

CHAPTER 4: ANALYSIS OF COMMUNITY FACILITIES

The CAMA planning guidelines encourage coastal communities to evaluate the location and adequacy of community facilities that protect important environmental factors and that attract land development in the coastal area. The facilities typically found in coastal communities include:

- water supply systems;
- wastewater systems;
- stormwater systems;
- transportation systems;
- public access & parking facilities; and
- solid waste disposal & recycling.

This chapter provides analysis and information pertaining to each item listed above.

WATER SUPPLY SYSTEM STATUS AND TRENDS

WATER SUPPLY SYSTEM

In Ocean Isle Beach, currently, the water supply system has 2,682 residential connections, 89 non-residential connections, and 534 irrigation connections. This is an 11% increase in residential connections and a 49% increase in non-residential connections since 2009. The finished storage capacity of the Town's water system is 500,000 gallons, which is a 10% increase since 2009. The Town connected an additional 2 miles of water lines to the distribution system since 2009. In total, there are approximately 32 miles of water lines serving the Town, ranging in diameter from four to twelve inches (See Map 4.1).

The Town purchases water from the Brunswick County Utility Department, where the primary water source is the Cape Fear River (Lower Cape Fear Water and Sewer Authority). The Town's water is treated at the Northwest Water Treatment Plant (Northwest WTP). Water supplied to the Northwest WTP is purchased from the Lower Cape Fear Water and Sewer Authority, which pumps surface water from the King's Bluff Reservoir, located up river from Lock and Dam No. 1 on the Cape Fear River.

In October of 2016, a break in the raw water main from the Cape Fear River (Kings Bluff Raw Water Pump Station) that serves the Brunswick County Utility Department – and subsequently the Town – resulted in mandatory water restrictions and a declared State of Emergency across the county. However, once the water main was repaired, the water restriction was lifted. The incident has led to inquiry about establishing backup systems

and an additional raw water main running parallel to the existing main to ensure a similar occurrence does not happen in the future. Within the corporate limits, there are no private water systems. The Town has had no water quality issues that were a threat to public health nor were there any violations reported in 2015 at the Northwest WTP.

WATER DEMAND

Table 4.1 displays water consumption figures for 2015. According to data obtained from the Ocean Isle Public Utilities Department, March accounted for the lowest max water demand at 0.37 MGD and July, the greatest, at 1.42 MGD. Potable water demand is the highest in July and the lowest in February. For planning purposes, the Ocean Isle Beach Public Utilities Department must account for peak day usage. In 2015, the peak day usage occurred in July 2015, with a total flow of 1.42 MGD – approximately 79% of total capacity.

Demand for irrigation peaks in July at nearly seven million gallons or 20% of total water consumption for the month. Over the course of 2015, irrigation demand accounted for 18% of the Town’s total water consumption. It should be noted that water utilized for irrigation purposes is also considered potable water, but is measured by a separate meter.

Table 4.1: Water Consumption (2015)

Source: NC Division of Water Resources, Town of Ocean Isle Beach, Cape Fear Council of Governments

Month-Year	Potable Water Usage (gallons)	Irrigation Usage (gallons)	Total Water Consumption (gallons)	Avg. Daily Million Gallons per Day (MGD)	Max Daily Million Gallons per Day (MGD)
Jan-15	6,188,370	637,630	6,826,000	0.219	0.370
Feb-15	5,448,480	639,520	6,088,000	0.218	0.397
Mar-15	6,623,870	1,000,130	7,624,000	0.246	0.367
Apr-15	10,832,879	1,121,121	11,954,000	0.398	0.664
May-15	13,557,385	5,157,615	18,715,000	0.606	1.354
Jun-15	26,407,321	5,268,679	31,676,000	1.056	1.274
Jul-15	32,399,695	6,777,305	39,177,000	1.264	1.422
Aug-15	27,258,598	6,127,402	33,386,000	0.956	1.314
Sep-15	15,057,900	3,883,100	18,941,000	0.675	1.110
Oct-15	10,223,988	3,815,012	14,039,000	0.453	0.810
Nov-15	8,755,180	1,575,820	10,331,000	0.352	0.651
Dec-15	5,366,760	1,498,240	6,865,000	0.268	0.361
Average Usage Statistics	14,010,036	3,125,131	17,135,167	0.583	0.841
Total Usage Statistics	168,120,426	37,501,574	205,622,000	N/A	N/A

The Town is also responsible for producing a Local Water Supply Plan. The Water Supply Plan is reviewed by the North Carolina Division of Water Resources to ensure adequate supplies are provided to avoid shortages and to be available during emergencies (i.e. fires).

According to the 2015 Local Water Supply Plan, Ocean Isle Beach has the capacity to meet the anticipated demand through the year 2060 for all its existing and future customers – including residents. This calculation includes estimated population projections for seasonal and permanent residents, but is based only on the annual average daily usage (See Table 4.2). The Water Supply Plan anticipates that by the year 2060, future water demand will only account for 60% of the available 1.8 million gallons per day (MGD). However, it should be noted that this estimate is based upon the annual average daily demand (0.583 MGD), and does not account for the peak day usage. As such, it is possible that the Town will experience capacity issues in the event that the seasonal population projections come to fruition. In July 2015, the peak day demand equates to 71.1 gallons per capita per day (max daily usage / seasonal population = gallons per capita per day). Assuming that gallons per capita per day remains unchanged (71.1), a seasonal population of 35,000 will result in a peak day demand of 2.49 MGD, which will exceed the 1.8 MGD capacity. If 2.49 MGD of capacity are needed, it will be necessary for the Town to purchase additional water from the County to meet demand. According to County supply plans, there is sufficient capacity that may be purchased to meet growing demand.

Table 4.2: Projected Population and Water Demand

Source: NC Division of Water Resources – Local Water Supply Plan

	2015	2020	2030	2040	2050	2060
Year-Round Population*	550*	593	686	794	918	1,062
Seasonal Population	20,000	29,000	35,000	35,000	35,000	35,000
Total Available Supply (MGD)	1.8	1.8	1.8	1.8	1.8	1.8
Total Demand (MGD)	0.583	0.626	0.718	0.821	0.941	1.077
Demand as Percent of Supply**	32%	35%	40%	46%	52%	60%

* The year-round population figures are sourced from the 2015 Local Water Supply Plan and differ from those provided by CFCOG in Chapter 2.

**The percentage provided only accounts for annual average daily usage and does not account for peak demand.

Future capital improvement projects for the water system include placing the current mainland water connection main beneath the ICWW. The water main is currently located on the bridge.

