sup>1</sup> 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.

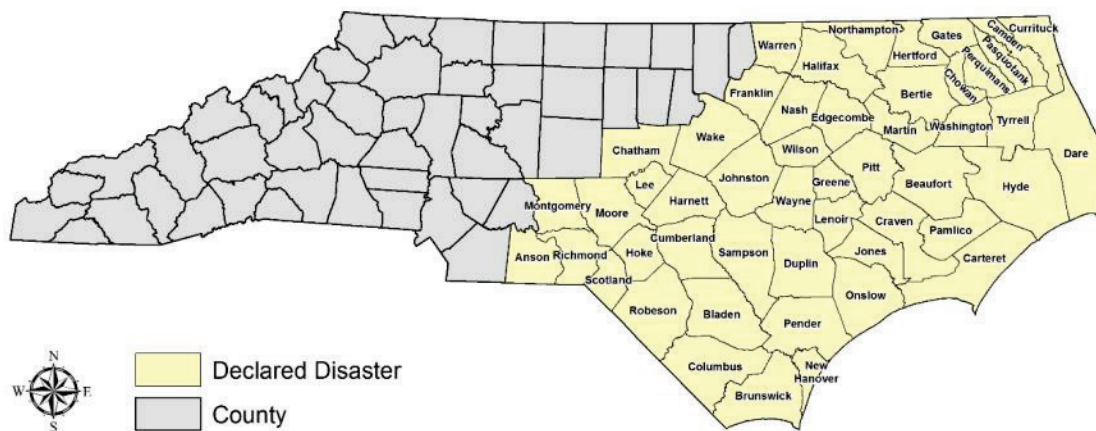


Figure 1. NCRRP Counties

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.

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.

<sup>1</sup> 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, Tyrrell County has identified 15 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	2
Infrastructure	8
Environment	2
<b>Grand Total</b>	<b>15</b>

**Table 1. Tyrrell County Summary of Projects by Pillar**





# 1. Background

# 1. Background

## 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.<sup>2</sup>

## 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.

---

<sup>2</sup> 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) 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.

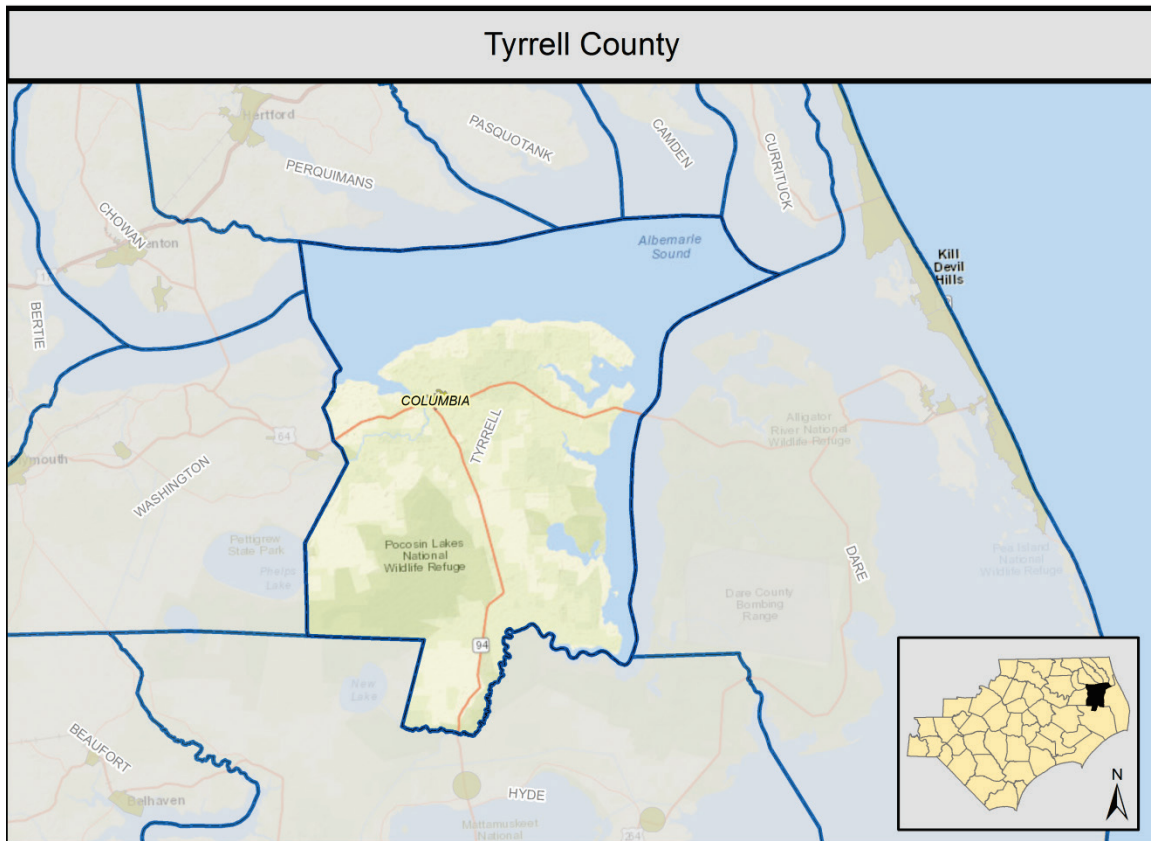


Figure 2. Tyrrell County and Neighboring Counties

## 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.





## 2. County Profile



## 2. County Profile

Tyrrell County is located in eastern North Carolina adjacent to the Albemarle Sound. It has one town: Columbia. Its current population is 4,152. This section provides a profile of housing, economics, infrastructure, environment, and administration within Tyrrell County.

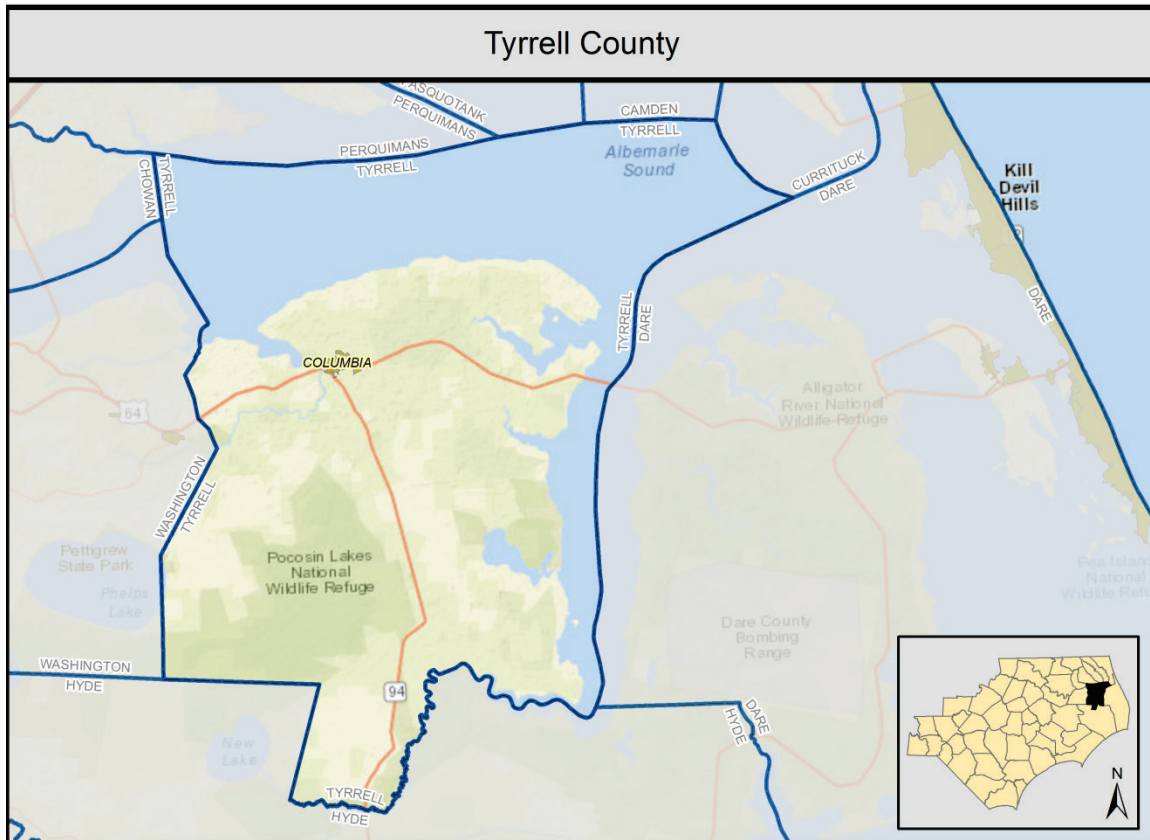


Figure 3. Tyrrell Base Map

### Demographic Profile

Demographics for Tyrrell County and the town of Columbia are summarized and compared to statewide averages in this profile. The demographic data are from the 2000 Census, 2010 Census, and 2011-2015 American Community Survey five-year estimates.

### Population

Tyrrell County has a population of 4,152. Columbia is the most populous place within Tyrrell County with a population of 795.<sup>3</sup>

### Population Change (2000 to 2010)

The Tyrrell County population grew by about 6 percent between the 2000 and 2010 Census. In 2000 the population was 4,149 and in 2010 it was 4,407. The population increased by 258 people, or about 6 percent. In comparison, North Carolina grew by 19 percent from 8,049,313 people in 2000 to 9,535,483 in 2010.<sup>4</sup>

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

## Age

The median age in Tyrrell County is 44, and the town of Columbia is 42. Both groups are similar to the North Carolina median age of 42.<sup>3</sup>

## Race and Ethnicity

Tyrrell County is mostly White (60 percent) and African American (30 percent) with other races constituting the remaining 10 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.

The population of the Town of Columbia is approximately 41 percent White, 37 percent African American, 3 percent American Indian or Alaska Native, and 19 percent of the population identifies as another race.

The Latino population in Tyrrell County is 10 percent compared to 9 percent for North Carolina. The population for the Town of Columbia is 30 percent Latino.

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
<b>Columbia</b>	41.4%	36.6%	2.6%	1.6%	0.0%	15.6%	2.4%	58.9%
<b>North Carolina</b>	69.5%	21.5%	1.2%	2.5%	0.1%	3.0%	2.4%	30.5%

**Table 2. Tyrrell County Race and Ethnicity**

## Limited English Proficiency

Limited English Proficiency (LEP) is defined as populations 18 years or older that speak English less than very well. In Tyrrell 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 Tyrrell County, the Town of Columbia has the largest LEP population (8 percent). The primary language group for LEP populations in the Town of Columbia is Spanish.<sup>5</sup>

## Poverty

In Tyrrell County, 22 percent of the population is below the poverty level compared to 17 percent of the North Carolina population. In the Town of Columbia, 30 percent of the population is below the poverty level.<sup>6</sup>

## Low and Moderate Income Individuals

In Tyrrell County, 49 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. In comparison, 39 percent of the North Carolina population is classified as LMI.<sup>7</sup>

<sup>4</sup> 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

<sup>5</sup> Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B02001, Race and Table B03002, Hispanic or Latino Origin by Race

<sup>6</sup> Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table C17002, Ratio of Income to Poverty Level in the Past 12 Months

<sup>7</sup> 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/>

## Median Household Income

The median household income of the population 25 to 64 years old is \$37,067 in Tyrrell County and \$34,936 in the Town of Columbia compared to \$53,000 in North Carolina.<sup>8</sup>

## Zero Car Households<sup>9</sup>

In Tyrrell County, 11 percent of households do not have a vehicle available compared to 7 percent of North Carolina households. In the Town of Columbia, 19 percent of households do not have a vehicle.

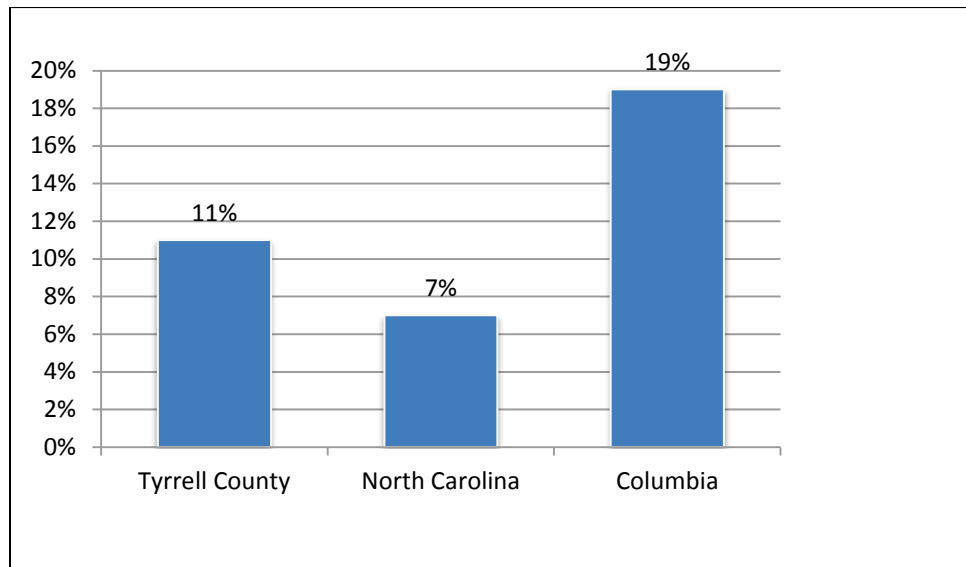


Figure 4. Zero Car Households by Percentage

## Commuting: Travel Time to Work, Means of Transportation<sup>10</sup>

The majority of Tyrrell County residents commute alone to work by vehicle, 78 percent, which is similar to North Carolina average of 81 percent. In the Town of Columbia, 76 percent of commuters commute alone.

Public transportation is not used by commuters in Tyrrell County; 1 percent of North Carolina commuters use public transportation. Twelve percent of residents use a carpool or work from home.

<sup>8</sup> Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B19094, Median Household Income in the Past 12 Months.

<sup>9</sup> Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B25044, Tenure by Vehicles Available

<sup>10</sup> 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)

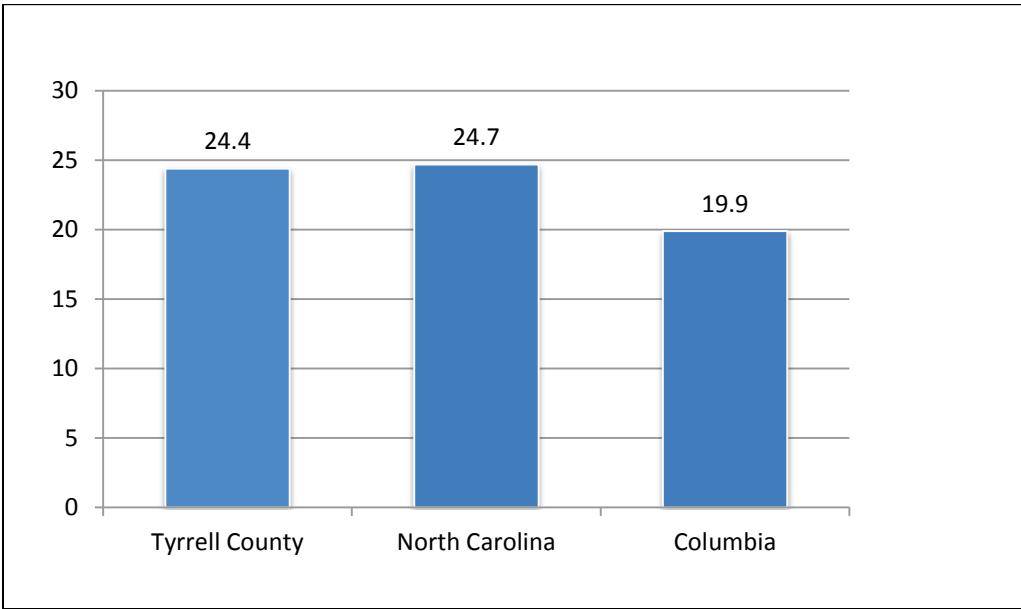


Figure 5. Mean Commute Time to Work in Minutes

**Housing Profile<sup>11</sup>**

Tyrrell County has 2,003 housing units, 63 percent of which are single-family homes, 36 percent multi-family units, and 34 percent manufactured housing.

