



## SECTION 4 COUNTY PROFILE

This profile provides general information for Cape May County, including its physical setting, general building stock, and land use, population and demographics and population trends. The profile also includes the County's critical facilities county. Analyzing this information leads to an understanding of the study area, including economic, structural, and population assets at risk, and concerns that could be related to hazards analyzed later in this plan (e.g., low lying areas prone to flooding, high percentage of vulnerable persons in an area).

### 4.1 GENERAL INFORMATION

Cape May County was first discovered and settled by Dutch explorers in the early 17<sup>th</sup> century. The region eventually grew as its inhabitants further established its whaling and agricultural industries. By the turn of the 20<sup>th</sup> century, the County had changed into one of the most popular seaside summer resort destinations. Today, the County continues to be successful in the tourist industry (County SRPR 2015; Cape May County Planning Board 2005). As of 2019, the County accounts for the largest share (8.7%) of the State's tourism visitation, attracting 10.2 million visitors. The County also attracts the second-highest amount of visitor spending (15.9% of the State's tourism spending), totaling \$6.9 billion in 2019. Tourism accounts for over 43% of total employment in the County (Visit NJ, 2020).

Cape May County forms the southern tip of the State of New Jersey and covers an area of 267 square miles (excluding waterbodies). The County is peninsula and is bounded on two sides by large, natural bodies of water and on the third by two rivers and the Great Egg Harbor Inlet. The County is bordered to the north by Atlantic County, to the south and east by the Atlantic Ocean, and to the west by Cumberland County and the Delaware Bay. According to the 2010 Census, the total population of the County is 97,265 (U.S. Census 2016; Cape May County Planning Board 2005). It is comprised of 16 municipalities which can be further designated into two categories: the mainland and the resort municipalities (County SRPR 2015).

Cape May County is located approximately 150 miles south of New York City, 80 miles southeast of Philadelphia, and 130 miles east of Washington, D.C. Due to its ideal location, Cape May County is a popular tourist destination and the main reason for the County's success in the resort industry (Cape May County Planning Board 2005).

### 4.2 MAJOR PAST HAZARD EVENTS

Presidential disaster declarations are typically issued for hazard events that cause more damage than state and local governments can handle without assistance from the federal government, although no specific dollar loss threshold has been established for these declarations. A presidential disaster declaration puts federal recovery programs into motion to help disaster victims, businesses and public entities. Some of the programs are matched by state programs. Review of presidential disaster declarations helps establish the probability of reoccurrence for each hazard and identify targets for risk reduction. Table 4-1 shows FEMA disaster declarations that included Cape May County through 2020 since 1954, when records began.



Table 4-1. History of Hazard Events in Cape May County, New Jersey

Disaster Number	Event Date	Declaration Date	Incident Type	Title
DR-205	August 18, 1965	August 18, 1965	Drought	Water Shortage
DR-310	September 4, 1971	September 4, 1971	Flood	Heavy Rains & Flooding
EM-3005	December 24, 1974	December 24, 1974	Coastal Storm	Severe Storms, High Winds, and High Tides
DR-519	August 21, 1976	August 21, 1976	Flood	Severe Storms, High Winds, and Flooding
DR-528	February 8, 1977	February 8, 1977	Severe Ice Storm	Ice Conditions
EM-3083	October 19, 1980	October 19, 1980	Drought	Water Shortage
DR-701	March 28 - April 8, 1984	April 12, 1984	Flood	Coastal Storms and Flooding
DR-749	September 27, 1985	October 15, 1985	Hurricane	Hurricane Gloria
DR-936	January 4, 1992	March 3, 1992	Severe Storm(s)	Severe Coastal Storms
DR-973	December 10-17, 1992	December 18, 1992	Flood	Coastal Storm, High Tides, Heavy Rain, & Flooding
EM-3106	March 13-17, 1993	March 17, 1993	Snow	Severe Blizzard
DR-1088	January 7-12, 1996	January 13, 1996	Snow	Blizzard of '96 (Severe Snowstorm)
DR-1206	February 4-8, 1998	March 3, 1998	Coastal Storm	Severe Winter Coastal Storm, High Winds, Flooding`
EM-3148	September 16 - September 18, 1999	September 17, 1999	Hurricane	Hurricane Floyd Emergency Declarations
EM-3156	May 30 - November 1, 2000	November 1, 2000	Other	West Nile Virus
EM-3169	September 11, 2001	September 19, 2001	Fire	Fires and Explosions
EM-3181	February 16- 17, 2003	March 20, 2003	Snow	Snow
EM-3257	August 29 -- October 1, 2005	September 19, 2005	Hurricane	Hurricane Katrina Evacuation
DR-1867	November 11-15, 2009	December 22, 2009	Severe Storm(s)	Severe Storms and Flooding Associated with Tropical Depression Ida and a Nor'easter
DR-1889	February 5-6, 2010	March 23, 2010	Snow	Severe Winter Storm and Snowstorm
DR-1897	March 12 -- April 15, 2010	April 2, 2010	Severe Storm(s)	Severe Storms and Flooding
DR-1954	December 26-27, 2010	February 4, 2011	Snow	Severe Winter Storm and Snowstorm
EM-3332	August 26 - September 5, 2011	August 27, 2011	Hurricane	Hurricane Irene
DR-4021	August 27 --September 5, 2011	August 31, 2011	Hurricane	Hurricane Irene
DR-4048	October 29, 2011	November 30, 2011	Severe Storm(s)	Severe Storm
EM-3354	October 26 --November 8, 2012	October 28, 2012	Hurricane	Hurricane Sandy
DR-4086	October 26 --November 8, 2012	October 30, 2012	Hurricane	Hurricane Sandy
DR-4264	January 22 -- 24, 2016	March 14, 2016	Severe Storm(s)	Severe Winter Storm and Snowstorm
EM-3451	January 20, 2020 -- Present	March 13, 2020	Biological	COVID-19
DR-4488	January 20, 2020 -- Present	March 25, 2020	Biological	COVID-19 Pandemic

DR FEMA Major Disaster Declaration  
EM FEMA Emergency Disaster Declaration





## 4.3 PHYSICAL SETTING

This section presents the physical setting of the county, including location, hydrography and hydrology, topography and geology, climate, and land use/land cover.

### 4.3.1 Location

Cape May County is in the southernmost section of the State of New Jersey. Its boundaries are generally defined by major waterbodies. This includes the Atlantic Ocean to the east, Delaware Bay to the south and west, and the Tuckahoe River to the north. The County's western boundary is partially formed by West Creek, a marshy tributary of the Delaware Bay. Cumberland County is located to Cape May County's west, and Atlantic County is situated to its north. The County is in relative proximity to major urban areas of the region despite being largely rural and natural in character in much of its land area. The County is approximately 100 miles to Baltimore, 121 miles to Washington, DC, 59 miles to Philadelphia, and 116 miles to New York City. Figure 4-1 provides the location of the county and its municipalities.



Figure 4-1. Location of Cape May County, New Jersey





### 4.3.2 Topography and Geology

Cape May County is composed of three distinct parts. The eastern section of the County is a chain of five low-lying islands that contain most of the County's vacation resorts. From southwest to northeast, the islands extend for approximately 32 miles from the City of Cape May to the City of Ocean City. The sands that make up these barrier beaches form a firm-bottomed beach with slopes gently into the Atlantic Ocean (Cape May County Planning Board 2005). The five major islands of the County include:

- Cape Island (including Cape May, West Cape May, Cape May Point, and portions of Lower Township)
- Five Mile Island (including Wildwood Crest, Wildwood, West Wildwood, North Wildwood, and the Diamond Beach section of Lower Township)
- Seven Mile Island (including Stone Harbor and Avalon)
- Ludlam Island (including Sea Isle City and the Strathmere section of Upper Township)
- Pecks Beach (including Ocean City)

The overall physiography of Cape May County is a low lying, gently rolling plain. The southernmost part of the County is a low sandy peninsula with elevations ranging from 0 to 27 feet above mean sea level. The Great Cedar Swamp and the Timber and Beaver Swamp are two large wetland areas located in the north-central part of the County (County SRPR 2015). The higher elevations portions of the County are in the northern mainland section of the County in Upper Township and Woodbine and along the Route 9 corridor. Local areas of higher elevation are found on the barrier islands behind dunes and in areas of artificial fill.