WASTEWATER SYSTEM STATUS AND TRENDS

WASTEWATER SYSTEM

The Town began operating its wastewater treatment system in 1987 – one of the first of the Brunswick County beach communities to do so. Connection to the public sewer system is required for all residents and businesses within the Town. The sewer system has a total of 2,526 connections. Brunswick County and the Town of Ocean Isle Beach reached an agreement in 2012 whereby the Town conveyed the Ocean Isle Beach Wastewater Treatment Plant (WWTP) to the County (See Map 4.2). This facility is permitted to treat 1.33 MGD.

WASTEWATER DEMAND

In 2015, a diversion pump station and force main were constructed that allows up to 0.296 MGD to be transferred to the West Brunswick Reclamation Facility for treatment – effectively increasing the service area capacity.

Table 4.3: Wastewater Treatment Plant Serving Ocean Isle Beach

Source: NC Division of Water Resources, OIB Public Utility Department, Brunswick County Utility Department

Facility	Capacity	Annual Average Daily Discharge (2015)	Maximum Daily Discharge (2015)
Ocean Isle Beach WWTP	1.35 MGD*	0.33 MGD	1.69 MGD** (10/5/2015)

*An additional 0.296 MGD of capacity was added as a diversion pump station in 2015, which makes up the permitted capacity. The instantaneous design flow rate is 2.06 MGD.

**Due to inflow from a significant October rainfall event.

Table 4.4 shows the amount of wastewater discharged per month and on average per day for Ocean Isle Beach in 2015. In July, the average daily discharge (0.75 MGD) was 55% of total capacity, whereas the peak day seasonal discharge occurred on July 4th at 0.93 MGD or 69% of total capacity.

In 2015, Ocean Isle Beach had a higher total wastewater discharge in the month of October due to 22 inches of rainfall. According to the Town's Public Services Director, the monthly discharge for October (13.77 MGD) was nearly double the typical flow. The rainfall event also resulted in the maximum daily discharge for 2015 at 1.69 MGD. Further, as a result of Hurricane Matthew in October 2016, the system experienced a significant increase in wastewater flow. The total flow amount is not known, however, due to power outage at the meters during caused by the storm event. Significant rainfall events can increase wastewater flows due to rainwater infiltration of manholes, faulty connections, and broken or leaky pipes.

Table 4.4: Ocean Isle Beach Wastewater Discharge (2015)

Source: OIB Public Utility Department

Month	Discharge/Month (MGD)	Average Daily Discharge (MGD)	Percent of Total Capacity
January	4.62	0.154	11.32%
February	3.84	0.128	9.41%
March	4.62	0.154	11.32%
April	7.35	0.245	18.01%
May	10.8	0.360	26.47%
June	16.86	0.562	41.32%
July	23.13	0.746	54.85%
August	15.42	0.514	37.79%
September	9.87	0.329	24.19%
October	13.77	0.459	33.75%
November	5.16	0.172	12.65%
December	4.23	0.141	10.37%
Average Usage Statistics	9.97	0.33	24.29%

Currently there are no plans for expansion of the OIB WWTP as wastewater may be diverted from that plant to five other locations, which serves to increase the capacity of the system serving the Town. In the future, the Town would like to install generators at each of its pump stations.

TREATED WASTEWATER AS A RESOURCE

The Sea Trail WWTP, Ocean Isle WWTP, and the West Brunswick Regional WWTP are non-discharge plants. Historically, once treated wastewater leaves a wastewater treatment plant it is discharged into a stream or river. Brunswick County's older WWTPs do operate this way, but all newer WWTPs have been permitted as non-discharge facilities. Rather than discharging treated wastewater to a stream or river, a non-discharge WWTP uses the highly treated wastewater for large-scale irrigation. The highly treated wastewater is termed "Reuse Water." Brunswick County operates over 25 miles of reuse force mains that supply reuse water for irrigation to eleven golf courses and 1,040 acres of dedicated tree farms and turf farms at four different locations. Using reuse water for irrigation has several advantages. One major advantage is that reuse water replaces potable water from the County's water system that would have been used for irrigation. This reduces the peak loading on the water system. Additionally, using reuse water for irrigation allows golf courses to reduce the amount of fertilizer spread on the golf course.

STORMWATER SYSTEM

The Town's stormwater ordinance became effective November 14, 2000. The stormwater ordinance was adopted to administer and enforce stormwater quantity and quality, and to create public education programs for Town citizens. Stormwater infrastructure is located primarily on the island (See Map 4.3).

All new developments, regardless of size, are subject to the Town's Stormwater Management Ordinance. The ordinance also requires new developments to sign a maintenance agreement for their stormwater systems, prior to receiving a Certificate of Occupancy for the site.

Three types of stormwater systems exist within the Town of Ocean Isle Beach: the Town owned systems; systems owned and operated by the NC Department of Transportation (DOT); and private systems. Private owners are required to have an engineered stormwater system designed to capture the first 1.5 inches of rainfall. The Town-owned stormwater system is a combination of catch basins piped to outfalls, swales and ditches, and catch basins tied to underdrain systems.

TRANSPORTATION SYSTEMS

The Odell Williamson Bridge across the ICWW is the only means of ingress and egress to the Town of Ocean Isle Beach from the mainland. The two-lane bridge connects to a three-lane road (NC 904) that intersects with First Street. First Street is the major thoroughfare that runs from the west end to the east end of the beach. The road system is displayed graphically on Map 4.4. In 2007/2008, the Town installed a roundabout at the intersection of Causeway Drive and East First Street that improved traffic flow, while another roundabout is slated for installation at the intersection of Beach Drive and Ocean Isle Beach Road. Work on the roundabout is tentatively scheduled for completion in late 2017/early 2018.

The Odell Williamson Bridge on NC 904 is operated and maintained by the North Carolina Department of Transportation (NCDOT). Based upon information provided by the NCDOT Bridge Maintenance Unit, the Odell Williamson Bridge was constructed of pre-stressed concrete in 1984. The bridge was designed for seven percent of traffic to be trucks and for a maximum of 50-mph speeds. After the first year the bridge was complete (1985), the annual average daily traffic (AADT) was 2,500 vehicles. The design year set at 2005 had an estimated AADT of 5,000 vehicles; however, the 2004 AADT was 16,000 vehicles. It seems that the bridge designer has underestimated the amount of traffic that the Odell Williamson Bridge would receive. Although the design year AADT is set 20 years from the construction date, the design life for the bridge project is typically 50 years or more.