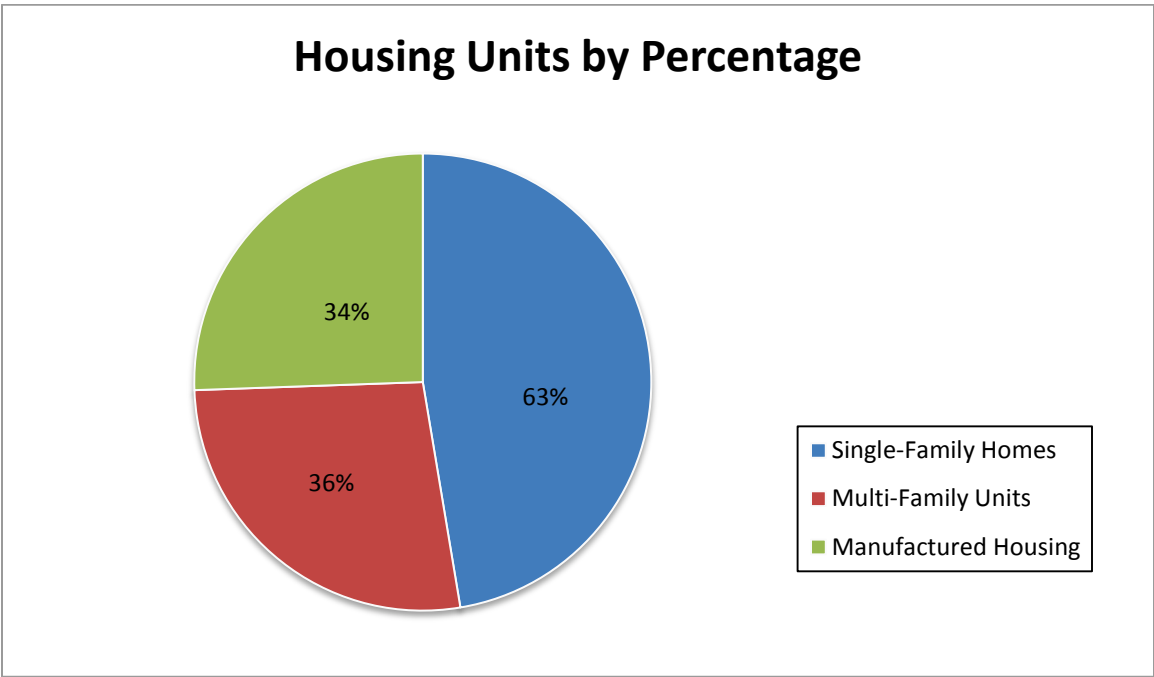


Figure 6. Housing Units by Percentage

In Tyrrell County, 28 percent of housing units are vacant, which is substantially more than the 15 percent for North Carolina. Thirty one percent of housing units in the Town of Columbia are vacant.

<sup>11</sup> 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

Of the occupied housing units, 74 percent are owner-occupied compared to 65 percent in North Carolina; 26 percent are renter-occupied compared to 35 percent in North Carolina.

The median housing value in Tyrrell County is \$98,800. In comparison, the median housing value in North Carolina is \$140,000. The median housing value in the Town of Columbia is \$97,500.

According to the National Housing Preservation Database, Tyrrell County has 75 affordable housing units.

### Economic/Business Profile

A mix of industries provides employment in the County.<sup>12</sup>

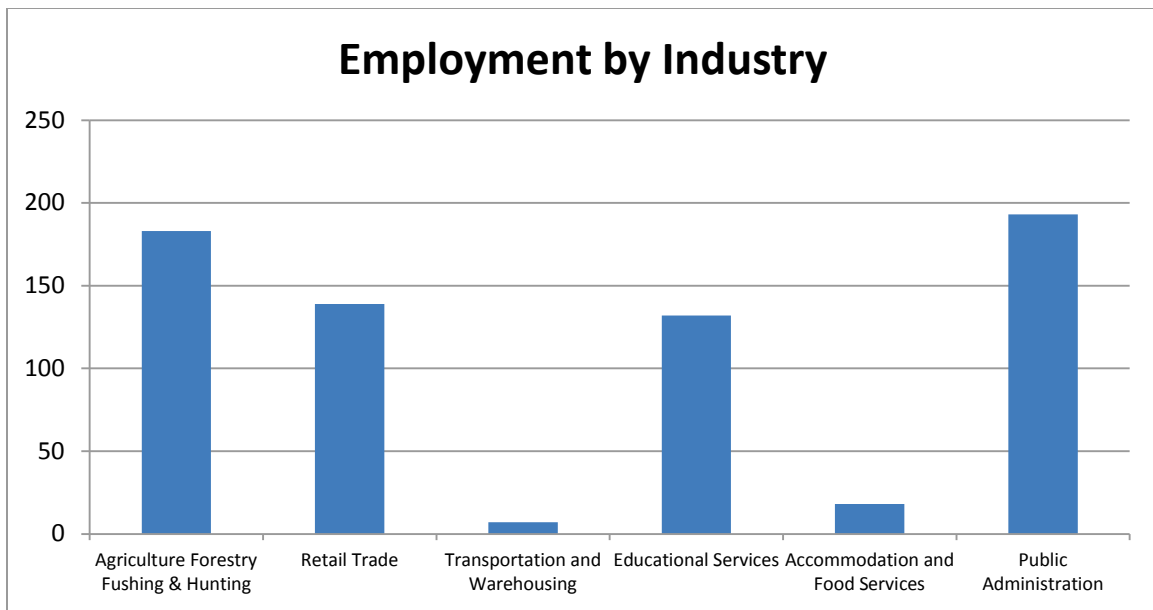


Figure 7. Employment by Industry

According to the U.S. Census Bureau's American Fact Finder, the largest concentrations of jobs in Tyrrell County are in educational services, health care, and social assistance (18 percent), construction (14 percent), and agriculture and fishing (13 percent).<sup>13</sup> According to the US Census Bureau's Longitudinal-Employer Household Dynamics Program, the highest concentration of jobs within Tyrrell County is in Columbia.<sup>14</sup>

### 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 Tyrrell County is 1,519. The civilian unemployment rate in Tyrrell County is 8.6 percent. In comparison, the North Carolina civilian unemployment rate is 5.1 percent.<sup>15</sup>

<sup>12</sup> Source: AccessNC – North Carolina Department of Commerce, April 2017:  
<http://accessnc.nccommerce.com/DemoGraphicsReports/pdfs/countyProfile/NC/37065.pdf>

<sup>13</sup> Source: US Census Bureau American Fact Finder, DP03, Selected Economic Characteristics, 2011-2015

<sup>14</sup> Source: US Census Bureau, American Community Survey 5-year Estimates (2011-2015), Table B02001, Race and Table B03002, Hispanic or Latino Origin by Race

<sup>15</sup> 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>

## Major Employers

The three employers with the largest number of employees in Tyrrell County represent the manufacturing, natural resources and farming, and retail trade industries, and are listed in order of total employees in the legend of the figure below.

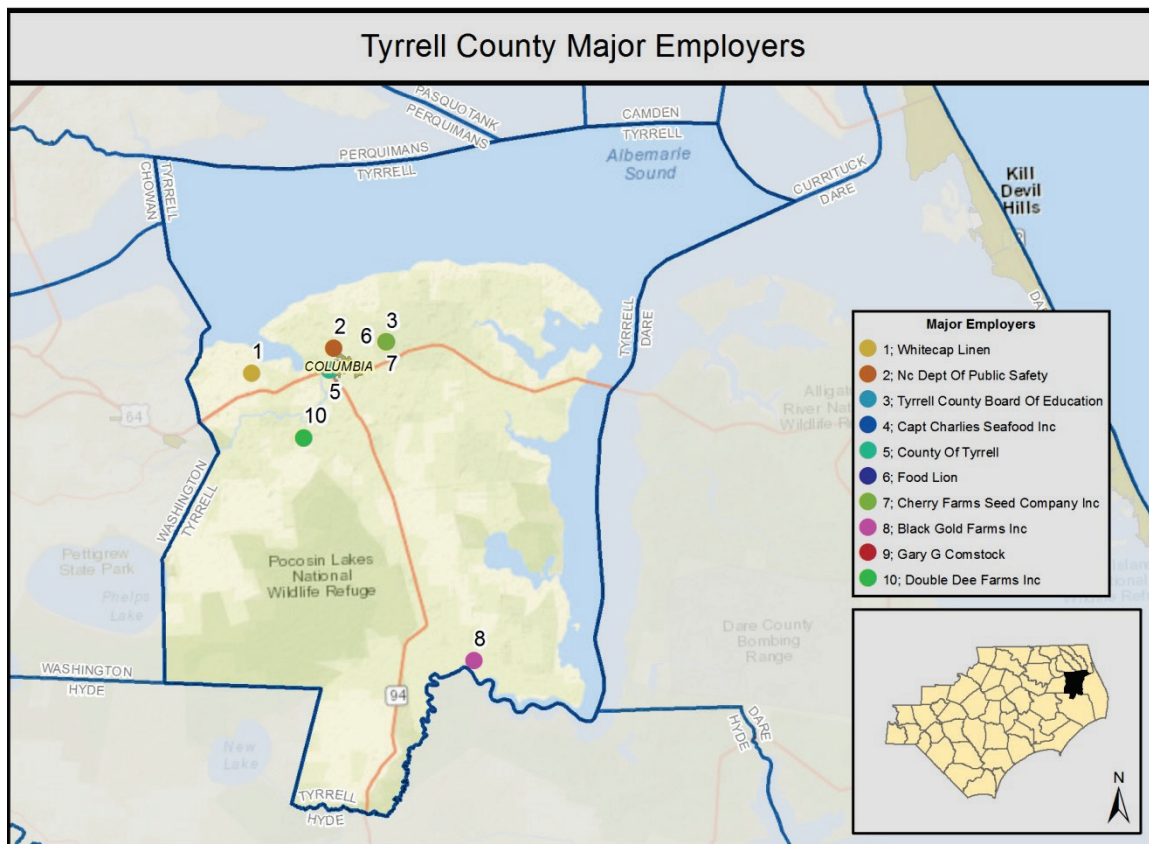


Figure 8. Major Employers by Number of Employees

## Economic Development<sup>16</sup>

Tyrrell County collaborated with the Albemarle Commission and nine other eastern North Carolina counties to develop a Comprehensive Economic Development Strategy in 2012.

The plan shows that the economic impact of tourism in Tyrrell County is approximately \$3 million each year.

<sup>16</sup> Source: Comprehensive Economic Development Strategy, Albemarle Commission, 2012

## Infrastructure Profile

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

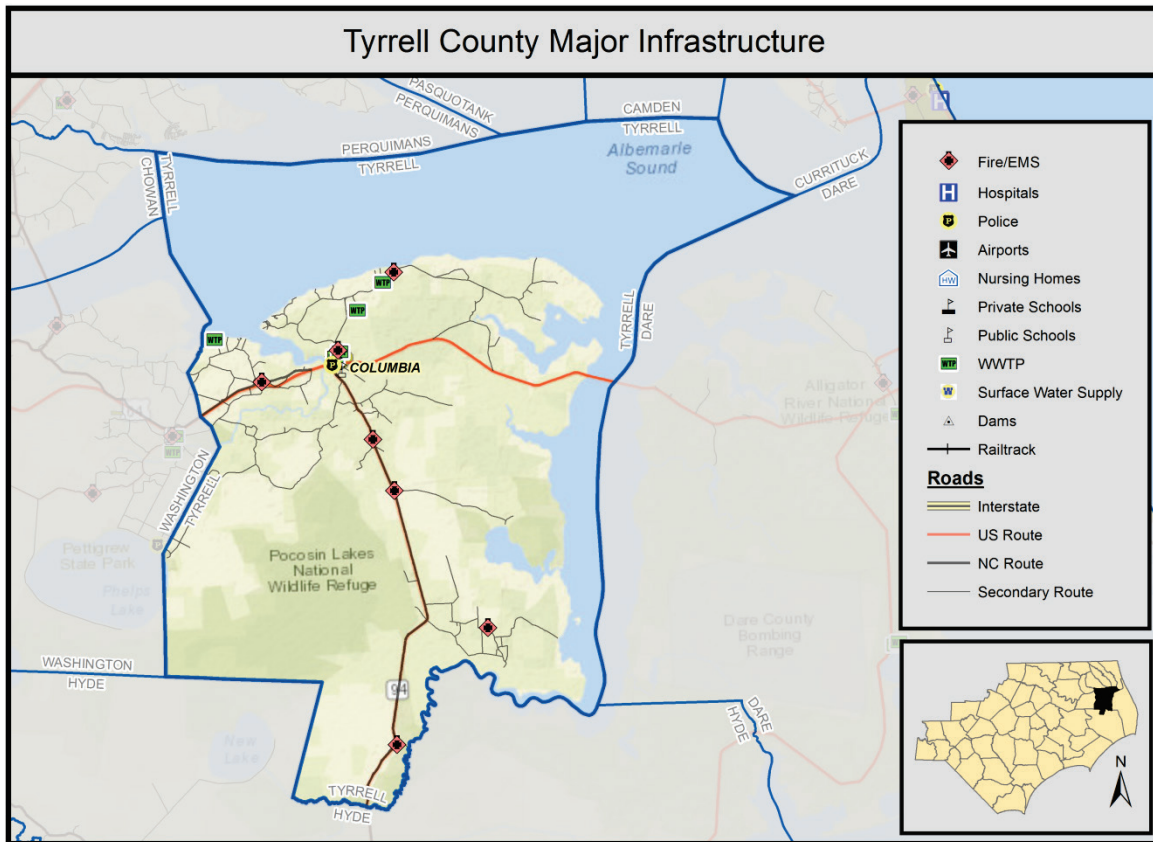


Figure 9. Tyrrell County Major Infrastructure

## Transportation

Major highways in Tyrrell County are U.S. 64 and NC 94.

## Education<sup>17</sup>

The Tyrrell County School system includes Columbia High School, Columbia Middle School, and Tyrrell Elementary School.

For residents 25 years of age and older, 70 percent have a high school diploma or higher and 8 percent have a bachelor's degree or higher.

## Water

The Tyrrell County Water/Sewer Department manages the County's public water supply. The water supply comes from four separate wells.<sup>18</sup>

<sup>17</sup> Sources: Tyrrell County Schools, <http://www.tyrrell.k12.nc.us/>; US Census Bureau American Fact Finder, DP02, Selected Social Characteristics, 2011-2015

<sup>18</sup> Source: pre2015 Annual Drinking Water Quality Report, <http://tyrrellcounty.org/images/20160328103110.pdf>.



## Power

Residents of Tyrrell County receive electric power from Dominion Resources.<sup>19</sup>

## Environmental Profile

Water resources and natural, managed areas, for Tyrrell County are summarized in the sections that follow.

### Water Resources

Albemarle Sound forms the northern border of Tyrrell County. The Alligator River forms the eastern boundary of Tyrrell County.