To the west of the islands, a band of salt marshes from one and 1.5 miles to 3.5 miles wide, interlocked with twisting channels and large sounds, separates the resort islands from the remainder of the County. These areas are nearly unpopulated, except for a few small developments located along access causeways. These wetland areas are one of Cape May County's most valuable environmental resources (Cape May County Planning Board 2005).

Located to the west of the wetlands is the remainder of the County, usually referred to as the mainland. This low relief area contains large developed areas, freshwater wetlands and woodland. This area of the County lies less than 25 feet above sea level (Cape May County Planning Board 2005). The entire eastern portion of the mainland consists of broad tidal marshland flanked by the five low-lying barrier islands to the east. These islands contain major resort areas, a main part of the County's economy. The barrier islands extend 32 miles from Ocean City in the north to the City of Cape May in the south. These islands are approximately one mile wide at their widest point with the average width being ¼ to ½ mile (County SRPR 2015).

### 4.3.3 Hydrography and Hydrology

The streams within the County are predominately tidal in their lower reaches, achieving their head in the freshwater swamps and discharging to saltwater marshes near the shore. Extensive tidal marshes border the lower reaches of the Tuckahoe River in the north and Dennis Creek in the west-central part of the County. There are over 1,574 miles of streams, along with approximately 24,150 acres of ponds, lakes, bays and reservoirs (County SRPR 2015). Figure 4-2 illustrates the waterbodies located within and around Cape May County.

#### Watersheds

A watershed is the area of land that drains into a body of water such as a river, lake, stream, or bay. It is separated from other systems by high points in the area such as hills or slopes. It includes not only the waterway itself but also the entire land area that drains to it. Drainage basins generally refer to large watersheds that encompass the watersheds of many smaller rivers and streams.



In New Jersey, the State is divided into 20 Watershed Management Areas (WMA), which are made up of smaller watersheds. Cape May County is in two of the 20 WMAs: Upper Delaware (WMA 1). Figure 4-3 illustrates the WMAs and watersheds of New Jersey, with Cape May County highlighted. Cape May County's watersheds are unique for their tidal influence.

#### **Watershed Management Area 15: Great Egg Harbor**

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WMA 15 includes watersheds draining to Great Egg Harbor Bay in Atlantic County. The management area encompasses waters draining eastern Gloucester and Camden Counties. The area includes the following watersheds: Great Egg Harbor River, Tuckahoe River, Absecon Creek and Patcong Creek (NJDEP 2012).

The Great Egg Harbor River is 49 miles long and drains an area of 304 square miles. It originates in eastern Gloucester and Camden Counties, an agricultural and suburban area, before flowing through the Pinelands region. The river drains into Great Egg Harbor Bay before emptying into the Atlantic Ocean. The river is tidal downstream of the dam at Mays Landing (NJDEP 2012).

#### **Watershed Management Area 16: Cape May**

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Most of Cape May County and portions of eastern Cumberland County form the 334 square mile drainage area of WMA 16. WMA 16 includes watersheds draining the Cape May portion of New Jersey. This area includes Cape May County south and east of the Tuckahoe River watershed and contains minimal surface water flow. Ground water and shellfish harvesting water quality are the principal water issues. No fixed physical/chemical fresh (surface) water monitoring locations are currently located within this management area (NJDEP 2012).



Figure 4-2. Bodies of Water in Cape May County

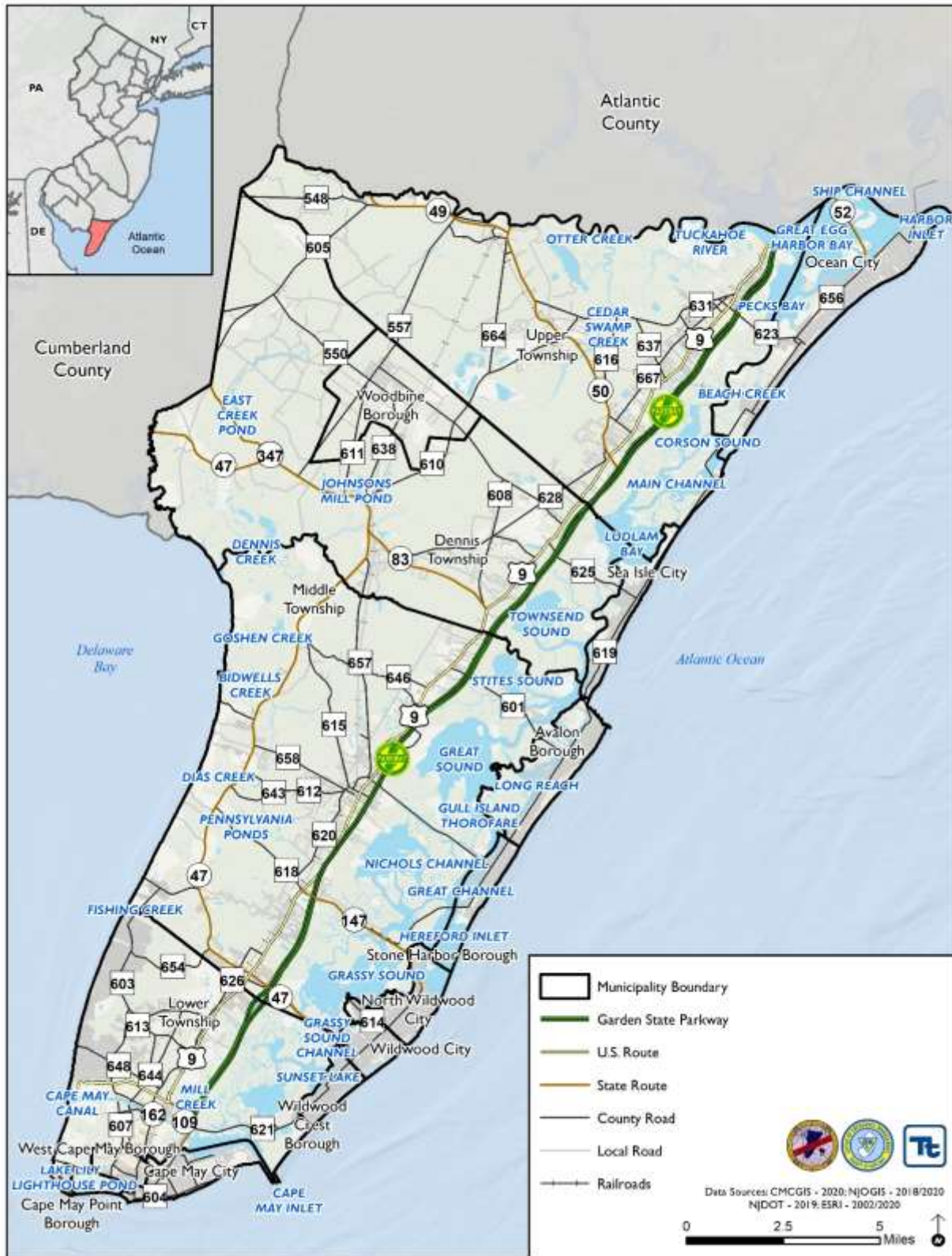
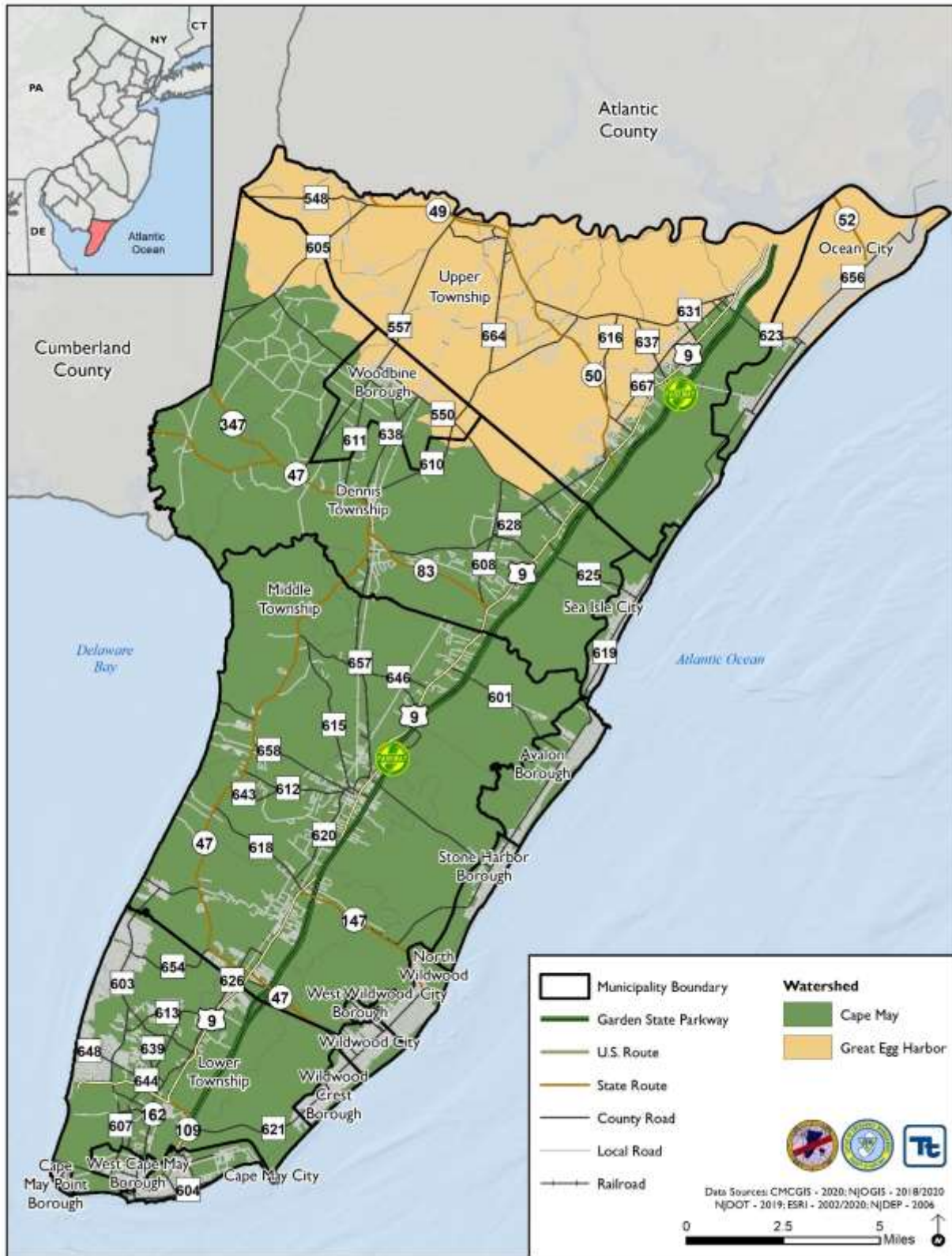