The DOT Bridge Maintenance Unit inspects the bridge every two years; most recent inspection was conducted in 2015. Currently, there are no scheduled bridge repairs or

improvements. During periods of severe weather with sustained winds of 50-mph or greater, the bridge is closed to traffic, and entry or exit to the Island is prohibited.

TRAFFIC COUNTS

The annual traffic count used for planning purposes is called the Annual Average Daily Traffic Count (AADT). The AADT is the number of vehicles passing in both directions over a single point on a roadway over the course of a year divided by the 365 days in a year. For example, if 50,000 vehicles pass a single point on the road in a year, the AADT is 137 vehicles per day ($50,000 / 365 = 137$). It must be noted that these annual traffic counts are averages, and certain peak season days may produce traffic counts well in excess of the AADT count. Seasonal traffic counts are of particular concern in Ocean Isle Beach. However, in 2008, the NCDOT Traffic Survey Group suspended standalone seasonal traffic counts. As a result, only AADT counts are available. Peak volumes are included in the AADT, but are not available separately for comparison purposes.

To evaluate transportation and roadway deficiencies, the AADT are typically compared to a road's design capacity. Traffic on key segments of various roadways is counted and calculated annually and compared to a standard road design capacity based on that roadway's individual type. For example, a two-lane roadway has a different design capacity than a roadway that has two-lanes with a center turn lane.

In Ocean Isle Beach, the highest AADT counts are found on Beach Drive (NC 179 BUS), Brick Landing Road (SR 1143/NC 179) and Ocean Isle Beach Road (SR 1184) (See Map 4.4 for more information).

None of the roadways within Ocean Isle Beach have an AADT which exceeds the current capacity. However, if accounting for seasonal increases in population and traffic, then both Beach Road and Ocean Isle Beach Road may exceed capacity or approach it during the summer months. It should be noted that NCDOT designs roadways for AADT, not peak traffic counts.

2035 LONG RANGE TRANSPORTATION PLAN

In 2012, Ocean Isle Beach became a member of the Grand Strand Area Transportation Study (GSATS). The 2010 Census reported continued growth for the area and, for the first time, the Myrtle Beach UZA (renamed the Myrtle Beach-Socastee SC/NC Urbanized Area) extended into the southern portions of Brunswick County. As a result, in 2012, Ocean Isle Beach became a member of GSATS. NCDOT, South Carolina Department of Transportation (SCDOT), Brunswick County, and the Towns of Calabash, Carolina Shores, Holden Beach, Ocean Isle Beach, Shallotte, Sunset Beach and Varnamtown have all entered into a memorandum of understanding with GSATS to create a bi-state Metropolitan Planning Organization (MPO). GSATS is responsible for the development of the area's Long Range Transportation Plan (LRTP) and the identification and ranking of projects for funding

through an adopted Transportation Improvement Program (TIP). The North Carolina portion of the GSATS Study Area extends from the South Carolina state line northward to the Lockwood Folly River and from the Atlantic Ocean westward to just beyond US 17 to include the Town of Shallotte.

The development of the GSATS LRTP coincides with and complements NCDOT's prioritization process. The Strategic Transportation Investments (STI) law created a process to determine how NCDOT, in partnership with local governments, will fund and prioritize transportation projects in the state of North Carolina. Under STI, all modes compete for the same funding. This means that roadway projects compete with ferry projects which will compete with public transportation projects, bicycle/pedestrian, aviation, and rail.

The Strategic Prioritization Office of Transportation (SPOT) develops quantitative scores for all projects. Only the highest scoring projects are selected to be included in the NCDOT Statewide Transportation Improvement Plan (STIP). The STIP, which identifies the transportation projects that will receive funding during a 10-year period, is a state and federal requirement. Federal law requires it to be updated at least every four years. NCDOT, however, updates it every two years. Ocean Isle Beach has no projects included in the the 2018-2027 STIP draft. However, several projects are identified in the GSATS 2035 Long Range Transportation Plan. Those projects are described in Table 4.5.

Table 4.5: Ocean Isle Beach GSATS 2035 Long Range Transportation Plan Projects

Source: GSATS LRTP

Roadway	Description	Improvement	Cost Estimate
Beach Dr.	NC 179 BUS: Widen to a multi-lane facility from Ocean Isle Beach Road SW (SR 1184) to the NC 904 (Seaside Road), and multipurpose path.	Widen to 4-Lane W/Median & Multipurpose Path	\$16,556,948
NEW (Brick Landing Rd.)	New Bridge from Brick Landing Road (SR 1143) to Shallotte Blvd (SR 1202).	New Bridge	\$38,211,948
Ocean Isle Beach Rd.	Ocean Isle Beach Road (SR 1184): Widen to a multi-lane facility from US 17 to NC 179 (Beach Drive).	Widen to 4-Lane W/Median	\$21,484,954
Ocean Isle Beach Pedestrian Bridge	Pedestrian bridge adjacent to the Odell Williamson Bridge (NC 904) across the Intracoastal Waterway in Ocean Isle Beach	Bridge	\$9,500,000

NON-MOTORIZED TRANSPORTATION

Non-motorized transportation is increasingly important nationwide and particularly for tourist destinations such as Ocean Isle Beach. Non-motorized transportation refers to alternative travel choices such as cycling or walking. While non-motorized transportation is often considered a leisure travel mode, it can also be utilized to travel from point A to B for utilitarian purposes. In the past, residents have expressed interest in expanding options for cycling and pedestrian travel in the Town. In 2014, Ocean Isle Beach adopted a Comprehensive Bicycle and Pedestrian Master Plan. The planning process began with a Kick-Off Meeting on February 5, 2014 and continued throughout the year. The Kick-Off meeting was the first of four project Steering Committee meetings. Through this plan, Ocean Isle Beach hopes to increase pedestrian and bicyclist safety, foster better access to community destinations, create opportunities for active and healthy lifestyles and enhance the quality of life in Ocean Isle Beach.