### Natural and Managed Areas

Pocosin Lakes National Wildlife Refuge is located primarily in Tyrrell County and its headquarters is in Columbia.

### Biodiversity and Wildlife Habitat

The NC Natural Heritage Program produces a biodiversity and wildlife habitat assessment for the state. Tyrrell County is home to nine species whose protection status is “federally listed:”

- Shortnose Sturgeon (freshwater fish).
- Atlantic Sturgeon (freshwater fish).
- American Alligator (reptile).
- Red Wolf (mammal).
- Eastern Big-eared Bat (mammal).
- Lake Phelps Killifish (freshwater fish)
- Bald Eagle (bird).
- Red-Cockaded Woodpecker (bird).
- Black throated Green Warbler (bird).<sup>20</sup>

## Administrative Profile

Tyrrell County is included in the Northeastern NC Regional Hazard Mitigation Plan, which is in the process of being updated. The draft plan was prepared in 2016. When complete, the plan will contain additional detail about Tyrrell County’s capabilities in a number of fields pertinent to implementation of this project.

In terms of administrative capabilities, the relatively small size and limited municipal staff within the county may limit Tyrrell County’s capacity to implement projects described in this plan. Tyrrell County has a County Manager. The Building Inspections Department could also assist with project implementation.<sup>21</sup>

The only incorporated area within Tyrrell County is the Town of Columbia. Applicable Town documents include a Low Impact Development manual. The town has a planning board which may be able to assist with project implementation or provide guidance on these topics; however, the small size of the town and the limited scope

<sup>19</sup> Source: Boyd, Jason O., and WCTI staff, Crews working to restore power, <http://www.wcti12.com/news/work-being-done-to-restore-nearly-300-without-power-in-tideland-service-area/71303594>.

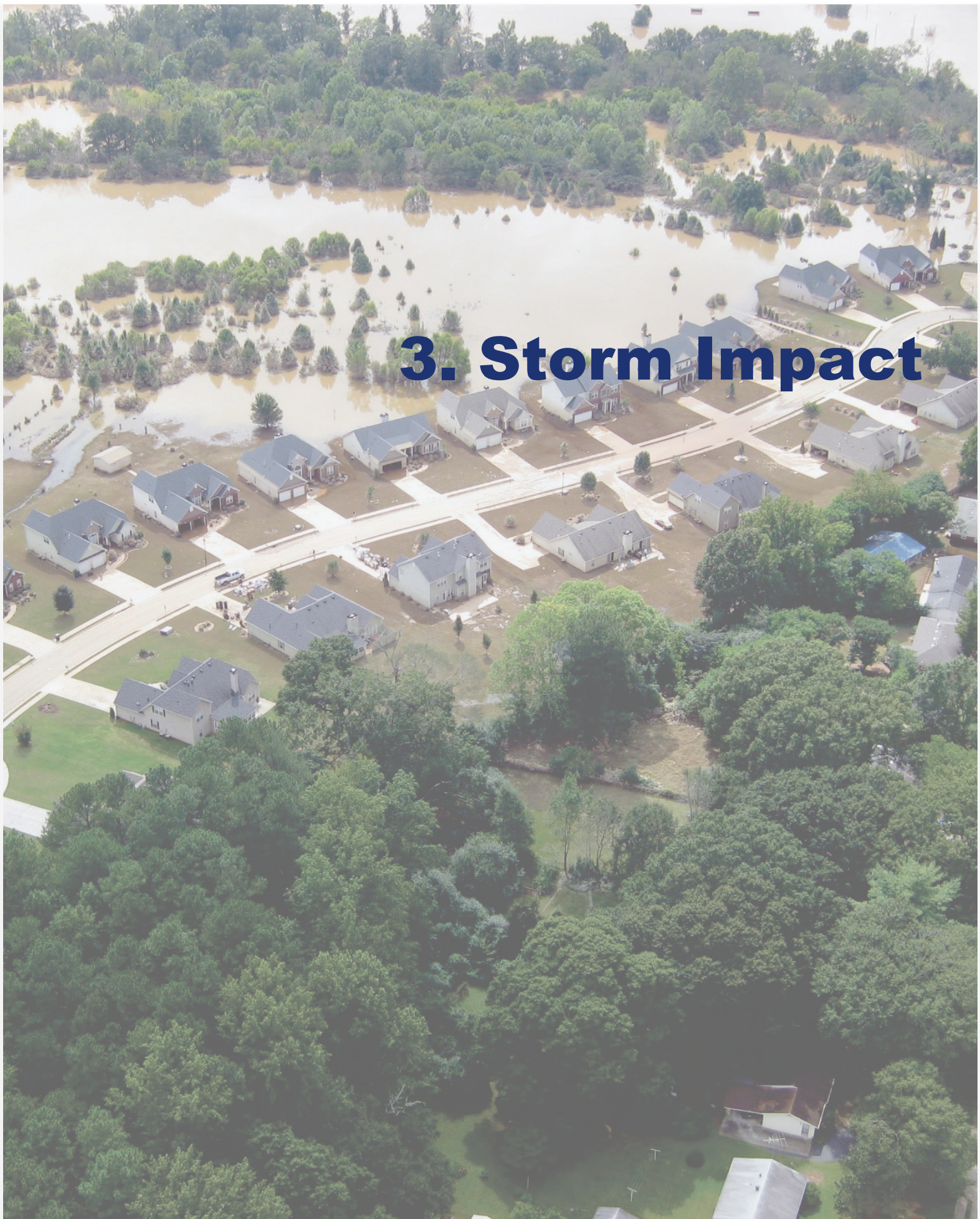
<sup>20</sup> Source: NC Natural Heritage Program

<sup>21</sup> Source: Tyrrell County North Carolina, <http://tyrrellcounty.org/index.php/en/>



of its municipal government may limit the town's capacity. As a result, Columbia will likely need additional assistance in the administration and implementation of projects.





### **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 Tyrrell County is highlighted graphically in the figure below.

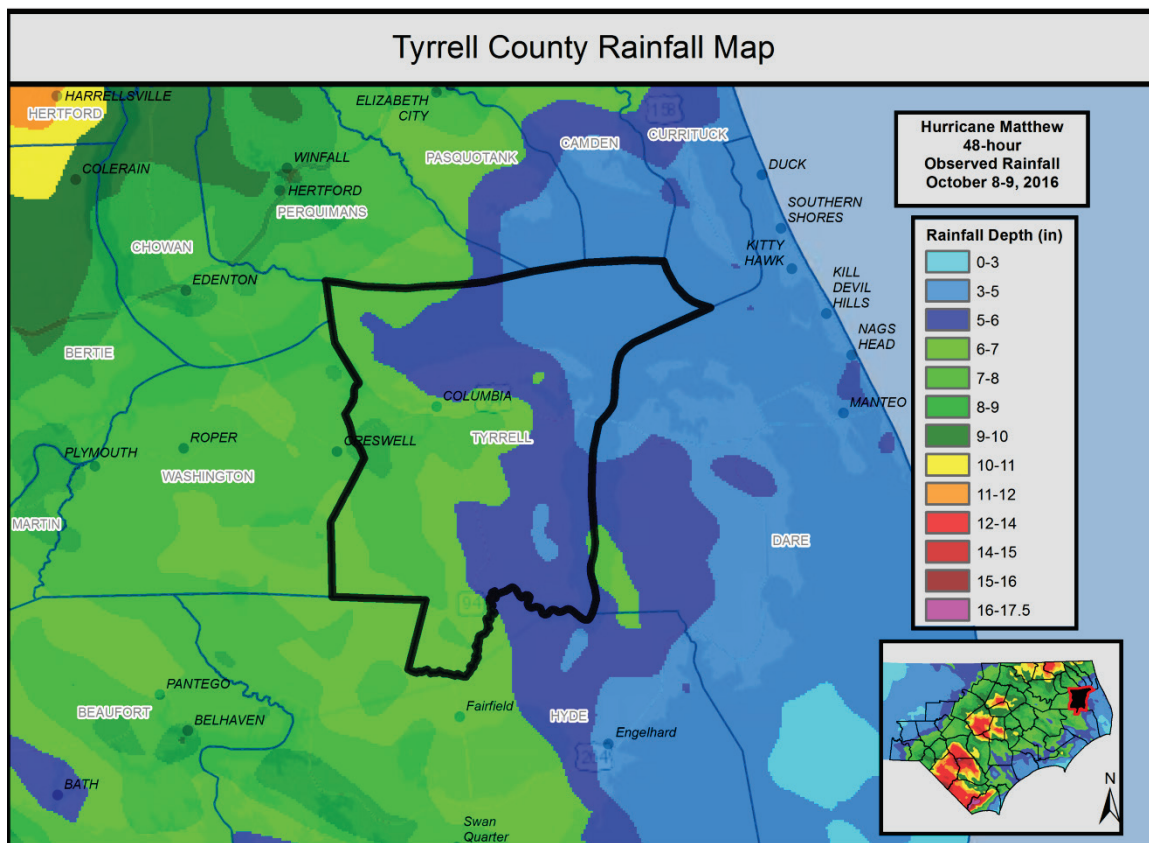


Figure 10. 48-hour Observed Rainfall Depth (October 8-9, 2016)

#### Housing

According to Individual Assistance claims as of March 28, 2017, 288 houses in Tyrrell County were impacted 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. 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. With that in mind, the planning team attempted to take a comprehensive look at both Hurricane Matthew impacts and any historic impacts that local officials felt would validate areas that should be considered at high risk to future flooding.

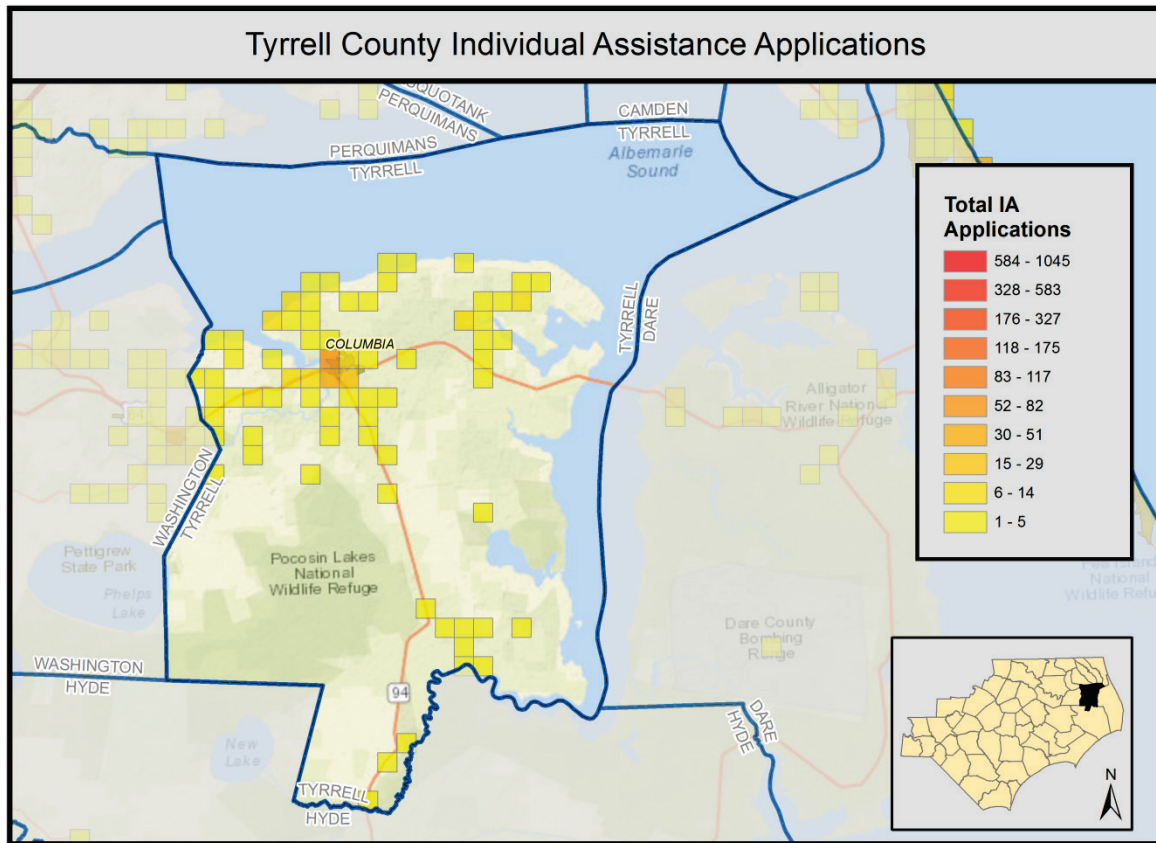


Figure 11. Tyrrell County IA Applications by Area

The bullets below summarize some of the major impacts to housing identified by local officials in multiple meetings.

- Homes Flooded from Hurricane Matthew:** Approximately 1,500 homes in Tyrrell County were built before 1978 and do not comply with its flood damage prevention ordinance. The largest numbers of homes that continue to be at risk of flooding are in the Alligator community; along Albemarle Sound; and in the Town of Columbia.
- Homes At-Risk of Future Flooding:** Unless property owners agree to having the older homes elevated and the County can fund elevation projects, these 1,500 homes are at risk of flooding in the future.

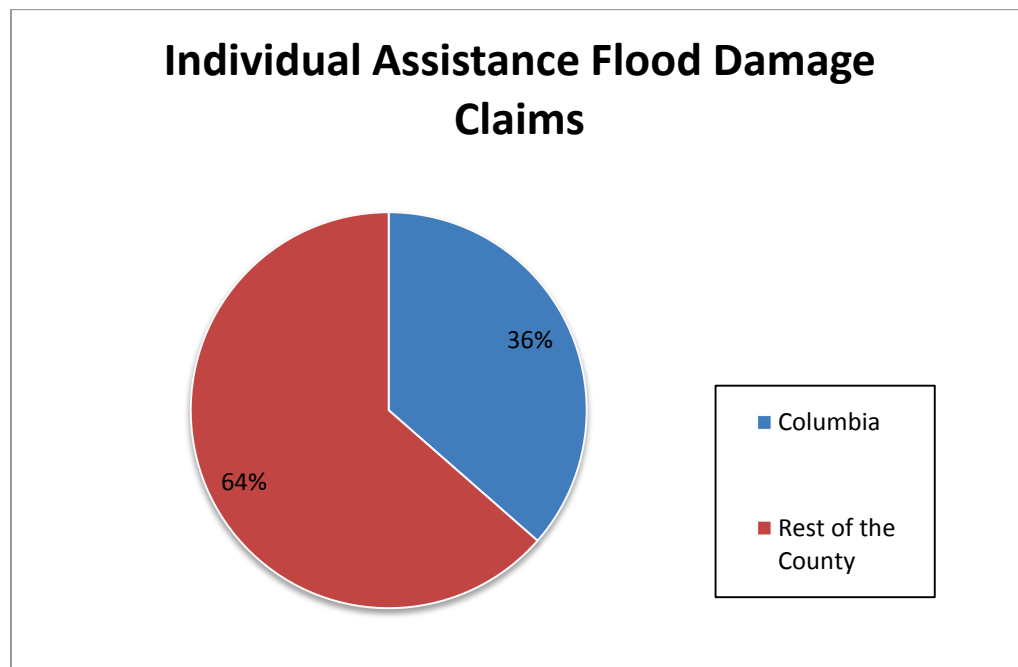


Figure 12. IA Flood Damage Claims by Area

### Economics / Business / Jobs

Local officials in multiple meetings identified impacts from Hurricane Matthew to the economy/businesses/jobs in Tyrrell County.