Figure 4-3. Watersheds of New Jersey







## Water Supply

Cape May County's water supply is derived from groundwater sources. There are no surface water supplies in the County, owing significantly to the extent of water withdrawal, saltwater intrusion, and the County's coastal geology. As of 2019, there are up to 170 municipal water supply wells and 21,500 domestic wells. The principal source of water is the Atlantic City 800-foot sand section of the Kirkwood Formation, which is largely protected from surface contamination. Reliance on this aquifer has caused water levels to decline and has brought brackish water into wells in Cape May County (United States Geological Survey, 2001). Water withdrawal varies throughout the season. For example, the Cape May Water/Sewer Department produced a record 2.8-million gallons of water per day on July 3-4, 2018 but produces as little as 600,000 gallons per day in the off-season (Cape May County Herald, 2019).

The communities of Cape May County derive water from various interconnected sources. For example, Ocean City's water derives from wells located on the island itself, Wildwood's water service (which also serves West Wildwood, Rio Grande in Middle Township, North Wildwood, and Wildwood Crest) is drawn from wells in Middle and Lower Townships from various aquifers. Cape Island's water supply derives from five wells in the Kirkwood-Cohansey and Atlantic City aquifer system and is then treated in a reverse osmosis water treatment plant. Dennis Township has no community water system, whereas other inland communities have a relatively small number of wells drawing water from various sources (Cape May County Herald, 2009).

### 4.3.4 Climate

The State of New Jersey is located approximately halfway between the equator and the North Pole, which influences the State by wet, dry, hot and cold airstreams and making for daily weather that is highly variable. There is an identified difference in climate between Cape May in the south and the Kittatinny Mountains in northwestern New Jersey. New Jersey has five distinct climate regions: Northern, Central, Pine Barrens, Southwest, and Coastal. A majority of Cape May County is in the coastal climate region, with a small portion located in the Pine Barrens region. According to the Office of the New Jersey State Climatologist (ONJSC):

- In the Coastal Climate Region, continental and oceanic influences battle for dominance on daily to weekly bases. In autumn and early winter, when the ocean is warmer than the land surface, the Coastal Zone will experience warmer temperatures than interior regions of the state. In the spring months, ocean breezes keep temperatures along the coast cooler. Being adjacent to the Atlantic Ocean, with its high heat capacity (compared to land), seasonal temperature fluctuations tend to be more gradual and less prone to extremes.

Sea breezes play a major role in the coastal climate. When the land is warmed by the sun, heated air rises, allowing cooler air at the ocean surface to spread inland. Sea breezes often penetrate 5-10 miles inland, but under more favorable conditions, can affect locations 25-40 miles inland. They are most common in spring and summer.

Coastal storms, often characterized as nor'easters, are most frequent between October and April. These storms track over the coastal plain or up to several hundred miles offshore, bringing strong winds and heavy rains. Rarely does a winter go by without at least one significant coastal storm and some years see upwards of five to ten. Tropical storms and hurricanes are also a special concern along the coast. In some years, they contribute a significant amount to the precipitation totals of the region. Damage during times of high tide can be severe when tropical storms or nor'easters affect the region.

- In the Pine Barrens, Scrub pine and oak forests dominate the interior southern portion of New Jersey, hence the name, Pine Barrens. Sandy soils, which are porous and not very fertile, have a major effect on the climate of this region. On clear nights, solar radiation absorbed during the day is quickly radiated



back into space, resulting in surprisingly low minimum temperatures. Atlantic City Airport, which is surrounded by sandy soil, can be 15-20 degrees cooler than the Atlantic City Marina on the bay, which is only about thirteen miles away.

The porous soil permits any precipitation to rapidly infiltrate and leave surfaces quite dry. Drier conditions allow for a wider range between the daily maximum and minimum temperatures and makes the area vulnerable to forest fires.

More specifically, the climate of Cape May County is influenced by its location on the Delaware Bay and the Atlantic Ocean. The mean annual temperature is approximately 55°F, with extremes ranging from -12°F to 105°F. The average annual precipitation is approximately 46 inches and is evenly distributed throughout the year (FEMA 2015). Normal seasonal snowfall in Cape May County is 14.9 inches (ONJSC 2013).

### 4.3.5 Land Use and Land Cover

Land use refers to the way land is developed or left in an undeveloped state. Land use in Cape May County is diverse and varies between the mainland and resort communities. Table 4-2 identifies the classification of the municipalities.