Table 4.6: Top 5 Bicycle & Pedestrian Master Plan Projects

Source: Ocean Isle Beach Bicycle & Pedestrian Plan

General Priority Ranking	Street Name	Start/End Point	Facility Type	Crossing Improvements	Length (Feet)	Length (Miles)	Location
1	West 1 st Street	Beaufort to Causeway	Multi-Use Trail/Sidepath	Driftwood	5,816	1.10	North
2	East 1 st Street	Causeway to Leland	Multi-Use Trail/Sidepath	Leland	5,531	1.050	North
3	West 2 nd Street	West End to Beaufort	Multi-Use Trail/Sidepath	-	5,383	1.02	North
4	East 1 st Street	Leland to Winston-Salem	Multi-Use Trail/Sidepath	Winnabow	4,944	0.94	North
5	West 2 nd Street	Beaufort to Driftwood	Multi-Use Trail/Sidepath	-	1,421	0.27	North

The table above illustrates the top five priority projects for Ocean Isle Beach's Bicycle and Pedestrian Plan. Project ranking began with making a list of all of the network recommendations proposed in the plan. The segments were then broken down at logical points, such as at major crossings and at connections to existing facilities. In 2015, the Town initiated a process to construct a multi-use path on the island; however, the project has since been shelved. Due to right-of-way concerns, the Town is pursuing options for the installation of on-street bicycle lanes in favor of the more costly multi-use path. The Town hopes to further educate citizens on the benefits of non-motorized transportation in the hopes of constructing future facilities.

PUBLIC ACCESS FACILITIES

The Coastal Area Management Act (CAMA) considers public access facilities to be one of the key components of a coastal community's infrastructure. This section of the Land Use Plan

inventories public access facilities and identifies potential public access sights, so that the Town may discuss and establish policies and objectives to further the goal of maximizing and maintaining public access.

EXISTING PUBLIC ACCESS SITES & PARKING FACILITIES

There are 29 existing public access sites along the approximately 4 miles of oceanfront beach in the Town Limits equating to one access site every 782 feet. There are five regional beach access sites on the island, including (1 & 2) either side of the Ocean Isle Beach's Pier; (3) Ferry Landing Park; (4) Beaufort Street; and (5) the Community Center. Regional sites are designated by having 25+ parking spaces and having additional facilities like restrooms, picnic tables and showers. The remaining public access sites on the island are considered local sites used primarily as dune crossovers. Of the remaining public access sites, half of them have parking spaces. See Table 4.7 and Map 4.5 for more information.

There are two formally-designated public access sites on the Intracoastal Waterway side of the Island. One public access site is a boat ramp located under the Intracoastal Waterway Bridge. The other public access site is a kayak ramp located at Ferry Landing Park on the north end of the island.

Table 4.7 Public Beach Access Locations & Parking Spaces

Source: Town of Ocean Isle Beach

Location	Handicap Accessibility	CAMA Access	Parking Spaces
Fourth St.		X	
Columbia St.			
Ferry Landing Park	Handicap	X	35
Shallotte Blvd			61
Durham St.	Handicap	X	
Lumberton St.		X	
High Point St.		X	
391 E. First St.		X	
Greensboro St.	Emergency	X	
Winnabow St.		X	25
Chadbourn St.		X	25
Goldsboro St.		X	21
Leland St.		X	25
Raeford St.	Handicap/Full Wheelchair	X	18 + 12 Golf Cart
Newport St.		X	24
Concord St.		X	25
Monroe St.	Handicap/Full Wheelchair	X	33
Pier & Breakers	Emergency Access	X	
Pier #1			100 (paid)
Pier #2			100 (paid)
Oxford St.		X	
Shelby St.		X	
Summerplace		X	14
Duneside Dr.		X	
Isle Plaza		X	
Starboard St.	Emergency Access	X	
Beaufort St.	Handicap/Full Wheelchair	X	31
Sandcastles		X	
Oceanside West II		X	
Total			537

With increasing numbers of visitors, there is a high demand for public parking spaces during the summer months. Table 4.7 also illustrates the amount of parking spaces available to the public. The Town of Ocean Isle Beach currently has a total of 537 parking spaces to accommodate visitors.

SOLID WASTE DISPOSAL & RECYCLING

The Town of Ocean Isle Beach makes every feasible effort to minimize the generation of waste, to recycle waste for which viable markets exist and to use recycled materials when applicable. The Town contracts with Waste Industries Inc. for solid waste disposal, additional curbside pick-ups, and recycling.

All construction and demolition (C&D) materials and yard debris are taken to the Brunswick County and Sampson County landfills.

GOALS, OBJECTIVES, AND POLICIES

INTRODUCTION

The Town has established a set of land use and development related policies to act as guidelines during any official decision making process. These policies and goals provide citizens, property owners, and developers with a predictability of official actions. Town policies in this chapter relate to infrastructure and community facilities. Two CAMA management topics are covered in the policy section herein: Infrastructure Carrying Capacity and Public Access and Recreation.

It should be noted that these topic areas are developed as part of the Division of Coastal Management's 7B Land Use Planning Guidelines.

Refer to Appendix A for Definitions of actions words contained within the policy section.

INFRASTRUCTURE CARRYING CAPACITY

Goal 4.1: To ensure that public infrastructure systems are appropriately sized, located and managed so the quality and productivity of the Areas of Environmental Concern (AEC) and other fragile areas are protected and restored.

Objective 4.1.A: Ensure that the location and capacity of public infrastructure is consistent with the Town's growth and development goals.

Policy 4.1.A.1: Local Commitment to Providing Services to Development: It is the policy of the Town that developers/owners share in the financial responsibility of providing basic utility services such as water and sewer.

Policy 4.1.A.2: Operation of Water and Wastewater Facilities: The Town shall ensure efficient uninterrupted operation of water and wastewater facilities for Town residents.

Recommended Action 4.1.A.2.a: The Town will continue to work closely with Brunswick County to ensure that there is adequate sewage treatment capacity to serve year round and seasonal populations within the incorporated area of Ocean Isle Beach as well as in the surrounding unincorporated areas beyond the capacity of the OIB wastewater treatment facility.

Recommended Action 4.1.A.3.a: Town officials will consider providing generators at all pump stations to discourage service loss in the event of power outage.

Policy 4.1.A.3: Maintaining Drinking Water Supplies: The Town will consider modifying its water purchase agreement with the Brunswick County Utility Department in the five to ten years to meet estimated growing demand.

Policy 4.1.A.4: Soils and Septic Tank Suitability: Growth and development will not be permitted in the ETJ where septic tanks will not function and where sewer service is not available. All septic tanks must be in compliance with State Health Regulations as administered by the Brunswick County Health Department.

Policy 4.1.A.5: Maintaining Adequate Fire Protection: The Town will work with the Brunswick County Utility Department to ensure that adequate water pressure is available to meet fire suppression as needed to keep pace with the demands of the growing seasonal population.