- **Gum Neck Area Impacted:** The dike that surrounds agricultural land in the Gum Neck area of the County is not adequate for levels of flooding experienced during Hurricane Matthew. The dike protects approximately 15,000 acres of cropland as well as approximately 100 single family homes.
- **Road Closures:** Sections of State Routes 1208 and 1209 flooded during Hurricane Matthew and remained flooded under up to 3 feet of water for up to 17 days. Bypassing the flooded section of road entailed a detour of approximately 45 miles. This flooding precluded access to the Tyrrell Prison Work Farm that was developed by the State as an economic development project for Tyrrell County.

### Infrastructure

There were no Public Assistance (PA) claims made in Tyrrell County as a result of Hurricane Matthew; however, County infrastructure and public safety were two of the greatest areas of concern in the wake of the storm. The bullets below summarize some of the major impacts to infrastructure that were identified by local officials from the event.

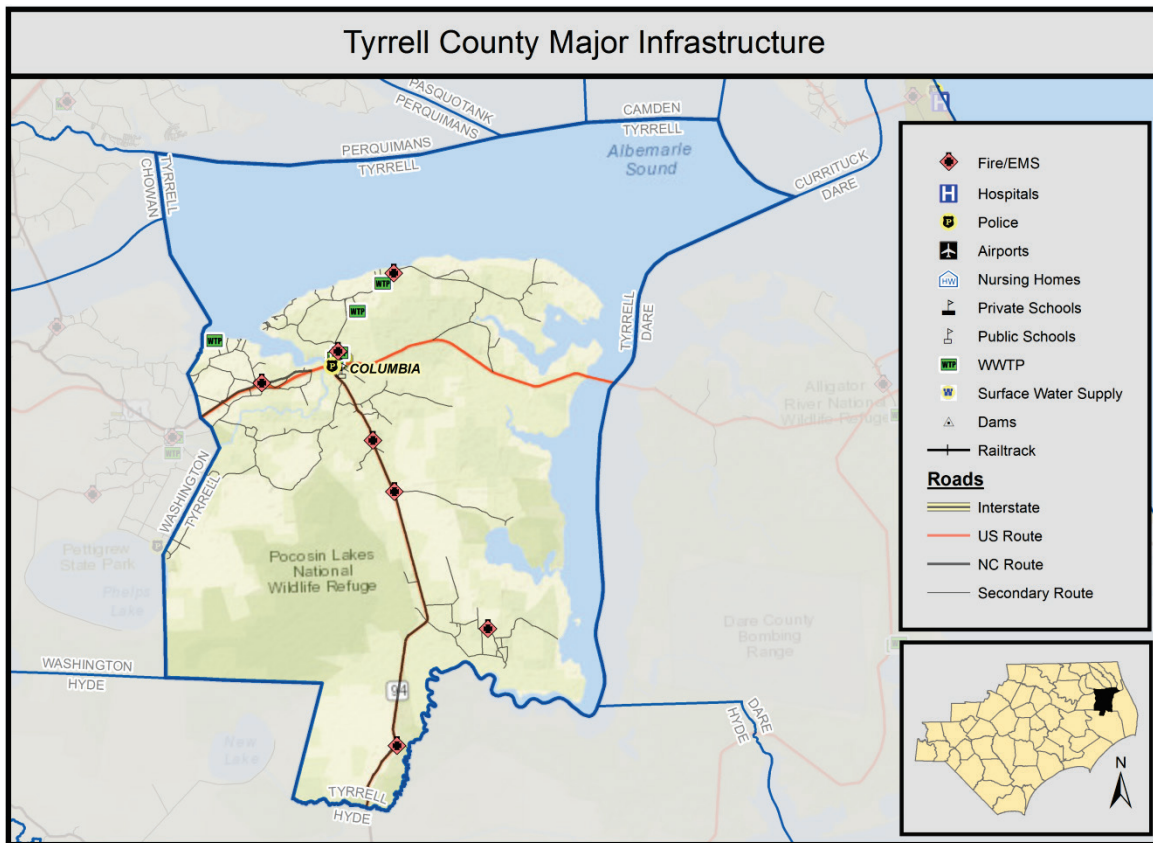


Figure 13. Tyrrell County Infrastructure Damage

- **Public Safety Issues:** Tyrrell County has cooperated with Dare and Hyde Counties to build a new Emergency Operations Center (EOC). The EOC is physically located in Dare County. The facility lacks a satellite-based 911 back-up system and reverse 911 system, which threatens the ability of residents to request emergency services during periods of power outages and the ability of the County to warn residents of dangers.
- **Road/Bridge Flooding:** Road overtopping is a common occurrence in Tyrrell County and impacted a number of different locations 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. These locations include:
  - Alligator Canal, which runs south to north parallel to Pledger Harbor Road into Albemarle Sound
  - Grendel Hill Canal, which is a U-shaped canal that goes around the Town of Columbia
  - Riders Creek Canal, which is to the south of the Town of Columbia
  - South Fork Creek Canal, which goes into Phelps Lake on the western border of the County
  - U.S. Route 64 to the west of the Town of Columbia blocks the natural flood of floodwaters and causes tremendous flooding on its north side
- **County Facilities:** The County encountered three major problems in County facilities during and after Hurricane Matthew:

- County Courthouse was not usable due to flooding. The Courthouse has a generator that is sufficient for powering the facility. However, utility systems and switches need to be elevated above flood waters.
- County Department of Social Services building on Main Street was flooded and severely damaged; Social Services department continues to operate from a temporary location.
- County Utilities/Maintenance department facility was flooded and severely damaged along with Agricultural Extension Service offices and the County Senior Center.

## **Ecosystems / Environment**

Environmental damage caused by Hurricane Matthew included pollution of land and water wells due to septic system failure and continued erosion of the shoreline along Bull Bay.

- **Septic System Failure:** The County has a sanitary sewer system with adequate capacity for expansion. The system could be extended from the Alligator community along Goat Neck Road toward Albemarle Sound to alleviate the problem of septic system failure in that area.
- **Shoreline Erosion:** The County has experienced severe erosion in two locations near the Town of Columbia and Bull Bay. Erosion in the past has forced the North Carolina State 4-H Center to relocate. The worst areas of shoreline erosion are from Folly Landing to Bulls Bay Drive along the Scuppernong River and from Legion Beach Road to Waterfront Road along Bull Bay.



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 (blue, grey, brown) are visible, some partially submerged. A network of roads and paths crisscrosses the area, some of which are also underwater. In the foreground, there is a dense forest of green trees. The overall scene depicts a significant natural disaster impact on a community.

# **4. Strategies for Resilient Redevelopment**



## 4. Strategies for Resilient Redevelopment

This section provides details about the resilience and revitalization strategies and actions identified in Tyrrell 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	2
Infrastructure	8
Environment	2
<b>Grand Total</b>	<b>15</b>

**Table 4. Tyrrell County Summary of Projects by Pillar**

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

Pillar	Action Name	Priority	Overall Ranking
Infrastructure	Tyrrell Infrastructure Action 7: Relocate County Services	High	1
Housing	Tyrrell Housing Action 1: Elevate 20 Homes in the Alligator Community	High	2
Housing	Tyrrell Housing Action 2: Elevation 20 Homes near Albemarle Sound	High	3
Housing	Tyrrell Housing Action 3: Elevate 20 Homes in the Town of Columbia	High	4
Economic Development	Tyrrell Economic Development Action 2: Rebuild Section of Route 1208 / Road Street in the Town of Columbia	High	5
Infrastructure	Tyrrell Infrastructure Action 8: Elevate Utilities in Courthouse	High	6
Infrastructure	Tyrrell Infrastructure Action 3: Retrofit Stormwater Drainage System – Grendle Canal	High	7
Infrastructure	Tyrrell Infrastructure Action 2: Retrofit Stormwater Drainage System – Alligator Canal	High	8
Infrastructure	Tyrrell Infrastructure Action 5: Retrofit Stormwater Drainage System – South Fork Creek Canal	High	9

Pillar	Action Name	Priority	Overall Ranking
Infrastructure	Tyrrell Infrastructure Action 4: Retrofit Stormwater Drainage System – Rider Creek Canal	High	10
Environment	Tyrrell Environment Action 1: Extend Sanitary Service District	Medium	11
Economic Development	Tyrrell Economic Development Action 1: Strengthen Existing Dike and Upgrade Water Pumps in Gum Neck Area	Medium	12
Infrastructure	Tyrrell Infrastructure Action 1: Provide 911 System Back-up and Reverse 911 System	Medium	13
Environment	Tyrrell Environment Action 2: Living Shoreline	Medium	14
Infrastructure	Tyrrell Infrastructure Action 6: Retrofit Stormwater Drainage System – U.S. 65 to West of Columbia	Medium	15

**Table 3. 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

### High Priority Housing Strategies

Pillar	Action Name	Priority	Overall Ranking
Housing	Tyrrell Housing Action 1: Elevate 20 Homes in the Alligator Community	High	2
Housing	Tyrrell Housing Action 2: Elevation 20 Homes near Albemarle Sound	High	3
Housing	Tyrrell Housing Action 3: Elevate 20 Homes in the Town of Columbia	High	4

**Table 4. Tyrrell High Priority Housing Summary**

These three projects represent the housing strategies that Tyrrell County indicated are the highest priority to address.

Additional detail on the projects can be found below:

- **Elevate 20 Homes in the Alligator Community:** Many homes are more than 50 years old and first floors are not elevated to, or above, the flood elevation level that has been calculated to have at least a one-percent chance of being equaled or exceeded in any given year.

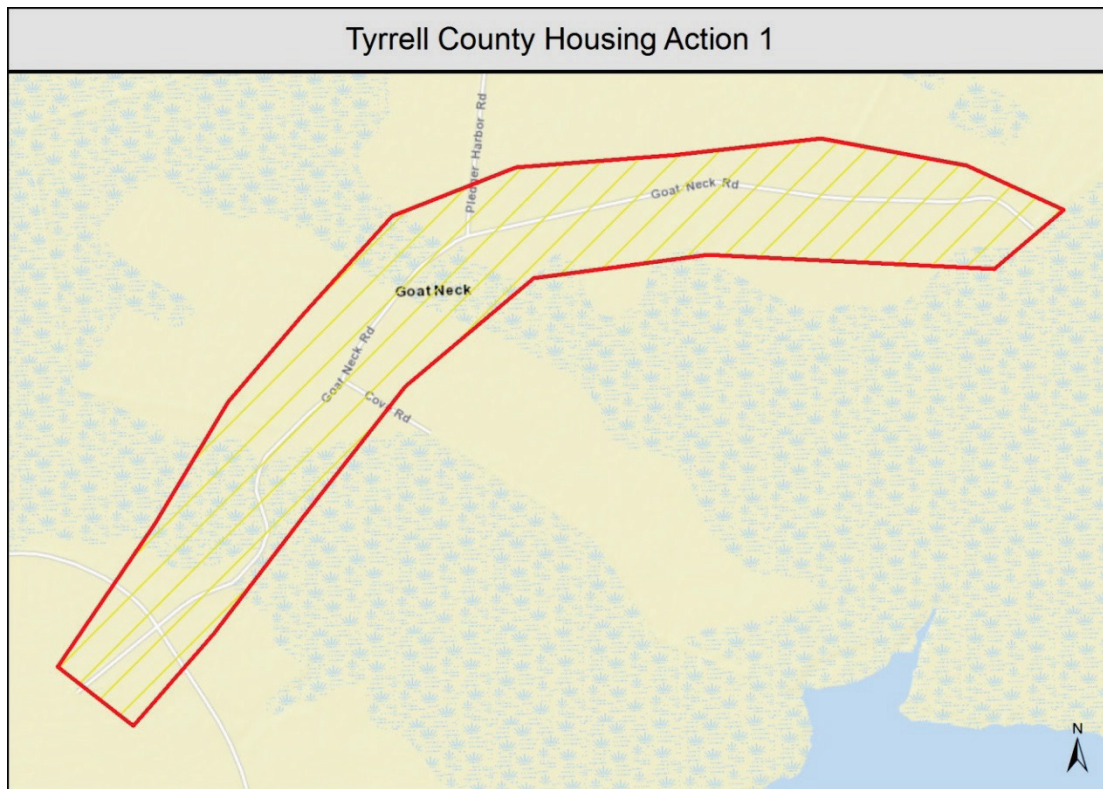


Figure 14: Housing Action 1: Elevate 20 Homes in the Alligator Community

## Housing 1 - Elevate 20 houses in the Alligator Community

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 2

**Project Timeframe:** Within 3 years

**Location:** Alligator community

**Project Summary:** Elevate pre-FIRM homes to bring them into compliance with Tyrrell County / Town of Columbia Flood Damage Prevention Ordinance

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	People in this neighborhood were out of their homes for about two weeks due to flooding caused by Hurricane Matthew.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes. This project is identified on page 5-7 of the Northeast NC Regional Hazard Mitigation Plan (2016) for Tyrrell County	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.	People will not be displaced from their homes and available to return to work as soon as roads re-open post-flood in the future. Also fewer people will require emergency shelter during periods of flooding in the future so there will be a cost-saving to the County.	Agree
For how long will this solution be effective?	More than 50 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?		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?	Unknown	N/A
What impact will this action have on the local economy/tax base?	Unknown	Agree
What impacts to the environment of the county will result from this project?	None identified	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?	High	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	State	Agree

- **Elevate 20 Homes near Albemarle Sound:** Many homes are more than 50 years old and first floors are not elevated to, or above, the flood elevation level that has been calculated to have at least a one-percent chance of being equaled or exceeded in any given year.