**Table 4-2. Municipality Classification**

Mainland	Resort
Dennis Township	Avalon Borough
Lower Township	Cape May City
Middle Township	Cape May Point Borough
Upper Township	North Wildwood City
Woodbine Borough	Ocean City
	Sea Isle City
	Stone Harbor Borough
	West Cape May Borough
	West Wildwood Borough
	Wildwood City
	Wildwood Crest Borough

Source: Cape May County SRPR 2015

Those municipalities identified as resort communities are found along the eastern border of the County and contain the most concentrated growth. The most common type of land use in these municipalities is residential, consisting mainly of seasonal homes. Commercial development is primarily tourist oriented and consists of large amusement areas, marinas, and various smaller attractions and facilities. Some industrial uses, primarily fishing related, are in the barrier islands. Most other industrial uses, however, are in mainland areas primarily because of the high cost of land in the barrier islands. It should be noted that these are light industrial uses. Because of the County's sensitive environment and relatively isolated location, heavy industry is almost non-existent (Cape May County Comprehensive Plan 2005).

The municipalities identified as mainland communities contain dense residential development in some areas, like that of the resort communities. Commercial development in the mainland is concentrated at specific sites and major intersections, usually near residential development. Industrial development in this part of the County is sparse. Due to the County's location and lack of adequate rail facilities contributes to this. There are small industrial parks found at the County Airport in Lower Township and in Middle Township on County Road 618.



The remainder of the mainland portion of Cape May County is classified as semi-rural with light residential/commercial development scattered throughout. There are large areas of woodland, farmland and freshwater and tidal wetlands (Cape May County Comprehensive Plan 2005).

For the purpose of this HMP Update, data from NJDEP will be used to illustrate land use within the County. According to this data, land use in Cape May County is broken down into six categories: agriculture, barren land, forest, urban, water, and wetlands. In 2015, the majority of land (44.4%) in Cape May County was designated as wetlands. This is followed by forested land (18.9%) and urban land (18.8%). Refer to Table 4-3 and Figure 4-4 below.

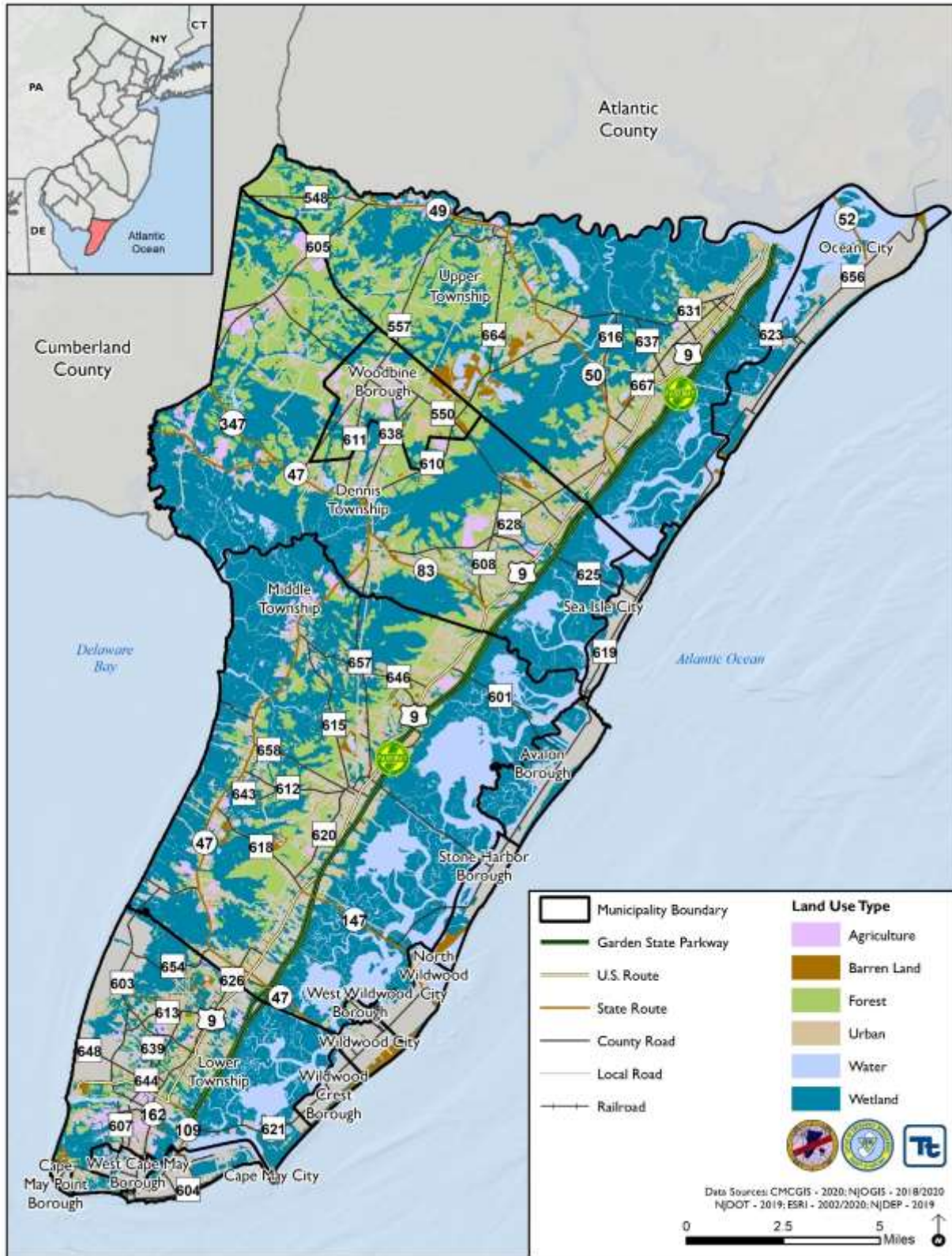
**Table 4-3. Land Use Summary for Cape May County, 2015**

Land Use Category	2015 Land Use Classification	
	Acreage	Percent of County
Agriculture	5,454	3.0%
Barren Land	2,959	1.6%
Forest	34,618	18.9%
Urban	34,395	18.8%
Water	24,307	13.3%
Wetlands	81,393	44.4%

Source: NJDEP, 2019 (updated 2015 Land Use Classification)



Figure 4-4. 2015 New Jersey Department of Environmental Protection (NJDEP) Land Use Land Cover for Cape May County