Policy 4.1.A.6: Bridge and Road Improvements: The Town supports state and federal bridge and road improvement programs. The addition of a second bridge from the mainland to the Island will help alleviate traffic congestion associated with a growing seasonal population.

Recommended Action 4.1.A.6.a: Town officials will continue to work with NCDOT and GSATS to help improve traffic conditions both on the island and in surrounding areas as a result of a growing seasonal population, and growing population on the mainland in areas near Ocean Isle Beach.

Recommended Action 4.1.A.6.b: Town officials will work diligently with developers and NCDOT to incorporate transportation improvements into new commercial and residential development projects.

Recommended Action 4.1.A.6.c: Town officials will continue to support the following projects identified in the GSATS 2035 Long Range Transportation Plan:

Roadway	Description	Improvement
Beach Dr.	NC 179 BUS: Widen to a multi-lane facility from Ocean Isle Beach Road SW (SR 1184) to the NC 904 (Seaside Road), and multipurpose path.	Widen to 4-Lane W/Median & Multipurpose Path
NEW (Brick Landing Rd.)	New Bridge from Brick Landing Road (SR 1143) to Shallotte Blvd (SR 1202).	New Bridge
Ocean Isle Beach Rd.	Ocean Isle Beach Road (SR 1184): Widen to a multi-lane facility from US 17 to NC 179 (Beach Drive).	Widen to 4-Lane W/Median
Ocean Isle Beach Pedestrian Bridge	Pedestrian bridge adjacent to the Odell Williamson Bridge (NC 904) across the Intracoastal Waterway in Ocean Isle Beach	Bridge

Policy 4.1.A.7: Golf Carts: The Town supports the use of street legal golf carts as a functional means of reducing automobile traffic and parking demands at the beach.

Policy 4.1.A.8: Pedestrian and Bicycle Access: The Town encourages pedestrian and bicycle access along the Island to help alleviate traffic problems and improve public access to the shoreline.

Recommended Action 4.1.A.8.a: The Town will pursue federal and state grant opportunities to construct sidewalks, walkways, and bike lanes at strategic locations on the Island.

Recommended Action 4.1.A.8.b.: The Town shall consider partnering with Brunswick County to implement the recommendations of the county's 2016 Greenway and Blueway Plan.

Policy 4.1.A.9: Bicycle & Pedestrian Plan: The Town supports the 2014 Bicycle and Pedestrian Plan.

Recommended Action 4.1.A.9.a: Town officials will continue to implement recommendations outlined in the Bicycle and Pedestrian Plan. The Town will prioritize the installation of on-street bicycle lanes in favor of off-street facilities.

Policy 4.1.A.10: Maintenance of Central Sewer System: The Town shall maintain the ordinance which requires that all new development or redevelopment tie into the centralized sewer system within town limits.

Policy 4.1.A.11: Rezoning Analysis: The Town shall conduct an analysis of infrastructure before rezoning parcels to allow for more intensive development or changing development standards to allow for higher densities and intensities. This analysis shall determine if existing infrastructure can provide adequate service to the Town as a whole in light of the proposed re-zonings or development standard changes. The infrastructure analysis shall review water and sewer capacity, fire flow capacity, public access and other infrastructure demands related to future development.

PUBLIC ACCESS AND RECREATION

Goal 4.2: Maximize public access to the beaches and public trust waters of the Town of Ocean Isle Beach and maximize recreational opportunities for residents and visitors.

Objective 4.2.A: Access for All Segments of the Community: Implement policies and recommendations that assure satisfactory access to all segments of the community including persons with disabilities.

Policy 4.2.A.1: Existing Public Access Facilities: Ocean Isle Beach will continue to support public access to the oceanfront and other waterways by seeking State and or Federal financial assistance to improve existing access facilities.

Recommended Action 4.2.A.1.a: When making improvements to existing public access facilities, the following are considered to be priorities for improvements:

- Improving handicapped access at existing public access sites;
- Add additional amenities such as showers and foot washes to one or more public access sites at the eastern and western ends of the Island;
- Work with the state to improve the maintenance of the state wildlife boat ramp; and,
- Where practicable, increase public parking near existing public access sites.

Policy 4.2.A.2: Expand Public Access Facilities: Ocean Isle Beach will continue to work towards increasing public access to the Ocean and the Intracoastal Waterway by seeking State and or Federal financial assistance to develop new access facilities.

Recommended Action 4.2.A.2.a: The following are considered to be priorities for new public access facilities:

- Identify additional locations along the ICWW that could be developed to improve public access.
- Identify additional boat dock facilities, including options for day docks and transient public boat dock facilities.

Policy 4.2.A.3: Parking at Public Access Sites: Ocean Isle Beach will continue to look for opportunities to increase the public parking associated with public access sites on the Island.

Recommended Action 4.2.A.3.a: The Town will continue to examine whether there are any other locations where a change in the traffic flow from two-way to one-way traffic can be used to increase parking for beach access.

Recommended Action 4.2.A.3.b: The Town supports the development of a privately operated off-island parking area to reduce vehicle traffic and congestion on the island.

Recommended Action 4.2.A.3.c: The Town shall identify Town owned property that may provide suitable access to the ICWW, mark these sites, and develop plans to improve these sites when practicable.

Recommended Action 4.2.A.3.d: The Town will study several parking/right-of-way locations and prepare conceptual layouts that may allow for additional parking spaces.

Policy 4.2.A.4: Marinas and private boat slips: The Town generally supports the development of marinas and private boat slips within Ocean Isle Beach and the ETJ.

Policy 4.2.A.5: Dry Stack Storage Facilities: The Town generally supports the development of dry stack storage facilities within the ETJ.

Policy 4.2.A.6: Signage: The Town shall improve the signage of existing public access sites located along the sound.

Policy 4.2.A.7: Dune Protection: Public pedestrian access is limited to designated dune crossover areas in order to minimize damage to dunes and vegetation. Walking on dunes or acting in any manner that causes damage to dunes and vegetation is against state and local ordinances and is subject to fines. The Town, through its CAMA minor permit program, may allow the construction of private dune walkover structures to protect the dunes at private access points.

Policy 4.2.A.8: Supporting Federal and State Programs to Expand Access: The Town is committed to county, state, and federal programs that maximize public access to the beaches and public trust waters of the Town of Ocean Isle Beach. The programs include, but are not limited to, the Coastal Area Management Act, the North Carolina Public Beach and Waterfront Access Program, Federal channel maintenance and inlet projects and beach renourishment projects.