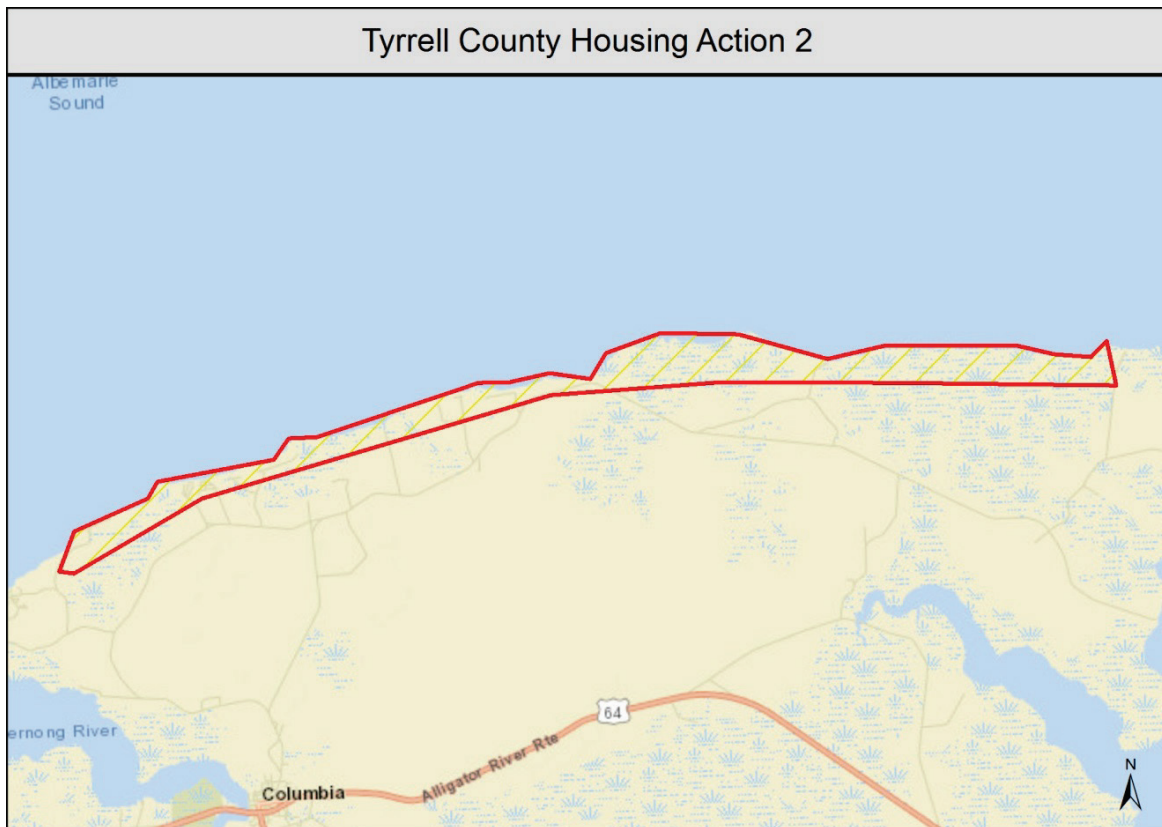


Figure 15. Housing Action 2: Elevate 20 Homes near Albemarle Sound

## Housing Action 2 - Elevate 20 homes near Albemarle Sound

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 3

**Project Timeframe:** 2 to 4 years

**Location:** Near Albemarle Sound

**Project Summary:** Elevate pre-FIRM homes so that first floor is above BFE in accordance with Tyrrell County Flood Damage Prevention Ordinance

Question	Response	Disposition	
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	People in this neighborhood were out of their homes for about two weeks due to flooding caused by Hurricane Matthew.	N/A	
Consistent with existing plans (describe points of intersection/departure)	Yes. This project is identified on page 5-7 of the Northeast NC Regional Hazard Mitigation Plan (2016) for Tyrrell County	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.	People will not be displaced from their homes and available to return to work as soon as roads re-open post-flood in the future. Also fewer people will require emergency shelter during periods of flooding in the future so there will be a cost-saving to the County.	Agree	
For how long will this solution be effective?	More than 50 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?	Unknown	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?	None identified	N/A	
What is the capability of the local government to administer this project?	High	Agree	N/A
What is the financial range of this project?	\$1M+	Agree	N/A
What is the level of public support for this project?	High	Agree	N/A
What is the technical feasibility of this project?	Higher than 75%	Agree	N/A
Who will administer this project?	County	Agree	N/A



- **Elevate 20 Homes in the Town of Columbia:** Many homes are more than 50 years old and first floors are not elevated to, or above, the flood elevation level that has been calculated to have at least a one-percent chance of being equaled or exceeded in any given year.

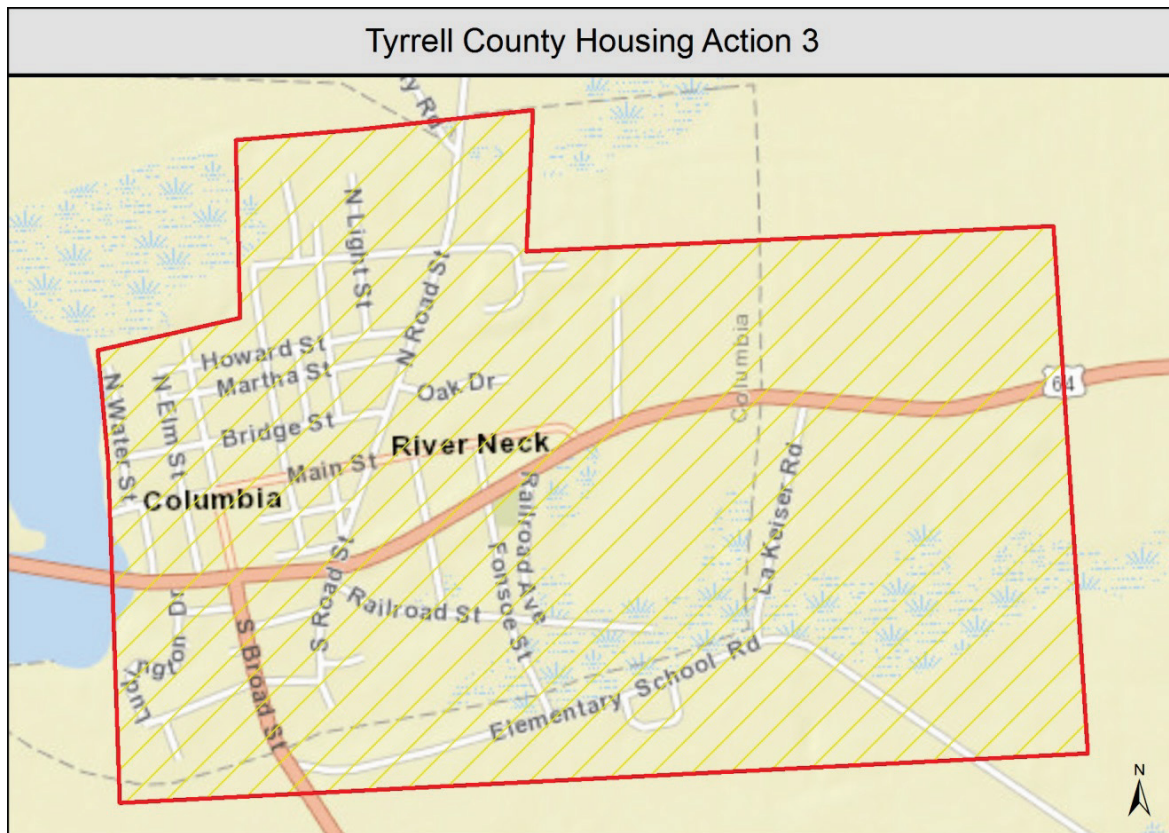


Figure 16. Housing Action 3: Elevate 20 Homes in the Town of Columbia

## Housing Action 3 - Elevate 20 Homes in the Town of Columbia

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 4

**Project Timeframe:** 3 to 5 years

**Location:** Town of Columbia

**Project Summary:** Elevate pre-FIRM homes so that first floor is above BFE in accordance with Tyrrell County / Town of Columbia Flood Damage Prevention Ordinance

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Pre-FIRM houses in this area were built below BFE and were flooded by Hurricane Matthew.	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes. This project is identified on page 5-7 of the Northeast NC Regional Hazard Mitigation Plan (2016) for Tyrrell County	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.	People will not be displaced from their homes and available to return to work as soon as roads re-open post-flood in the future. Also fewer people will require emergency shelter during periods of flooding in the future so there will be a cost-saving to the County.	Agree
For how long will this solution be effective?	More than 50 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?	Unknown	N/A
What impact will this action have on the local economy/tax base?	Unknown	Agree
What impacts to the environment of the county will result from this project?	None identified	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?	High	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	Local	N/A



## Economic Development Strategies

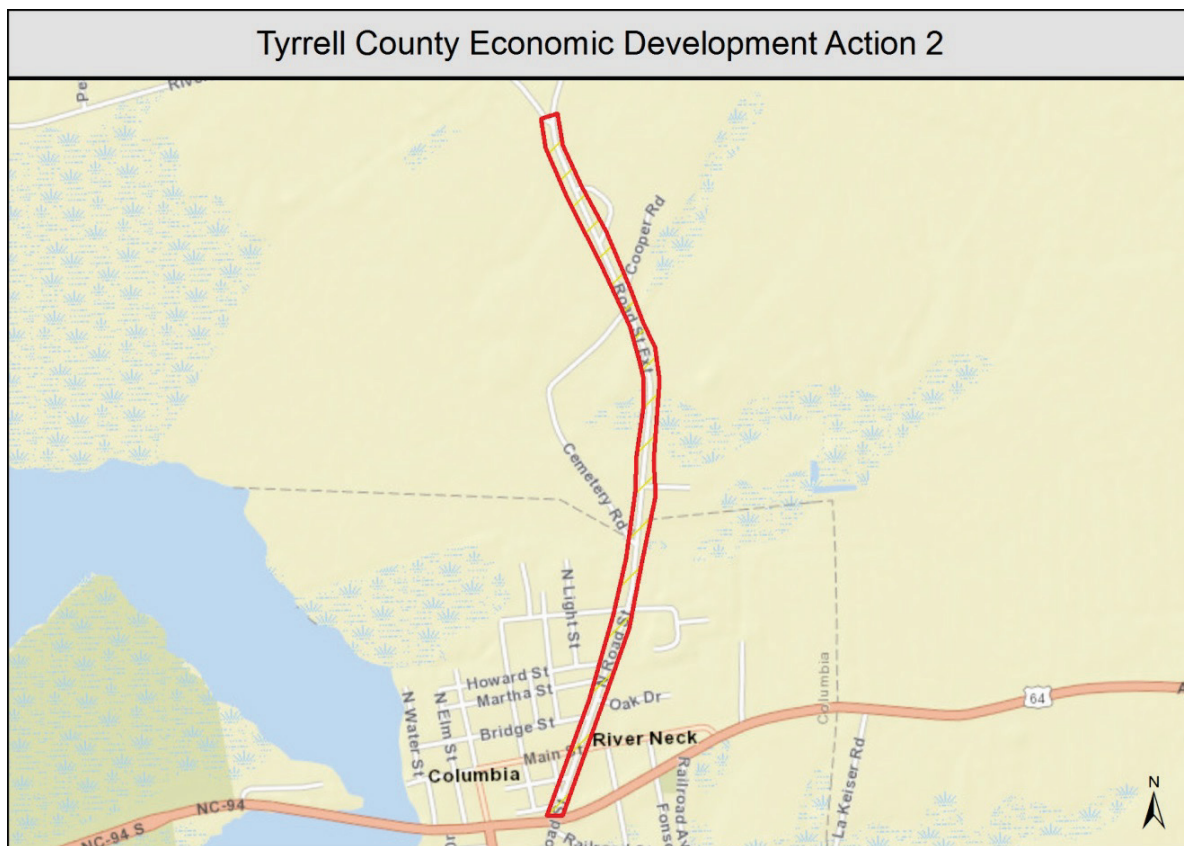
### High Priority Economic Development Strategies

Pillar	Action Name	Priority	Overall Ranking
Economic Development	Tyrrell Economic Development Action 2: Rebuild Section of Route 1208 / Road Street in the Town of Columbia	High	5

**Table 5. Tyrrell High Priority Economic Development Summary**

This project represents the economic development strategy that Tyrrell County indicated is the highest priority to address. Additional detail on the project can be found below:

- Rebuild Section of Route 1208/Road Street in the Town of Columbia:** This road was covered with three feet of water during Hurricane Matthew and was closed for 17 days. This made it difficult or impossible for people to reach their jobs at the Tyrrell County Work Farm, as well as for emergency managers to reach homes in the area.



**Figure 17. Economic Development Action 2: Rebuild Section of Route 1208 / Road Street in the Town of Columbia**

## Economic Development Action 2 - Rebuild Section of Route 1208/Road Street in the Town of Columbia

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 5

**Project Timeframe:** 1 to 2 years

**Location:** Route 1208 / Road Street in the Town of Columbia

**Project Summary:** Rebuild sections of Road Street, which leads to Route 1209, which is main route to the Tyrrell County Work Farm. Elevate roadbed and enlarge culverts to prevent flooding so that people can get to work at Tyrrell County Work Farm and so that emergency managers can reach homes in the area.

Question	Response	Disposition	
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	This section of roadway was under 3 feet of water and closed for 17 days following Hurricane Matthew. With the road closed people cannot access their jobs at the Tyrrell County Work Farm and emergency managers cannot provide service to people whose homes are in the vicinity of the intersection	N/A	
Consistent with existing plans (describe points of intersection/departure)	Yes - Hazard Mitigation Plan (2016) indicated the need to improve stormwater management	Agree	
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree	N/A
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree	N/A
Explain any benefits or impacts to the economy of the county from this project.	The project will allow people who live in the Town of Columbia to access their jobs at the Tyrrell County Work Farm which was built at this location by the State as an economic development project.	Agree	N/A
For how long will this solution be effective?	Between 31 and 50 years	Agree	N/A
How effective is the risk reduction?	100-200 year event	Agree	N/A
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree	N/A
Is coordination with other communities/counties needed to complete this project?	No	Agree	N/A
Is this project consistent with Federal Laws	Yes	Agree	N/A
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree	N/A
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Unknown	N/A	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 identified	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?	High	Agree	
What is the technical feasibility of this project?	Higher than 75%	Agree	
Who will administer this project?	County	Agree	

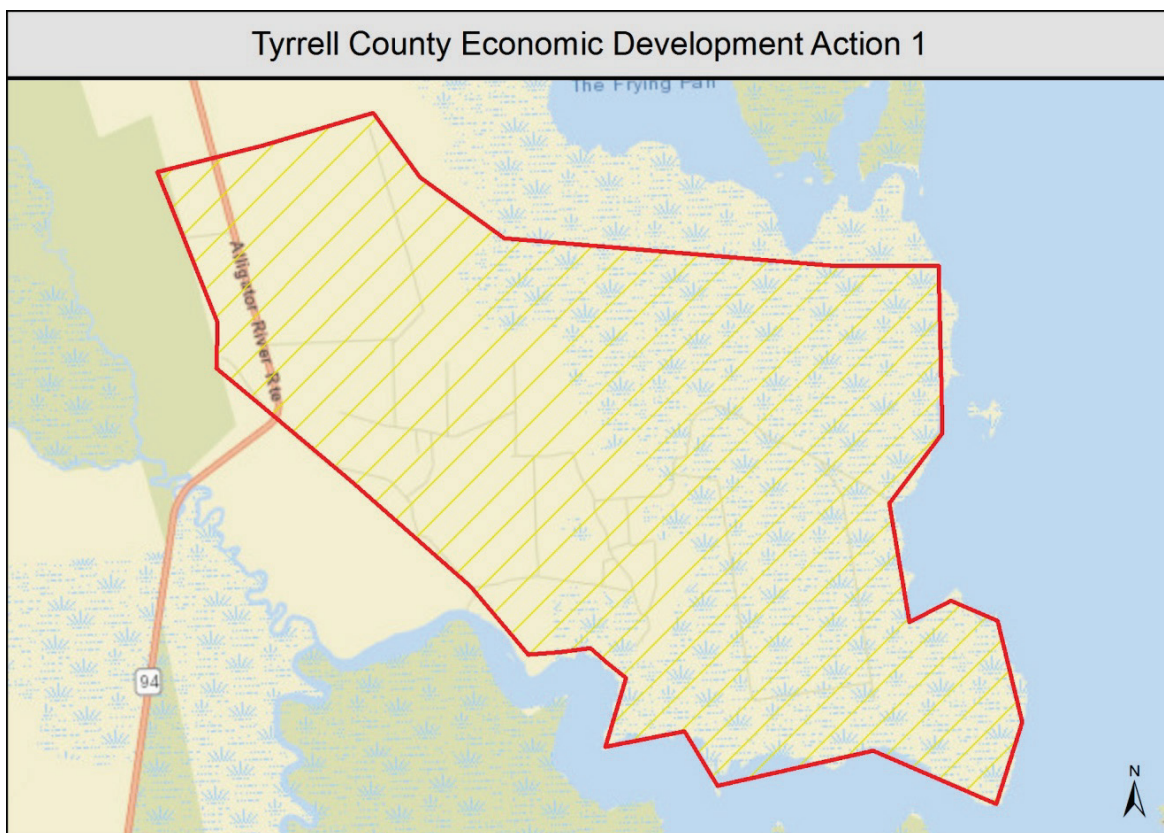
## Medium Priority Economic Development Strategies

Pillar	Action Name	Priority	Overall Ranking
Economic Development	Tyrrell Economic Development Action 1: Strengthen Existing Dike and Upgrade Water Pumps in Gum Neck Area	Medium	12

**Table 6. Tyrrell Medium Priority Economic Development Summary**

This project represents the economic development strategy that Tyrrell County indicated is of a medium priority to address. Additional detail on the projects can be found below:

- Strengthen Existing Dike and Upgrade Water Pumps in Gum Neck Area:** The existing dike is known to be weak in one area and this must be strengthened or reinforced. The project will protect 100 homes from future flooding and protect 15,000 acres of productive crop land from siltation due to flooding from the Alligator River. The project will protect about 50 agricultural and related jobs in the County.