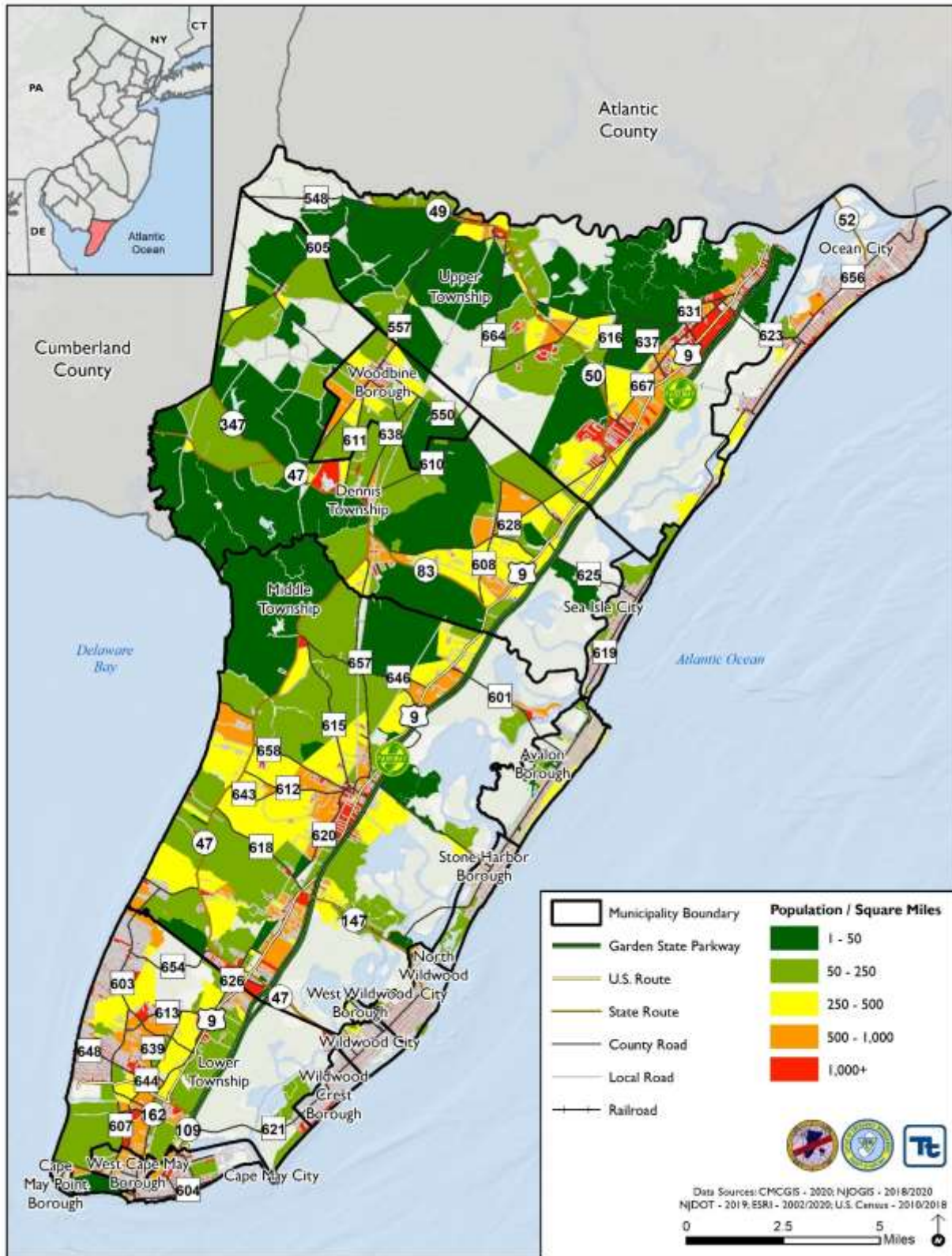
## 4.4 POPULATION AND DEMOGRAPHICS

An understanding of the planning area population characteristics provides a foundation for deciphering the impacts of natural hazards in the county. As noted in Section 5.1 (Methodology) of this plan, modeling of the impacts of natural hazards on the population was performed using FEMA’s Hazards U.S. Multi-Hazard (HAZUS-MH) in which the available population information includes the 2010 U.S. Decennial Census data, which indicates a county population of 97,265. However, more current data, according to U.S. Census Bureau, 2018 American Community Survey 5-Year Estimate, estimates a county population of approximately 93,705, which is a decrease in population since 2010. A detailed population table for the 2010 Census is shown below in Table 4-4. A detailed table for the 2018 American Community Survey is included in Table 4-5. Figure 4-5 shows the distribution of the 2018 5-Year American Community Survey Population Estimates general population density (persons per square mile) by census block. Both sets of population statistics are provided for context. For the purposes of this plan, the default population data available in Hazus-MH v4.2 are used for Hazus estimated results (representing 2010 data) to support the analysis for displaced households and number of persons seeking shelter. Population exposure results are based upon the 2018 5-year American Community Survey Population Estimates.

Various Census Bureau products were used as sources for the population trends section. The Decennial Census is the official population count taken every 10 years. American Community Survey 5-Year Estimates are used to show annual population changes, but it is not an official population count. 5-Year Estimates are used because they are the most accurate form of American Community Survey with the largest sample size which allows for greater accuracy at smaller geographic areas. The American Community Survey 5-Year Estimate products were used to establish annual changes in population. The numbers provided are not official census counts, but are official estimates provided to communities so that they may have a greater understanding in population changes within their jurisdictions.



Figure 4-5. Distribution of General Population in Cape May County, New Jersey





**Table 4-4. Population Statistics From 2010 Census Population Estimates for Cape May County, New Jersey**

Jurisdiction	U.S. Census 2010						
	Total	Pop. 65+	% Pop. 65+	Pop. Under 16	% Pop. Under 16	Low- Income Pop. <sup>1*</sup>	% Low- Income Pop.
Avalon Borough	1,334	540	40.5%	119	8.9%	138	10.3%
Cape May City	3,607	997	27.6%	463	12.8%	312	8.6%
Cape May Point Borough	291	162	55.7%	12	4.1%	52	17.9%
Dennis Township	6,467	968	15.0%	1,386	21.4%	155	2.4%
Lower Township	22,864	4,831	21.1%	4,535	19.8%	1,509	6.6%
Middle Township	18,911	3,595	19.0%	3,961	20.9%	939	5.0%
North Wildwood City	4,041	1,235	30.6%	535	13.2%	393	9.7%
Ocean City	11,701	3,471	29.7%	1,690	14.4%	643	5.5%
Sea Isle City	2,114	683	32.3%	227	10.7%	140	6.6%
Stone Harbor Borough	866	360	41.6%	94	10.9%	14	1.6%
Upper Township	12,373	1,766	14.3%	2,947	23.8%	354	2.9%
West Cape May Borough	1,026	292	28.5%	131	12.8%	57	5.6%
West Wildwood Borough	603	167	27.7%	105	17.4%	59	9.8%
Wildwood City	5,325	720	13.5%	1,093	20.5%	650	12.2%
Wildwood Crest Borough	3,270	864	26.4%	543	16.6%	315	9.6%
Woodbine Borough	2,472	326	13.2%	508	20.6%	213	8.6%
<b>Cape May County (Total)</b>	<b>97,265</b>	<b>20,977</b>	<b>21.6%</b>	<b>18,349</b>	<b>18.9%</b>	<b>5,943</b>	<b>6.1%</b>

Source: Census U.S. Census Bureau 2010

Note: Pop. = population

\* Individuals below poverty level (Census poverty threshold in 2019 for a 3-person family unit is approximately \$20,335)

**Table 4-5. Population Statistics From 2018 5-Year American Community Survey for Cape May County, New Jersey**

Jurisdiction	ACS 2018										
	Total	Pop. 65+	% Pop. 65+	Pop. Under 16	% Pop. Under 16	Low- Income Pop.	% Low- Income Pop.	Disability Pop.	% Disability Pop.	Non-English Speaking Pop.	% Non- English Speaking Pop.
Avalon Borough	1,409	720	51.1%	26	1.8%	79	5.6%	180	12.8%	10	0.7%
Cape May City	3,491	1022	29.3%	194	5.6%	190	5.4%	361	10.3%	114	3.3%
Cape May Point Borough	188	122	64.9%	0	0.0%	33	17.6%	35	18.6%	2	1.1%
Dennis Township	6,244	1240	19.9%	289	4.6%	831	13.3%	835	13.4%	150	2.4%
Lower Township	21,838	5,035	23.1%	971	4.4%	2,471	11.3%	3,273	15.0%	547	2.5%





Jurisdiction	ACS 2018										
	Total	Pop. 65+	% Pop. 65+	Pop. Under 16	% Pop. Under 16	Low-Income Pop.	% Low-Income Pop.	Disability Pop.	% Disability Pop.	Non-English Speaking Pop.	% Non-English Speaking Pop.
Middle Township	18,492	3,932	21.3%	1,136	6.1%	2272	12.3%	2,295	12.4%	516	2.8%
North Wildwood City	3,849	1,518	39.4%	26	0.7%	340	8.8%	664	17.3%	17	0.4%
Ocean City	11,202	3,543	31.6%	548	4.9%	887	7.9%	1,510	13.5%	319	2.8%
Sea Isle City	1,955	890	45.5%	26	1.3%	170	8.7%	340	17.4%	33	1.7%
Stone Harbor Borough	955	406	42.5%	2	0.2%	36	3.8%	111	11.6%	5	0.5%
Upper Township	11,909	2,132	17.9%	545	4.6%	531	4.5%	1,020	8.6%	71	0.6%
West Cape May Borough	1,103	323	29.3%	61	5.5%	161	14.6%	140	12.7%	132	12.0%
West Wildwood Borough	376	150	39.9%	15	4.0%	44	11.7%	75	19.9%	5	1.3%
Wildwood City	5,073	990	19.5%	302	6.0%	1239	24.4%	795	15.7%	259	5.1%
Wildwood Crest Borough	3,131	1133	36.2%	61	1.9%	166	5.3%	432	13.8%	55	1.8%
Woodbine Borough	2,490	416	16.7%	179	7.2%	690	27.7%	894	35.9%	160	6.4%
<b>Cape May County (Total)</b>	<b>93,705</b>	<b>23,572</b>	<b>25.2%</b>	<b>4,381</b>	<b>4.7%</b>	<b>10,140</b>	<b>10.8%</b>	<b>12,960</b>	<b>13.8%</b>	<b>2395</b>	<b>2.6%</b>