Objective 4.2.B: Reduce User Conflicts: Reduce user conflicts in the public trust waters of Ocean Isle Beach.

Policy 4.2.B.1: Floating Homes: The Town prohibits living aboard boats and floating homes, is supporting of the State's policies on floating structures, and believes that floating homes should not be allowed within the Town's Public Trust Areas.

Policy 4.2.B.2: Off Road Vehicles: Off road vehicles (with the exception of Town or Emergency vehicles) are not allowed outside public rights of way and private drives at Ocean Isle Beach.

Policy 4.2.B.3: Safe Boating: The Town shall seek to increase public awareness of safe boating rules.

Policy 4.2.B.4: Operation of Jet Skis and Personal Watercraft: The Town shall seek to ensure the responsible use of Jet Ski's and other similar personal watercraft in the public trust waters of Ocean Isle Beach.

Objective 4.2.C: Maintaining Navigation Channels: Prevent uses that would directly or indirectly impair or block existing navigational channels.

Policy 4.2.C.1: Upland Excavation for Marina Basins: The Town of Ocean Isle Beach supports upland excavation for marina basins.

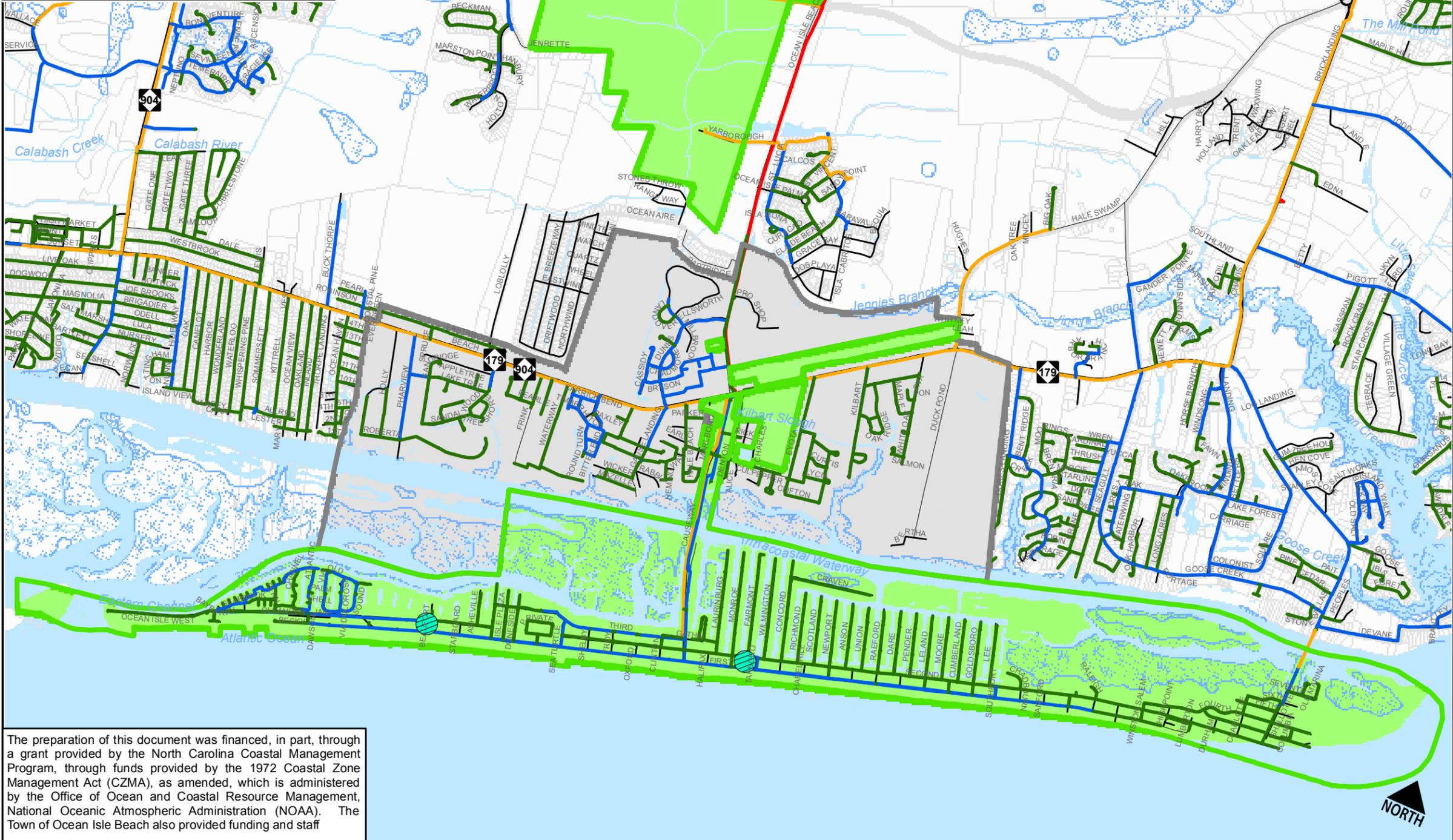
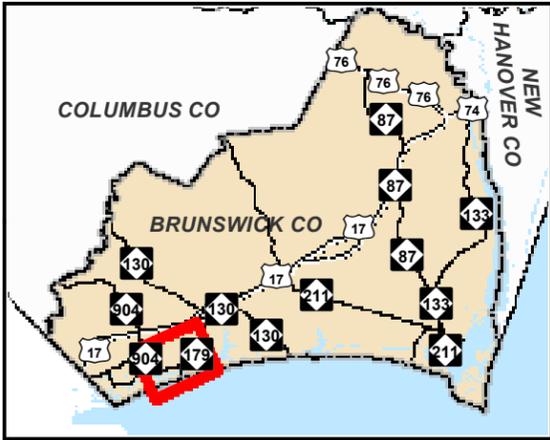
Policy 4.2.C.2: Maintenance of Navigation Channels: Ocean Isle Beach supports the proper maintenance of channels, particularly the Intracoastal Waterway due to the impact of this channel on commercial and recreational fisheries and general boating.

Policy 4.2.C.3: Blocking or Impairing Navigational Channels: Projects that would directly or indirectly block or impair existing navigational channels shall be prohibited. This includes but is not limited to projects that deposit spoils below mean high water, extend piers beyond the established pier head line or any projects determined to be detrimental to navigation of the public trust waters.