**Figure 18. Economic Development Action 1: Strengthen Existing Dike and Upgrade Water Pumps in Gum Neck Area**

## Economic Development Action 1 - Strengthen Existing Dike and Upgrade Water Pumps in Gum Neck Area

**County:** Tyrrell

**Priority Grouping:** Medium Priority

**Priority Ranking:** 12

**Project Timeframe:** 1 to 3 years

**Location:** Gum Neck area

**Project Summary:** Strengthen dike that protects housing and agriculture in Gum Neck area. Reduce risk of breaching by reinforcing support structures. Install newer water pumps to eliminate ponding within the dike (current pumps are over 60 years old and capacity is insufficient for current levels of flooding including flooding experienced during Hurricane Matthew)

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	The area flooded during Hurricane Matthew; flood levels experienced in Hurricane Matthew were unprecedented showing that current configuration of the dike and current capacity of pumps are insufficient for future storms	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes - the Hazard Mitigation Plan (2016) indicated the need for improved stormwater management	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 will protect 15000 acres of valuable crop land from ruin and will prevent crop loss; as a result the project will protect over 50 agricultural and related jobs in the County	Agree
For how long will this solution be effective?	Between 31 and 50 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?	Unknown	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?	Less siltation of crop land	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?	High	Agree
What is the technical feasibility of this project?	Between 51 and 75%	Agree
Who will administer this project?	County	Agree

## Infrastructure Strategies

### High Priority Infrastructure Strategies

Pillar	Action Name	Priority	Overall Ranking
Infrastructure	Tyrrell Infrastructure Action 7: Relocate County Services	High	1
Infrastructure	Tyrrell Infrastructure Action 8: Elevate Utilities in Courthouse	High	6
Infrastructure	Tyrrell Infrastructure Action 3: Retrofit Stormwater Drainage System – Grendle Canal	High	7
Infrastructure	Tyrrell Infrastructure Action 2: Retrofit Stormwater Drainage System – Alligator Canal	High	8
Infrastructure	Tyrrell Infrastructure Action 5: Retrofit Stormwater Drainage System – South Fork Creek Canal	High	9
Infrastructure	Tyrrell Infrastructure Action 4: Retrofit Stormwater Drainage System – Rider Creek Canal	High	10

**Table 7. Tyrrell High Priority Infrastructure Summary**

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

- **Relocate County Services:** Tyrrell County Social Services, Utilities, Agricultural Extension, and Senior Center were damaged by flooding during Hurricane Matthew. County Social Services continues to operate from a temporary location in a County-owned facility to the east of the Town of Columbia. The project will build a new, elevated structure with a back-up generator on U.S. Route 64 on County-owned property where all agencies can be relocated.

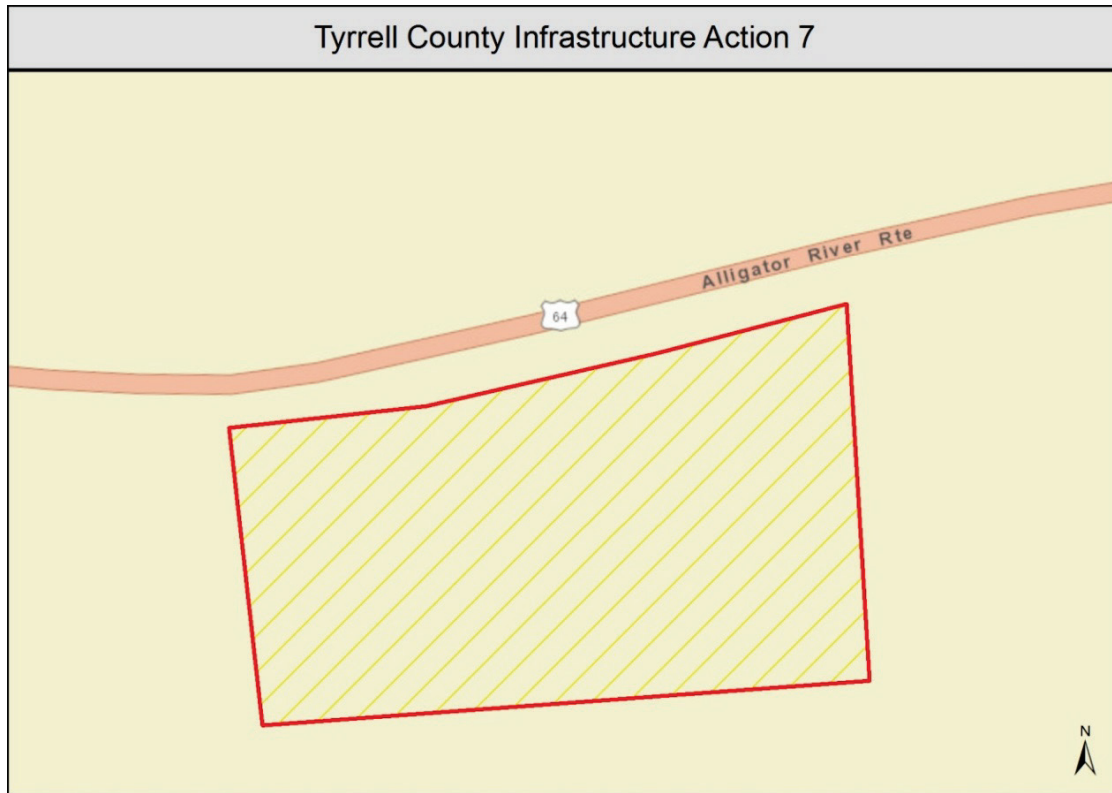


Figure 19. Infrastructure Action 7: Relocate County Services



## Infrastructure Action 7 - Relocate County Services

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 1

**Project Timeframe:** 1 to 3 years

**Location:** US Route 64 just east of the Town of Columbia

**Project Summary:** Build elevated structure with back-up generator on County-owned land along US Route 64 to the east of Columbia. This is a location that is not flood-prone. Relocate County Social Services, Utilities, Agricultural Extension, and Senior Center from their seriously flooded and damaged location to this new location

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	The County Social Services function has not been able to return to previous site on Main Street. County Utilities Agricultural Extension and Senior Center were not able to use their previous locations for several weeks following Hurricane Matthew flooding.	N/A
Consistent with existing plans (describe points of intersection/departure)	Unknown	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.	Project will reduce potential for staff at these county services to be out of work due to flooding	Agree
For how long will this solution be effective?	Between 31 and 50 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)?	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?	Unknown	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 identified; there is already a small County building on the site	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?	High	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree



- **Elevate Utilities in Courthouse:** The Tyrrell County Courthouse at 403 Main Street, Columbia, has a generator with capacity to meet the needs of the Courthouse. This project will elevate utility systems and will install transfer switches needed to use the generator power.

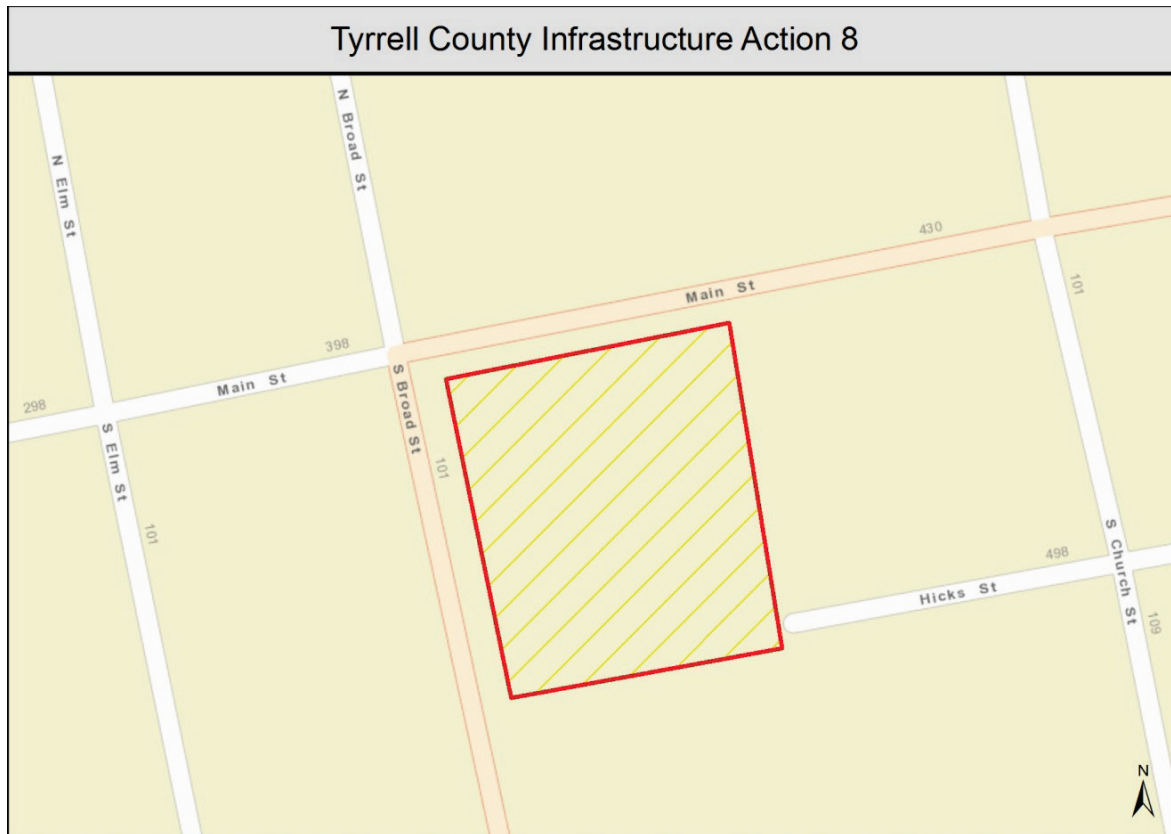


Figure 20. Infrastructure Action 8: Elevate Utilities in Courthouse

## Infrastructure Action 8 - Elevate Utilities in County Courthouse

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 6

**Project Timeframe:** 1 year

**Location:** Tyrrell County Courthouse, 403 Main Street, Columbia, NC

**Project Summary:** Elevate utilities and switch that connects utility systems to Courthouse generator

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Courthouse already has a generator that will be able to meet power demand during periods of power outage. But the generator could not be used during/after Hurricane Matthew because switches needed to transfer power supply to the generator were not installed.	N/A
Consistent with existing plans (describe points of intersection/departure)	Unknown	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?		Agree
Explain any benefits or impacts to the economy of the county from this project.	County employees who work at the Courthouse will be able to work from the Courthouse even during periods of power outages	Agree
For how long will this solution be effective?	Between 31 and 50 years	Agree
How effective is the risk reduction?	Unknown	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?	Unknown	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 identified	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?	High	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

- **Retrofit Stormwater Drainage System – Grendle Canal:** Dredge the canal, which surrounds the Town of Columbia, and install or enlarge culverts to better convey stormwater to the Scuppernong River. The project will protect housing, businesses, and government facilities in the Town of Columbia.

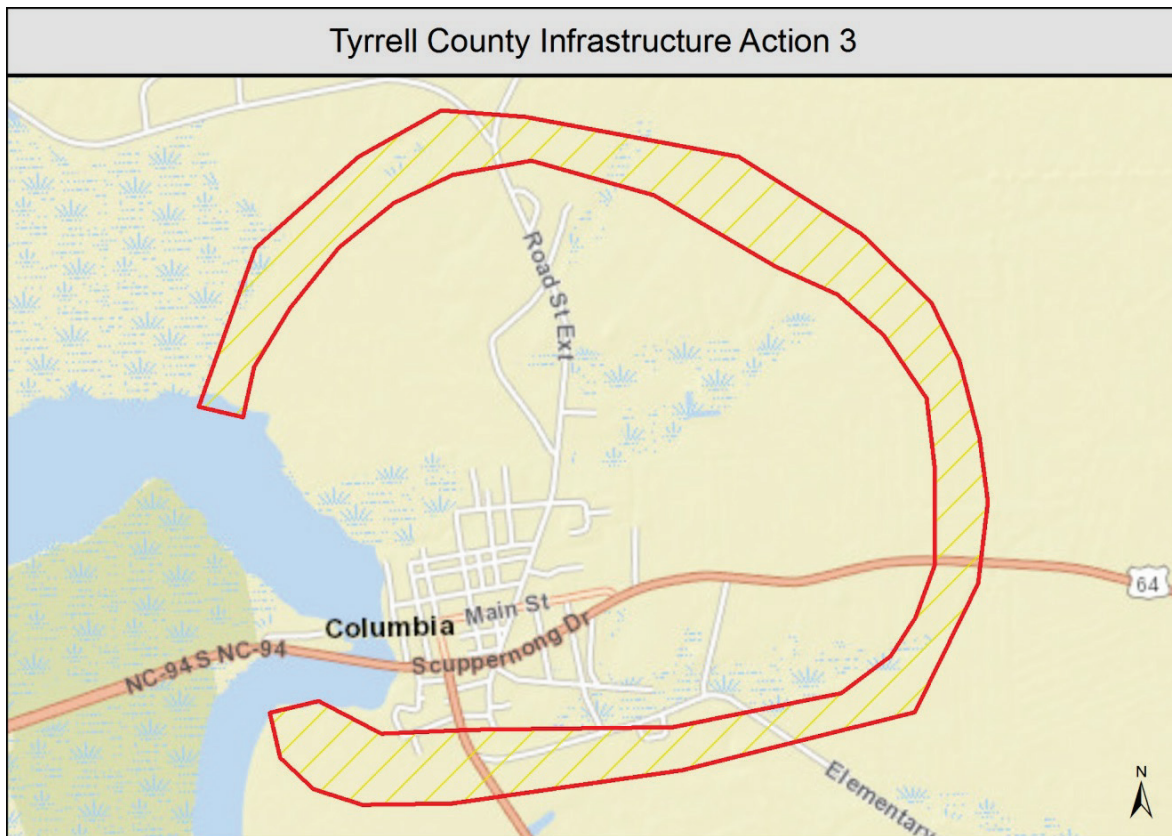


Figure 21. Infrastructure Action 3: Retrofit Stormwater Drainage System – Grendle Canal

## Infrastructure Action 3 - Retrofit Stormwater Drainage System - Grendle Canal

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 7

**Project Timeframe:** 1 to 3 years

**Location:** Grendle Canal, which form a U around the north, east, and south sides of the Town of Columbia

**Project Summary:** Retrofit stormwater drainage system for Grendle Canal; dredge canal and enlarge culverts.

Question	Response	Disposition	
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	A large amount of additional silt / fill was added to the canal as a result of Hurricane Matthew	N/A	
Consistent with existing plans (describe points of intersection/departure)	Yes - Hazard Mitigation Plan (2016) indicated the need to improve stormwater management	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.	Project will protect housing as well as businesses and government facilities in the Town of Columbia	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?	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?	Unknown	N/A	
What impact will this action have on the local economy/tax base?	Less than 25%	Agree	N/A
What impacts to the environment of the county will result from this project?	None identified	N/A	
What is the capability of the local government to administer this project?	High	Agree	N/A
What is the financial range of this project?	\$501K - \$1M	Agree	N/A
What is the level of public support for this project?	Medium	Agree	N/A
What is the technical feasibility of this project?	Higher than 75%	Agree	N/A
Who will administer this project?	County	Agree	

- **Retrofit Stormwater Drainage System – Alligator Canal:** Dredge the canal and install or enlarge culverts to better convey stormwater to Albemarle Sound. The project will protect housing as well as agricultural land and roads.