Source: American Community Survey 5-Year Population Estimates 2018

Note: Pop. = population

\* Individuals below poverty leve (Census poverty threshold in 2019 for a 3-person family unit is approximately \$20,335)





### 4.4.1 Vulnerable Populations

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DMA 2000 requires that HMPs consider socially vulnerable populations. These populations can be more susceptible to hazard events based on several factors, including their physical and financial ability to react or respond during a hazard and the location and construction quality of their housing. The vulnerable populations in the 2016 Hazard Mitigation Plan include (1) the elderly (persons aged 65 and over) and (2) those living in low-income households. In the current plan, additional vulnerable populations are identified including: the physically or mentally disabled, and non-English speakers. Identifying concentrations of vulnerable populations can assist communities in targeting preparedness, response and mitigation actions.

Populations with a higher level of vulnerability can be more seriously affected during an emergency or disaster. Vulnerable populations have unique needs that need to be considered by public officials to help ensure the safety of demographics with a higher level of risk. Refer to Table 4-5, which summarizes Cape May County’s 2018 5-Year Population Estimates Vulnerable Population Statistics by jurisdiction.

#### Age

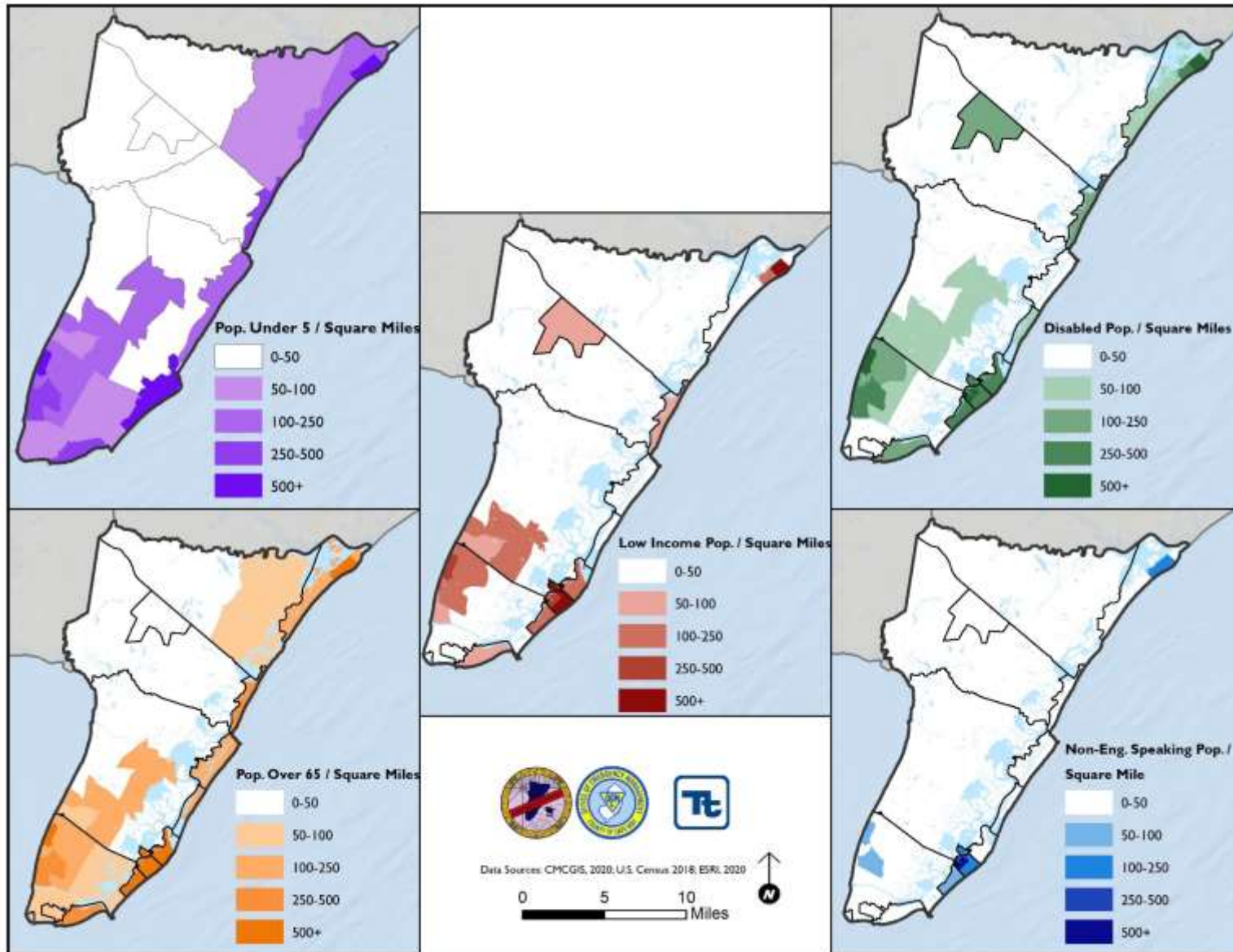
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Children are considered vulnerable to hazard events because they are dependent on others to safely access resources during emergencies and may experience increased health risks from hazard exposure. The elderly is more likely to lack the physical and economic resources necessary for response to hazard events and are more likely to suffer health-related consequences. Those living on their own may have more difficulty evacuating their homes. The elderly also is more likely to live in senior care and living facilities where emergency preparedness occurs at the discretion of facility operators. According to the 2018 American Community Survey 5-Year Estimates, the median age in Cape May County was 49.3 years. The 2018 American Community Survey reports 4.7-percent of the population of Cape May County is under the age 5. Of the 2018 population, one-fourth of the county’s population is age 65 and older.

Figure 4-6 shows the distribution of persons over age 65, persons under age 5, low income population, disabled population, and non-English speaking persons.



Figure 4-6. Distribution and Density of Vulnerable Populations in Cape May County, New Jersey





### Income

The 2018 American Community Survey 5-Year Estimates provides that the median household income in Cape May County was \$63,690, and the per capita income was \$38,496. The U.S. Census Bureau identifies households with two adults and two children with an annual household income below \$25,465 per year as *low income* (U.S. Census 2018). The 2018 American Community Survey 5-Year Estimates indicates that 10.8-percent persons live below the poverty level within the County.

### Physically or Mentally Disabled

According to the Centers for Disease Control, “Persons with a disability include those who have physical, sensory, or cognitive impairment that might limit a major life activity (Centers for Disease Control 2015).” Cognitive impairments can increase the level of difficulty that individuals might face during an emergency and reduce an individual’s capacity to receive, process, and respond to emergency information or warnings. Individuals with a physical or sensory disability can face issues of mobility, sight, hearing, or reliance on specialized medical equipment. According to the 2014-2018 American Community Survey, 13.8-percent of residents in Cape May County are living with a disability. Figure 4-6 shows the geographic distribution of disabled individuals throughout Cape May County, including individuals living with hearing, vision, cognitive, ambulatory, self-care, and independent living difficulties.

### Non-English Speakers

Individuals who are not fluent or working proficiency in English are vulnerable because they can have difficulty with understanding information being conveyed to them. Cultural differences also can add complexity to how information is being conveyed to populations with limited proficiency of English (Centers for Disease Control 2015). According to the 2014-2018 American Community Survey, 9.1 percent of the county’s population over the age of 5 primarily speaks a language other than English at home; within that group approximately 520 individuals are reported as speaking English “less than very well.” Of the county’s population, 18.3 percent speak Spanish, 20.9 percent speak Asian and Pacific Island languages and 6.1 percent speak other Indo-European languages. Figure 4-6 shows the geographic distribution of individuals who speak English less than “very well.”