Objective 4.2.D: Recreation Access for Residents and Visitors: Provide a quality recreation experience to both residents and visitors alike.

Policy 4.2.D.1: Parks and Recreational Facilities: The Town supports the development, maintenance, and enhancement of its parks and recreational facilities for the benefit of residents and visitors alike.

Recommended Action 4.2.D.1.a: The Town shall continue to promote the use of the community center and consider options for relocation to more expansive sites/facilities as necessary.



Town of Ocean Isle Beach

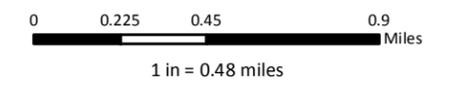


2016 Land Use Plan

Map 4.1 Water Lines

- Waterbody
- Swamp/Marsh
- Municipal Boundaries**
- Corporate Limits
- ETJ
- Water Towers**
-
- Water Lines**
- 2" - 6"
- 8" and 10"
- 12"
- 16"

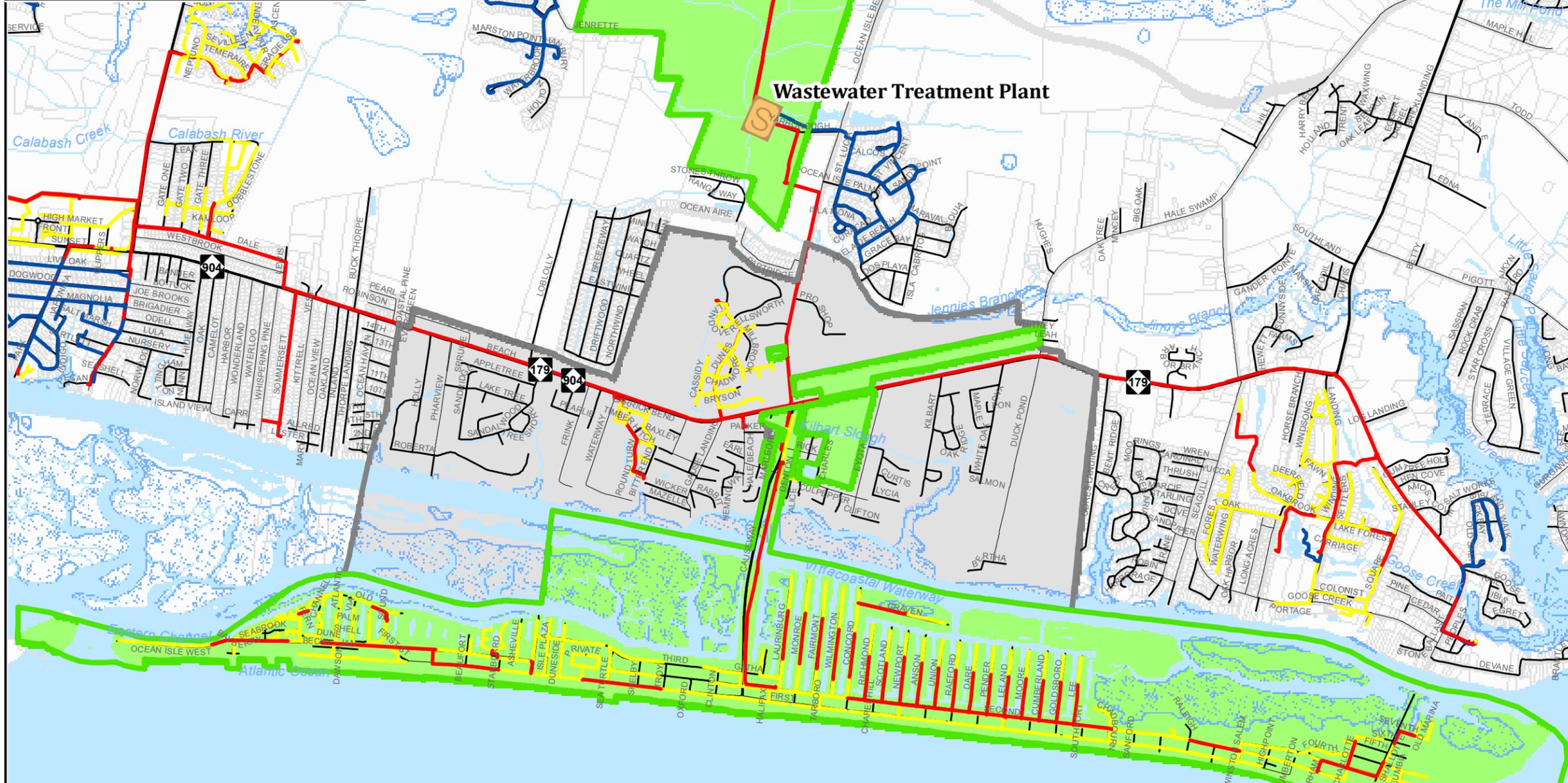
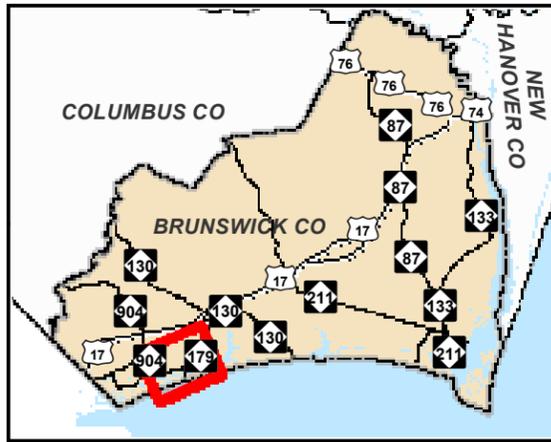
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Map prepared by Cape Fear Council of Governments. Data sources: Brunswick Co., OIB Public Utility, NCDEQ, NCDOT, USGS.