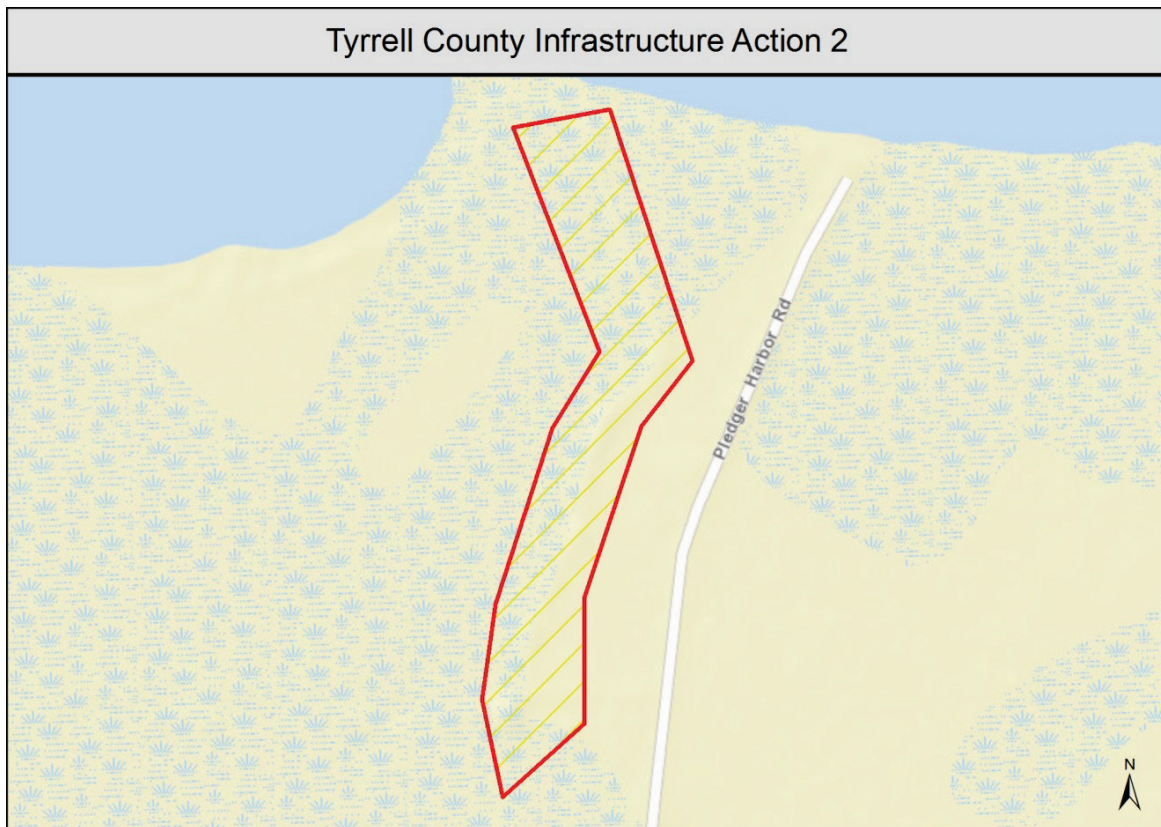


Figure 22. Infrastructure Action 2: Retrofit Stormwater Drainage System – Alligator Canal

## Infrastructure Action 2 - Retrofit Stormwater Drainage System - Alligator Canal

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 8

**Project Timeframe:** 1 to 3 years

**Location:** Alligator Canal: Cove Road to Albemarle Sound along Pledger Harbor Road

**Project Summary:** Reetrofit stormwater drainage system along Alligator Canal; dredge canal and install or enlarge culverts.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Canal experienced substantial siltation / filling due to Hurricane Matthew flooding	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes - Hazard Mitigation Plan (2016) specified the need to improve stormwater management in and around the Alligator Community	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.	Project will protect crop land from siltation and from having standing water kill plants.	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?	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?	Unknown	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 identified	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?	Medium	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree



- **Retrofit Stormwater Drainage System – South Fork Creek Canal:** Dredge the canal and install or enlarge culverts to better convey stormwater into Phelps Lake near the western edge of the County. The project will reduce the potential for flooding along local roads and productive farmland.

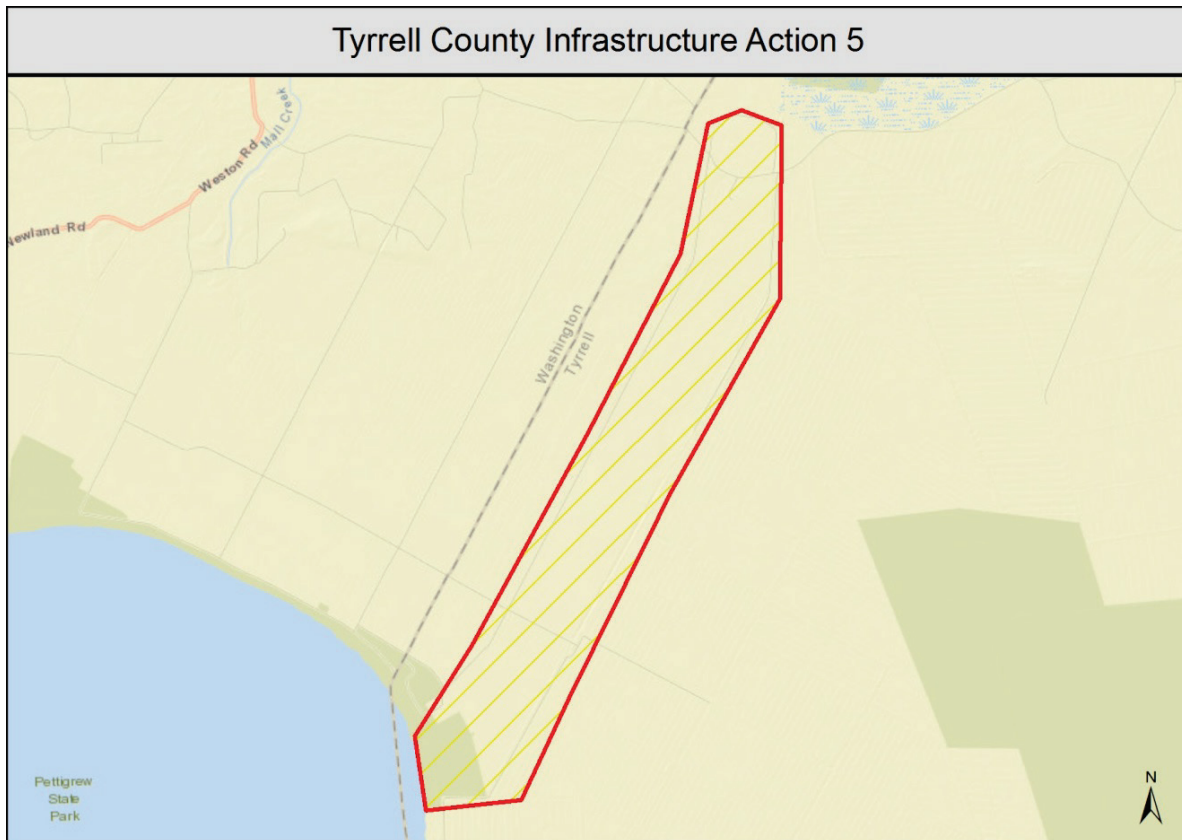


Figure 23. Infrastructure Action 5: Retrofit Stormwater Drainage System – South Fork Creek Canal



## Infrastructure Action 5 - Retrofit Stormwater Drainage System - South Fork Creek Canal

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 9

**Project Timeframe:** 1 to 4 years

**Location:** South Fork Creek Canal from S. Fork Creek Road to Phelps Lake, near western edge of Tyrrell County

**Project Summary:** Retrofit stormwater drainage system along South Fork Creek Canal; dredge canal and enlarge culverts.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Silt and fill in the canal increased due to Hurricane Matthew flooding which has reduced the ability of the canal to convey stormwater away from the area	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes - Hazard Mitigation Plan (2016) indicated the need to improve stormwater management	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.	Project will protect productive agricultural land from siltation; project will reduce potential for standing water to kill crops	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?	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?	Unknown	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 identified	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?	Low	Agree
What is the technical feasibility of this project?	Higher than 75%	Agree
Who will administer this project?	County	Agree

- **Retrofit Stormwater Drainage System – Rider Creek Canal:** Dredge the canal and install or enlarge culverts to better convey stormwater to a tributary of the Scuppernong River south of the Town of Columbia. The project will reduce the potential for flooding along Route 94.

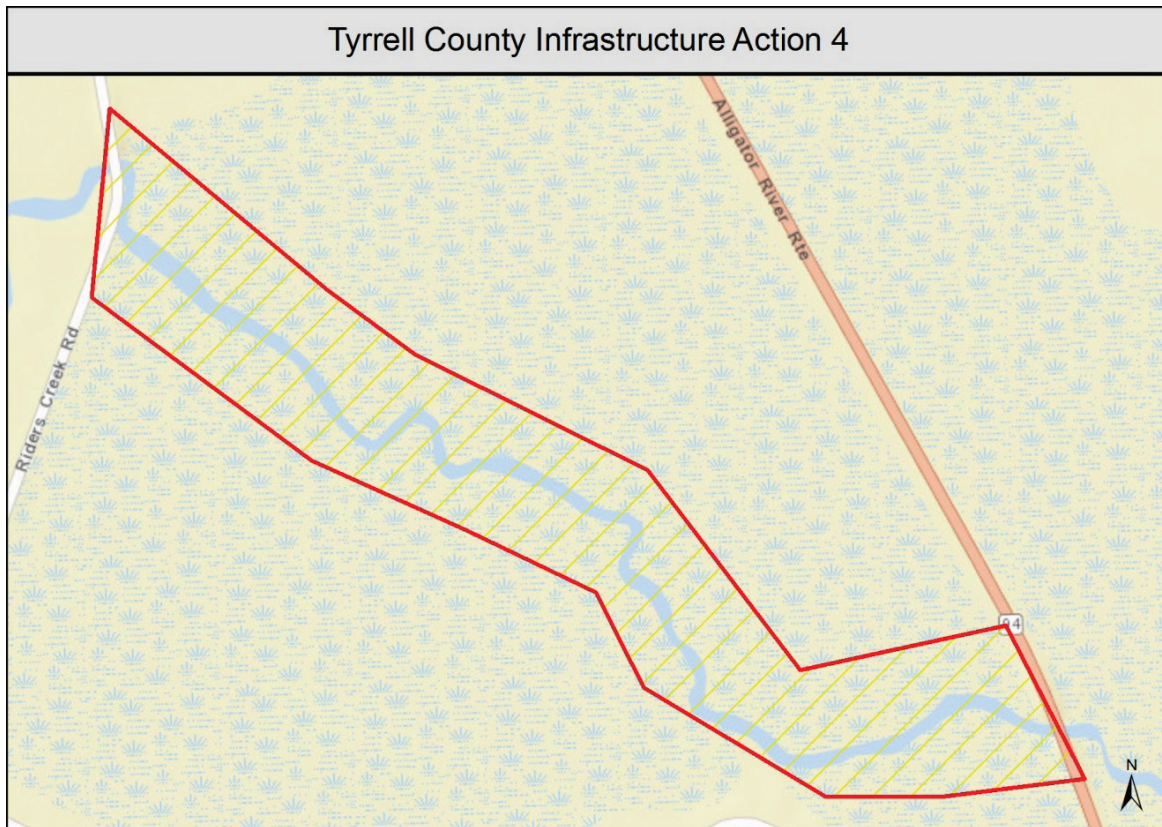


Figure 24. Infrastructure Action 4: Retrofit Stormwater Drainage System – Rider Creek Canal

## Infrastructure Action 4 - Retrofit Stormwater Drainage System - Rider Creek Canal

**County:** Tyrrell

**Priority Grouping:** High Priority

**Priority Ranking:** 10

**Project Timeframe:** 1 to 4 years

**Location:** Riders Creek Canal from Newlands Road to Route 94

**Project Summary:** Retrofit stormwater drainage system along Riders Creek Canal; dredge canal and enlarge culverts.

Question	Response	Disposition
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Silt / fill accumulated in the canal due to Hurricane Matthew flooding which has reduced its ability to drain water from the area	N/A
Consistent with existing plans (describe points of intersection/departure)	Yes - Hazard Mitigation Plan (2016) indicated the need to improve stormwater management	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.	Project will protect productive agricultural land	Agree
For how long will this solution be effective?	Between 11 and 30 years	Agree
How effective is the risk reduction?	<50 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?	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?	Unknown	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 identified	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?	Low	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	Tyrrell Infrastructure Action 1: Provide 911 System Back-up and Reverse 911 System	Medium	13
Infrastructure	Tyrrell Infrastructure Action 6: Retrofit Stormwater Drainage System – U.S. 64 to West of Columbia	Medium	15

**Table 8. Tyrrell Medium Priority Infrastructure Summary**

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

- **Provide 911 System Back-up and Reverse 911 System:** This project will be based in the new Tri-County Emergency Operations Center located in Dare County and will provide satellite-based 911 capabilities.
- **This is a county-wide project, so no project area map has been included.**

## Infrastructure Action 1 - 911 System Back-up and Reverse 911 System

**County:** Tyrrell

**Priority Grouping:** Medium Priority

**Priority Ranking:** 13

**Project Timeframe:** 1 to 3 years

**Location:** Housed in Dare County at the new Tri-County EOC

**Project Summary:** Use satellite technology to eliminate potential for 911 system failure due to power outage; add reverse 911 capability to the system

Question	Response	Disposition	
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Hurricane Matthew and resulting power outage underscored the importance of having a satellite back-up system for 911 calling	N/A	
Consistent with existing plans (describe points of intersection/departure)	Unknown	Agree	
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree	N/A
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree	N/A
Explain any benefits or impacts to the economy of the county from this project.	Emergency managers in 3 counties (Tyrrell Hyde and Dare) will have improved 911 system and be better able to respond to needs of communities	Agree	N/A
For how long will this solution be effective?	Between 11 and 30 years	Agree	N/A
How effective is the risk reduction?	Unknown	Agree	N/A
How many public facilities are involved in this project (buildings and infrastructure)?	1-3	Agree	N/A
Is coordination with other communities/counties needed to complete this project?	Yes	Agree	N/A
Is this project consistent with Federal Laws	Yes	Agree	N/A
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree	Agree
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Unknown	N/A	
What impact will this action have on the local economy/tax base?	No Impact	Agree	N/A
What impacts to the environment of the county will result from this project?	None identified	N/A	
What is the capability of the local government to administer this project?	High	Agree	N/A
What is the financial range of this project?	\$101K - \$250K	Agree	N/A
What is the level of public support for this project?	Low	Agree	N/A
What is the technical feasibility of this project?	Higher than 75%	Agree	N/A
Who will administer this project?	County	Agree	N/A



- **Retrofit Stormwater Drainage System - U.S. 64 to the West of Columbia:** Install or enlarge culverts along U.S. Route 64 from the Town of Columbia west to the County line. The highway was built with consideration for safe movement of wild animals from one side of the road to the other, but not with adequately sized underpasses or culverts to allow water to move efficiently from higher ground near Albemarle Sound to lower ground near the Pocosin Lakes National Wildlife Refuge.