## 4.4.2 General Building Stock

The 2019 U.S. Census data identifies 99,634 households in Cape May County. The U.S. Census Bureau defines household as all the persons who occupy a housing unit and a housing unit as a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters. The median price of a single-family home in Cape May County was estimated at \$296,600 in 2018 (American Community Survey 5-Year Estimates 2018).

For this update, a customized general building stock was created using building footprints and parcel data from the County, which was supplemented with 2013 MOV-ID tax assessor data and 2019 RS Means replacement cost value for building and content replacement costs. Contents for residential structures are valued at 50-percent of the building’s value. For non-residential facilities, the value of the contents are valued at 100-percent of the building’s structural value.

The updated building inventory contains 111,990 buildings with a total building replacement value (structure and content) of approximately \$57.5 billion. This inventory was incorporated into Hazus at the structure and aggregate level. Approximately 89.5-percent of the buildings (100,196 buildings) and 82.5-percent of the building stock replacement value (approximately \$74.5 billion) are associated with residential housing. Commercial buildings make up the second building classification at approximately 10.3-percent of the total



building replacement value. Lower Township has the greatest number of structures at with 19,597 and the Cape May Point Borough has the smallest number of structures with 785.

Appendix E presents Building Stock Statistics by Occupancy Class for Cape May County based on HAZUS-MH provided data.

Figure 4-7 through Figure 4-9 show the distribution and exposure density of residential, commercial, and industrial buildings in Cape May County. Exposure density is the dollar value of structures per unit area, including building content value. Generally, contents for residential structures are valued at about 50 percent of the building's value. For commercial facilities, the value of the contents is generally about equal to the building's structural value. The densities are shown in units of \$1,000 (\$K) per square mile. Viewing exposure distribution maps, such as Figure 4-7 through Figure 4-9 can assist communities in visualizing areas of high exposure and in evaluating aspects of the study area in relation to the specific hazard risks.



Figure 4-7. Distribution of Residential Building Stock and Value Density in Cape May County, New Jersey

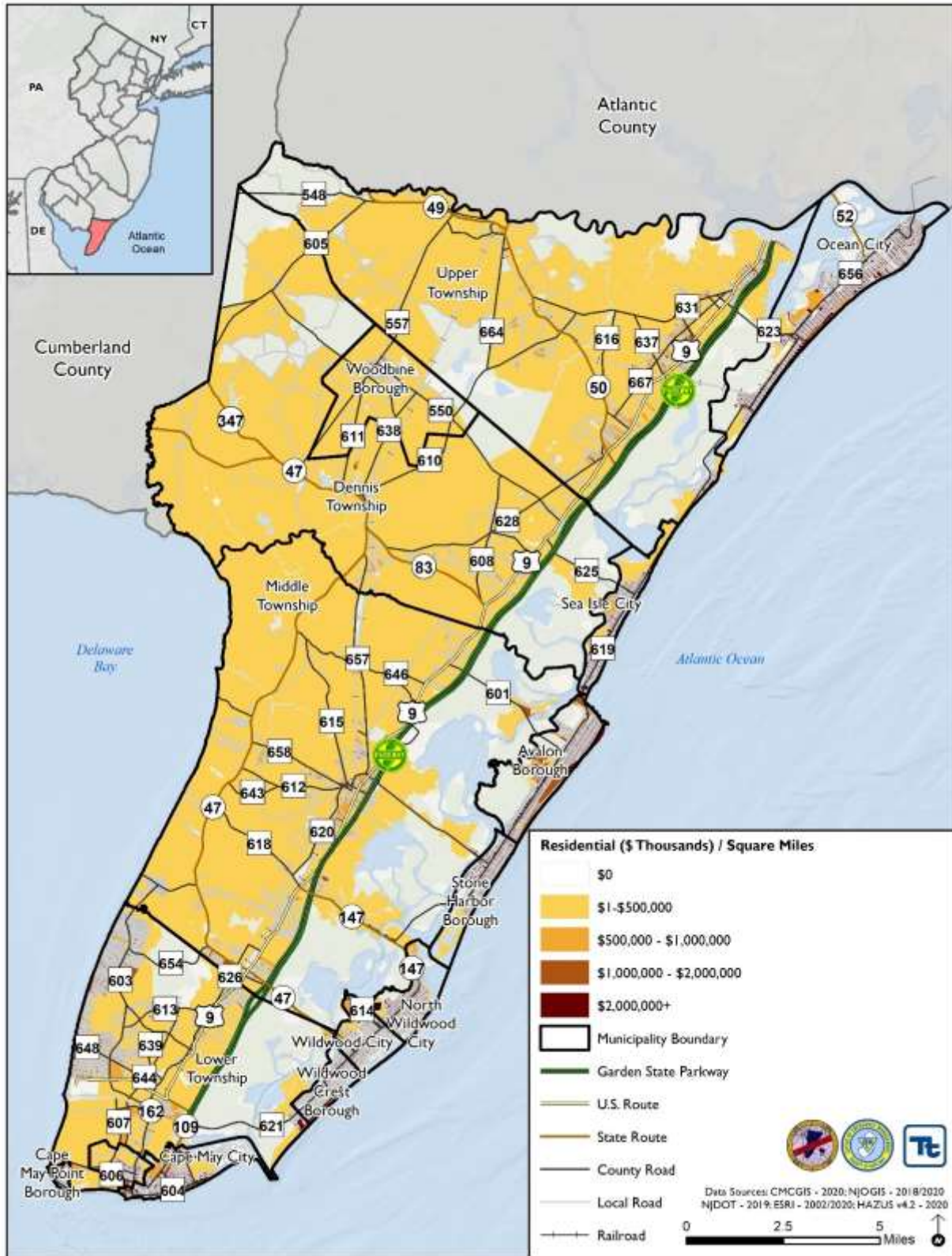




Figure 4-8. Distribution of Commercial Building Stock and Exposure Density in Cape May County, New Jersey