Town of Ocean Isle Beach

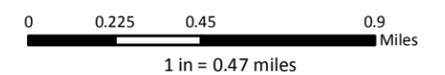


2016 Land Use Plan

Map 4.2 Wastewater Lines

- Waterbody
- Swamp/Marsh
- Wastewater Treatment Plant
- Municipal Boundaries**
- Corporate Limits
- ETJ
- Wastewater Lines**
- Force Main
- Gravity
- Low Pressure Line

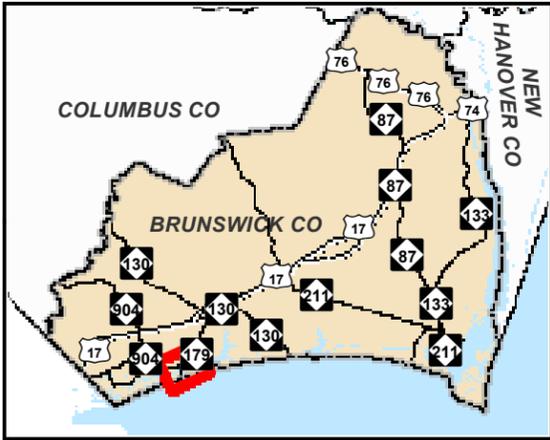
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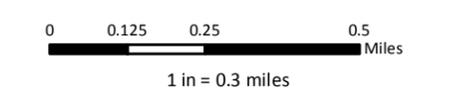
Town of Ocean Isle Beach



2016 Land Use Plan Map 4.3 Catch Basins and Stormwater Outfalls

- Waterbody
- Swamp/Marsh
- Municipal Boundaries**
- Corporate Limits
- ETJ
- Catch Basins
- Stormwater Outfalls

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Town of Ocean Isle Beach



2016 Land Use Plan

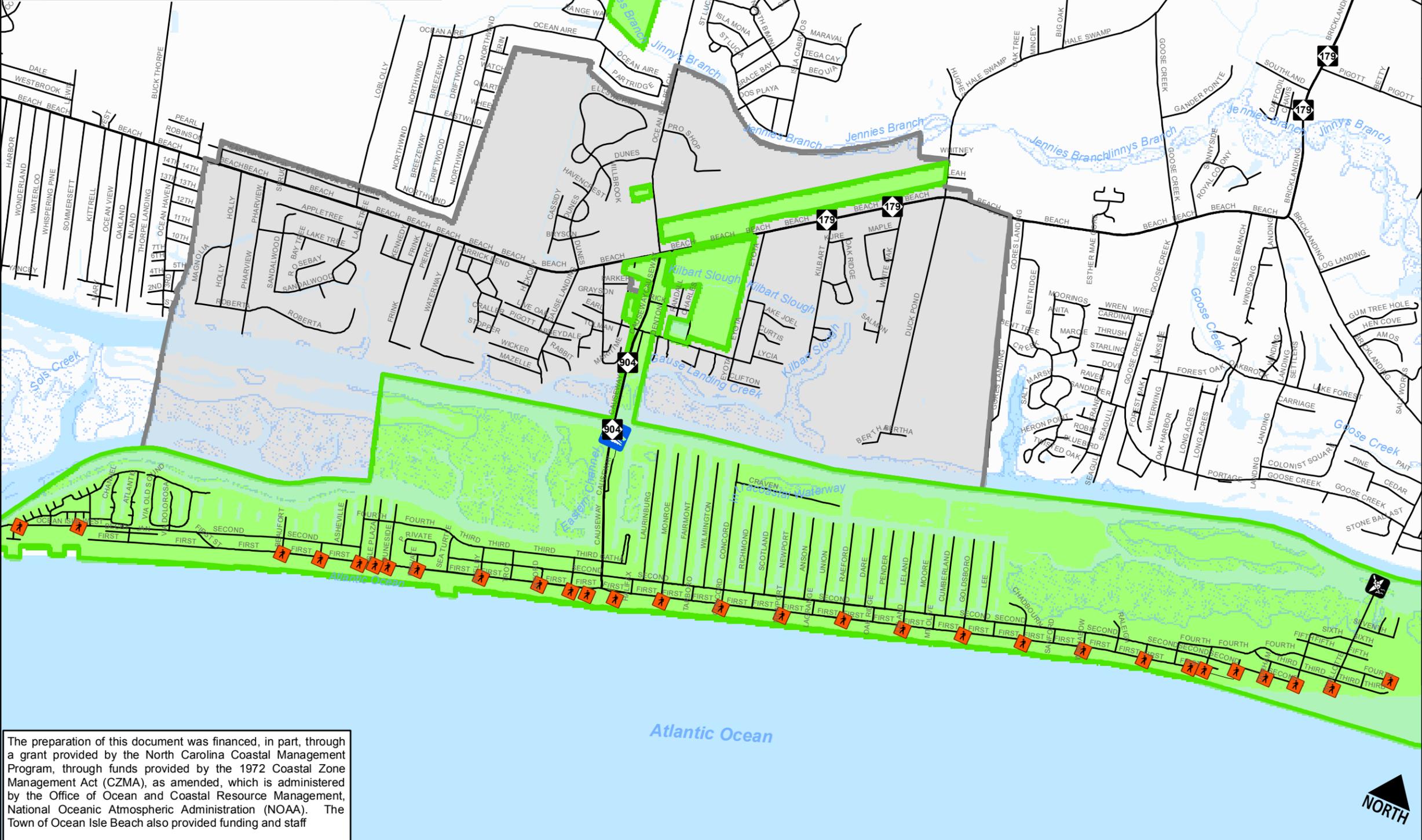
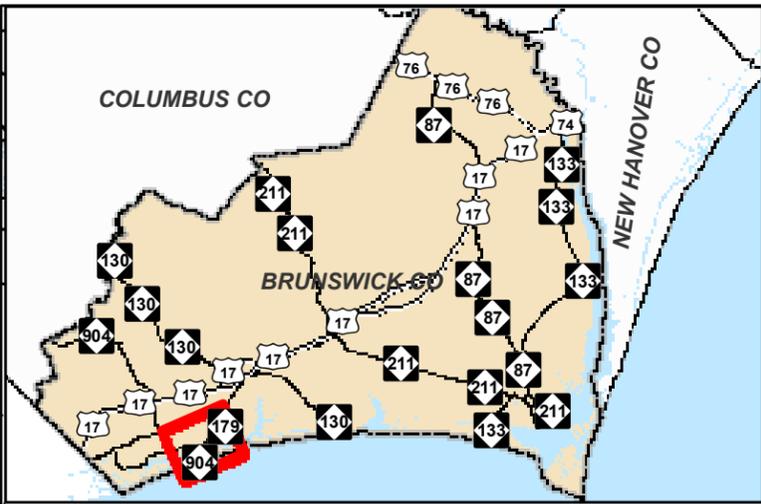
Map 4.5
Public Access Sites

-  Kayak Ramp
-  Boat Access
-  Public Beach Access
-  Waterbody
-  Swamp/Marsh
- Municipal Boundaries**
-  Corporate Limits
-  ETJ

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