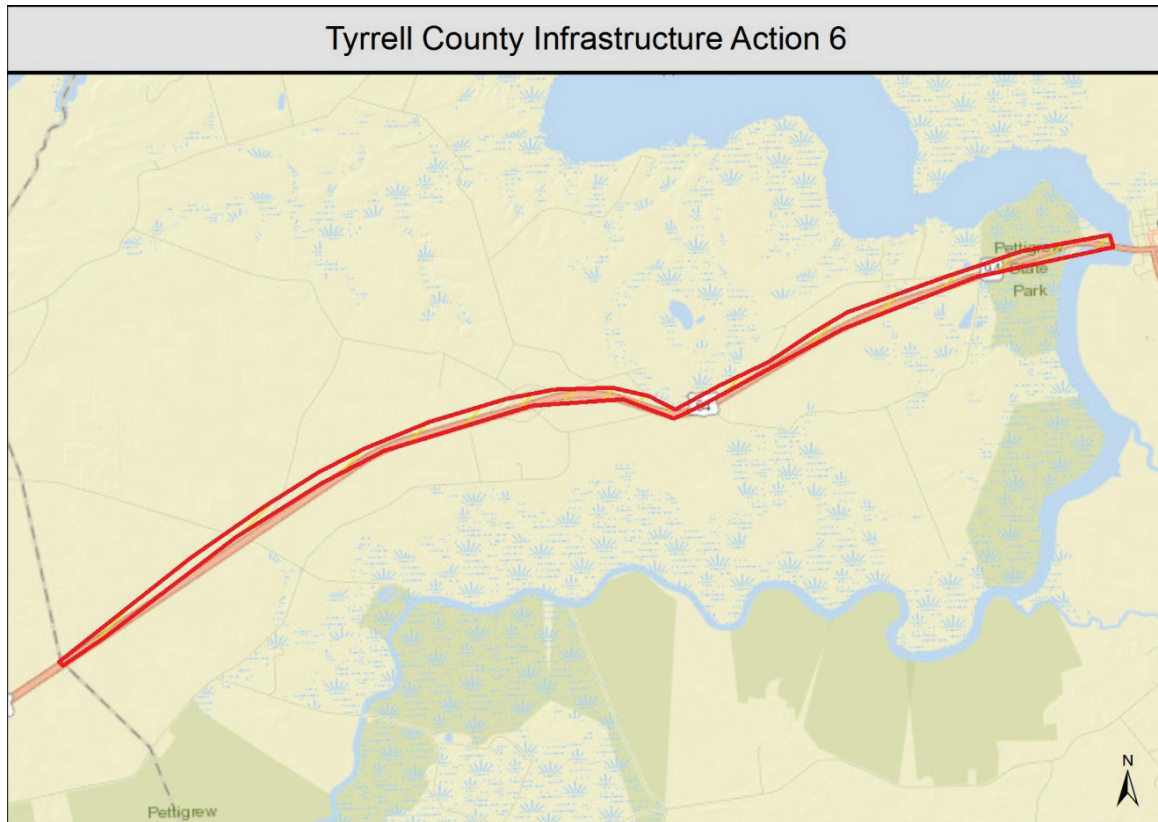


Figure 25. Infrastructure Action 6: Retrofit Stormwater Drainage System - U.S. 64 to the West of Columbia

## Infrastructure Action 6 - Retrofit Stormwater Drainage System - U.S. 64 to the West of Columbia

**County:** Tyrrell

**Priority Grouping:** Medium Priority

**Priority Ranking:** 15

**Project Timeframe:** 1 to 4 years

**Location:** Along US Route 64 from Town of Columbia west to the county line

**Project Summary:** Install or enlarge culverts

Question	Response	Disposition	
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	The road flooded during Hurricane Matthew and acted as a barrier or levee exacerbating flooding between the road and Albemarle Sound	N/A	
Consistent with existing plans (describe points of intersection/departure)	Yes - Hazard Mitigation Plan (2016) indicated the need to improve stormwater drainage	Agree	N/A
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree	N/A
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree	N/A
Explain any benefits or impacts to the economy of the county from this project.	Project will reduce flooding along US Route 64 the major road leading into the County which will benefit businesses in the County	Agree	N/A
For how long will this solution be effective?	Between 11 and 30 years	Agree	N/A
How effective is the risk reduction?	50-100 year event	Agree	N/A
How many public facilities are involved in this project (buildings and infrastructure)?	0	Agree	N/A
Is coordination with other communities/counties needed to complete this project?	No	Agree	N/A
Is this project consistent with Federal Laws	Yes	Agree	N/A
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree	N/A
To what degree will it be possible to positively quantify the environmental benefits and ROI of this project?	Unknown	N/A	
What impact will this action have on the local economy/tax base?	Less than 25%	Agree	N/A
What impacts to the environment of the county will result from this project?	Culverts under the highway will make it easier for wildlife to move from one side to the other	N/A	
What is the capability of the local government to administer this project?	High	Agree	N/A
What is the financial range of this project?	\$501K - \$1M	Agree	N/A
What is the level of public support for this project?	Medium	Agree	N/A
What is the technical feasibility of this project?	Higher than 75%	Agree	N/A
Who will administer this project?	State	Agree	N/A

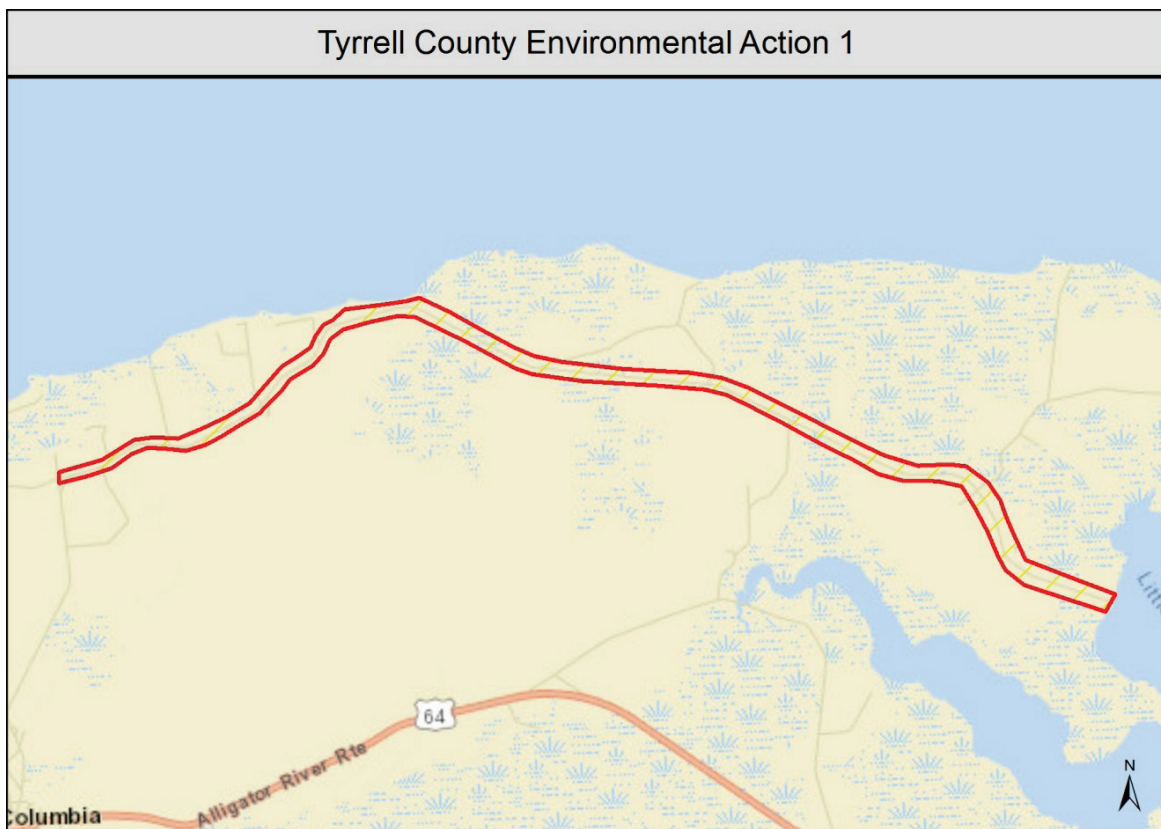
## Medium Priority Environmental Strategies

Pillar	Action Name	Priority	Overall Ranking
Environment	Tyrrell Environment Action 1: Extend Sanitary Service District	Medium	11
Environment	Tyrrell Environment Action 2: Living Shoreline	Medium	14

**Table 9. Tyrrell Medium Priority Environmental Summary**

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

- Extend Sanitary Service District:** Scattered houses use septic tanks; the tanks are often more than 30 years old and they malfunction during periods of flooding. The sanitary service district has the capacity to meet the demand that would be generated by scattered houses located along an 11 mile section of Route 1209 from the Alligator Community and Goat Neck Road toward Albemarle Sound. This project will reduce the potential for surface water pollution as well as pollution of potable water wells.



**Figure 26. Tyrrell Environment Action 1: Extend Sanitary Service District**

## Environment Action 1 - Extend Sanitary Service District

**County:** Tyrrell

**Priority Grouping:** Medium Priority

**Priority Ranking:** 11

**Project Timeframe:** 1 to 3 years

**Location:** From Alligator Community and Goat Neck Road toward Albemarle Sound along Route 1209 for a distance of about 11 miles

**Project Summary:** Extend sanitary sewer lined to serve dispersed houses along Route 1209 from Alligator Community towards Albemarle Sound.

Question	Response	Disposition	
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Septic tanks in this area are generally old (>30 years) and they malfunctioned during Hurricane Matthew causing pollution of surface water and (drinking) well water	N/A	
Consistent with existing plans (describe points of intersection/departure)	Unknown	Agree	N/A
Does this project comply with existing Local and State authority (codes, plan and ordinance)?	Yes	Agree	N/A
Does this project meet the intents and goals for the Hurricane Matthew Recovery Act?	Yes	Agree	N/A
Explain any benefits or impacts to the economy of the county from this project.	No direct impacts identified	Agree	N/A
For how long will this solution be effective?	Between 11 and 30 years	Agree	N/A
How effective is the risk reduction?	Unknown	Agree	N/A
How many public facilities are involved in this project (buildings and infrastructure)?	0	Agree	N/A
Is coordination with other communities/counties needed to complete this project?	No	Agree	N/A
Is this project consistent with Federal Laws	Yes	Agree	N/A
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree	N/A
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?	Less than 25%	Agree	N/A
What impacts to the environment of the county will result from this project?	The project will eliminate surface water pollution due to septic tank malfunctions during periods of flooding.	Agree	
What is the capability of the local government to administer this project?	High	Agree	N/A
What is the financial range of this project?	\$1M+	Agree	
What is the level of public support for this project?	Medium	Agree	
What is the technical feasibility of this project?	Higher than 75%	Agree	
Who will administer this project?	County	Agree	



- **Living Shoreline:** Erosion threatens structures, including the North Carolina State University 4-H Building near the Town of Columbia. This project will re-establish natural protection to the shoreline from Legion Beach to past Taylor Beach Road along Shoreline Road and from Folly Landing to Bulls Bay Road parallel to the Scuppernong River.

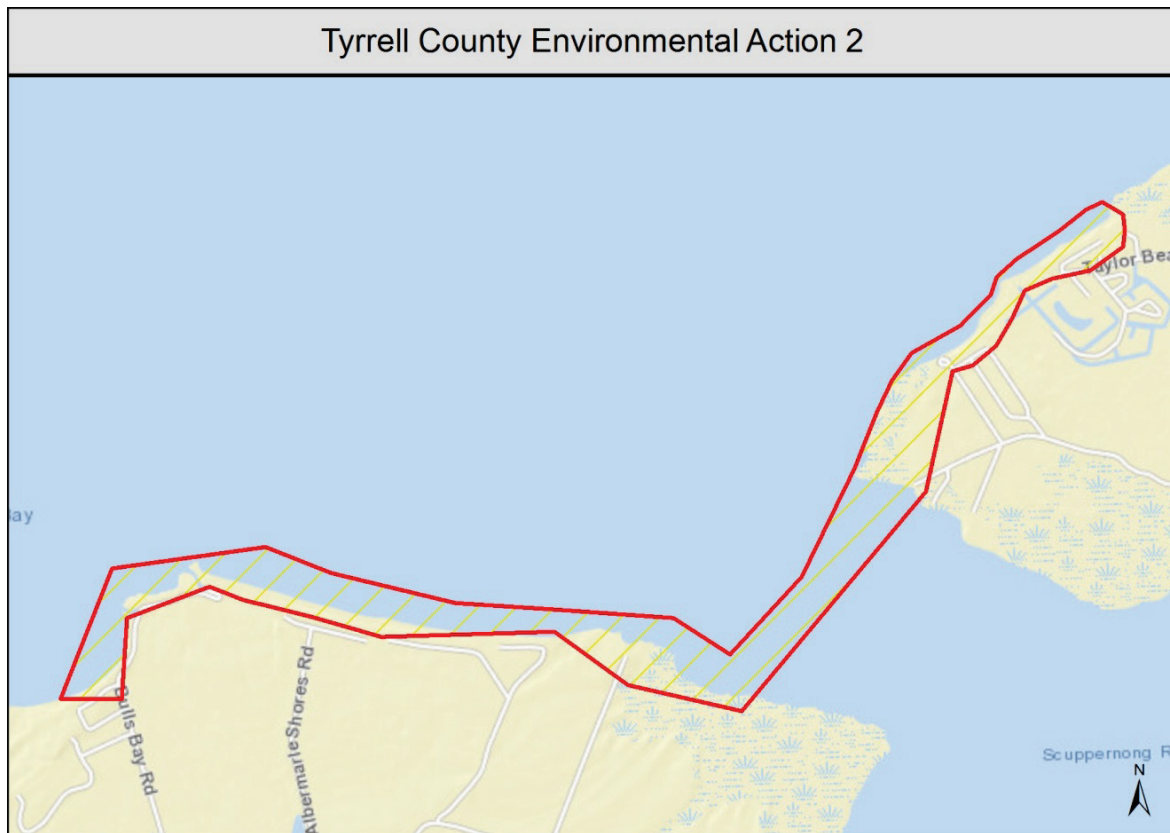


Figure 27. Tyrrell Environment Action 2: Living Shoreline

## Environment Action 2 - Living Shoreline

**County:** Tyrrell

**Priority Grouping:** Medium Priority

**Priority Ranking:** 14

**Project Timeframe:** 1 to 10 years

**Location:** From Legion Beach Road to past Taylor Beach Road along Shoreline Road in Columbia; and from Folly Landing to Bulls Bay Road, parallel to Scuppernong River

**Project Summary:** Develop or enhance living shoreline along Scuppernong River

Question	Response	Disposition	
Articulate how this project addresses an unmet need that has been created by damage from Hurricane Matthew.	Hurricane Matthew contributed to erosion along this section of shoreline	N/A	
Consistent with existing plans (describe points of intersection/departure)	Unknown	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.	If successful project will provide protection to businesses and government facilities in the Town of Columbia	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)?	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	N/A
To what degree does this project adversely impact local floodplain/coastal zone management?	No Impact	Agree	N/A
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?	Less than 25%	Agree	N/A
What impacts to the environment of the county will result from this project?	If successful project will reduce the rate of erosion currently observed along the shoreline	N/A	
What is the capability of the local government to administer this project?	Medium	Agree	N/A
What is the financial range of this project?	\$51K - \$100K	Agree	N/A
What is the level of public support for this project?	Low	Agree	N/A
What is the technical feasibility of this project?	Between 51 and 75%	Agree	N/A
Who will administer this project?	Unknown	Agree	N/A

## 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.