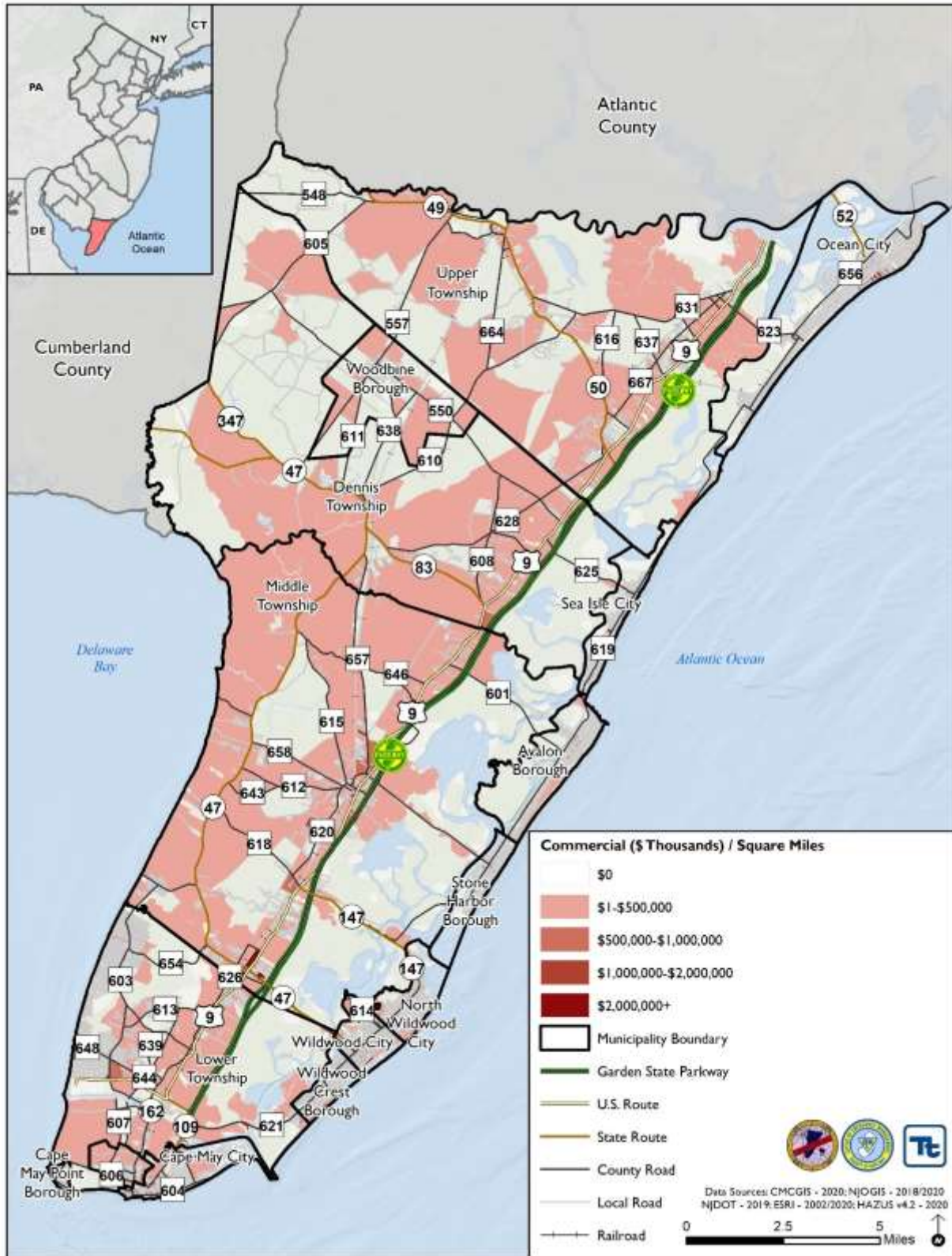




Figure 4-9. Distribution of Industrial Building Stock and Value Density in Cape May County, New Jersey





## 4.5 LAND USE AND POPULATION TRENDS

Local zoning and planning authority is provided for under the New Jersey Municipal Land Use Law, which gives municipalities zoning and planning authority. DMA 2000 requires that communities consider land use trends, which can impact the need for, and priority of, mitigation options over time. Land use trends significantly impact exposure and vulnerability to various hazards. For example, significant development in a hazard area increases the building stock and population exposed to that hazard.

This plan provides a general overview of population and land use and types of development occurring within the study area. An understanding of these development trends can assist in planning for future development and ensuring that appropriate mitigation, planning, and preparedness measures are in place to protect human health and community infrastructure.

### 4.5.1 Land Use Trends

Cape May County has a land development pattern that is broadly defined by dense second-home communities and neighborhood commercial/retail on the barrier islands and lower-density residential and commercial services located on the mainland. The barrier islands are more seasonal in nature, with economic activity significantly slowing in the fall through the spring. The island communities have caretaker year-round communities, the largest of which are Ocean City, Wildwood, and Cape May.

#### Economy

The U.S. Census Bureau’s County Business Pattern provides an annual series of sub-national economic data by industry covering the majority of the country’s economic activity. According to the 2017 Cape May County Business Pattern, the county had a total of 3,850 business establishments. These businesses provided more than \$1.1 billion in payroll and employed 26,890 people. Three industries dominate private employment in the County: health care and social assistance; accommodation and food services; and the retail trade. Together, these sectors account for 61.5% of the County’s private workforce, 55.7% of payroll, and 47.3% of business establishments. The retail trade employs more than a quarter of the County’s workforce alone. In addition to the 26,890 employees of private establishments, the County has a robust public sector that employed 11,034 people that provided more than \$580 million in payroll as of 2017 (NJ Department of Labor, 2017). Table 4-6 provides 2017 industry and employment information in Cape May County exclusive of public administration.

**Table 4-6. 2017 Economic Census for Cape May County, New Jersey**

Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees
Total for all sectors	3,850	\$1,106,046	26,890
Agriculture, forestry, fishing and hunting	14	\$7,140	121
Mining, quarrying, and oil and gas extraction	4	\$2,180	59
Utilities	3	\$16,454	137
Construction	462	\$95,042	2,023
Wholesale trade	63	\$27,565	550
Information	45	\$13,028	305
Finance and insurance	135	\$63,383	977
Real estate and rental and leasing	201	\$34,872	721
Professional, scientific, and technical services	205	\$62,069	971
Management of companies and enterprises	4	\$1,456	24





Industry	Number of Establishments	Annual Payroll (\$1,000)	Number of Employees
Administrative and support and waste management and remediation services	214	\$35,780	946
Educational services	23	\$1,329	97
Health care and social assistance	243	\$203,507	4,442
Arts, entertainment, and recreation	147	\$45,886	982
Accommodation and food services	928	\$225,713	5,116
Other services (except public administration)	384	\$46,652	1,660
Industries not classified	3	\$107	1
Manufacturing	77	\$26,491	573
Retail trade	649	\$186,618	6,975
Transportation and warehousing	46	\$10,774	210

Source: U.S. Census, County Business Pattern 2017

### Agriculture

Agriculture is a relatively small but important aspect of the Cape May County economy. As of 2017, the market value of products sold from the County was \$9.8 million- a 23% increase from 2012. Between 2012 and 2017, the number of farms, acreage of farms, and average farm size each increased. The number of farms increased by eight percent. The products sold from Cape May County are crops, which comprise 89% of all sales. The vast majority of crop sales (and all sales) are nursery, greenhouse, floriculture, or sod whereas the majority of livestock, poultry, and product sales are aquaculture. Farmland in Cape May County accounts for 8,135 acres, or approximately five percent of the County’s total acreage.

### Flooding and Land Use Patterns

Flooding is a major concern and threat for the County, owing to its unique geographic vulnerability and the total amount of property at risk of inundation. Cape May County owes its development and status as a world-class vacation destination to its coastal resources, and centuries of waterfront development have made its mark on the County. However, waterfront and floodplain development have resulted in considerable exposure. The NJ Hazard Mitigation Plan estimates that 39,283 people (40.4% of the County population) and \$15.2 billion of the county’s building stock (61.7%) is in the Special Flood Hazard Area. Flooding from Superstorm Sandy resulted in an estimated 10,000 NFIP claims, and as of 2015 the County was home 2,303 repetitive loss properties (SRPR 2015). As of 2015, there was an estimated 75 of 229 critical facilities in the County within the Special Flood Hazard Area. This exposure and the increasing likelihood of permanent inundation and future storms underscores the importance of planning for flood mitigation in the County.

The effective FEMA Flood Insurance Study for the County notes that major floods can occur-year round during high tide events, late-summer and fall tropical storms, and winter and spring nor’easters. The County has also seen an increasing amount of “nuisance flooding” occurring during otherwise typical rain events or on sunny days. Since 1944, the Flood Insurance Study noted that Cape May County has seen nine major flooding events (FEMA FIS). According to the tide gage station in Ocean City, the major flooding threshold in Ocean City has been exceeded on eight occasions since 1944. Superstorm Sandy in 2012 served as the storm of record (with water elevations of 7.25 feet NAVD88), followed by the September 1944 hurricane (with water elevations of 6.75 feet NAVD88).

Flooding is examined in this Hazard Mitigation Plan update as a major threat to the County and as a hazard that can be mitigated or alleviated through mitigation strategies.



**Zoning**

Historical land use patterns show how the community has developed over time. Zoning and related ordinances are used to guide development within the county and largely reflect the existing and desired development patterns. Traditional zoning divides a community into various districts and permits or disallows land uses by zoning district. In Cape May County, all of the municipalities have zoning ordinances. As of 2020, there are nearly 300 separate zoning districts across the County.

Much of the County’s land area (approximately 48%) is set aside for residential uses. The resort communities tend to have denser housing stock and zoning than mainland communities owing to the widespread availability of sewer service and historic development patterns. Conservation-related zoning comprises approximately 43% of the land area, including many of the County’s open spaces and State Wildlife Management Areas. Commercial districts account for approximately 7.4% of land area. Table 4-7 and Figure 4-10 display the local zoning information for Cape May County.

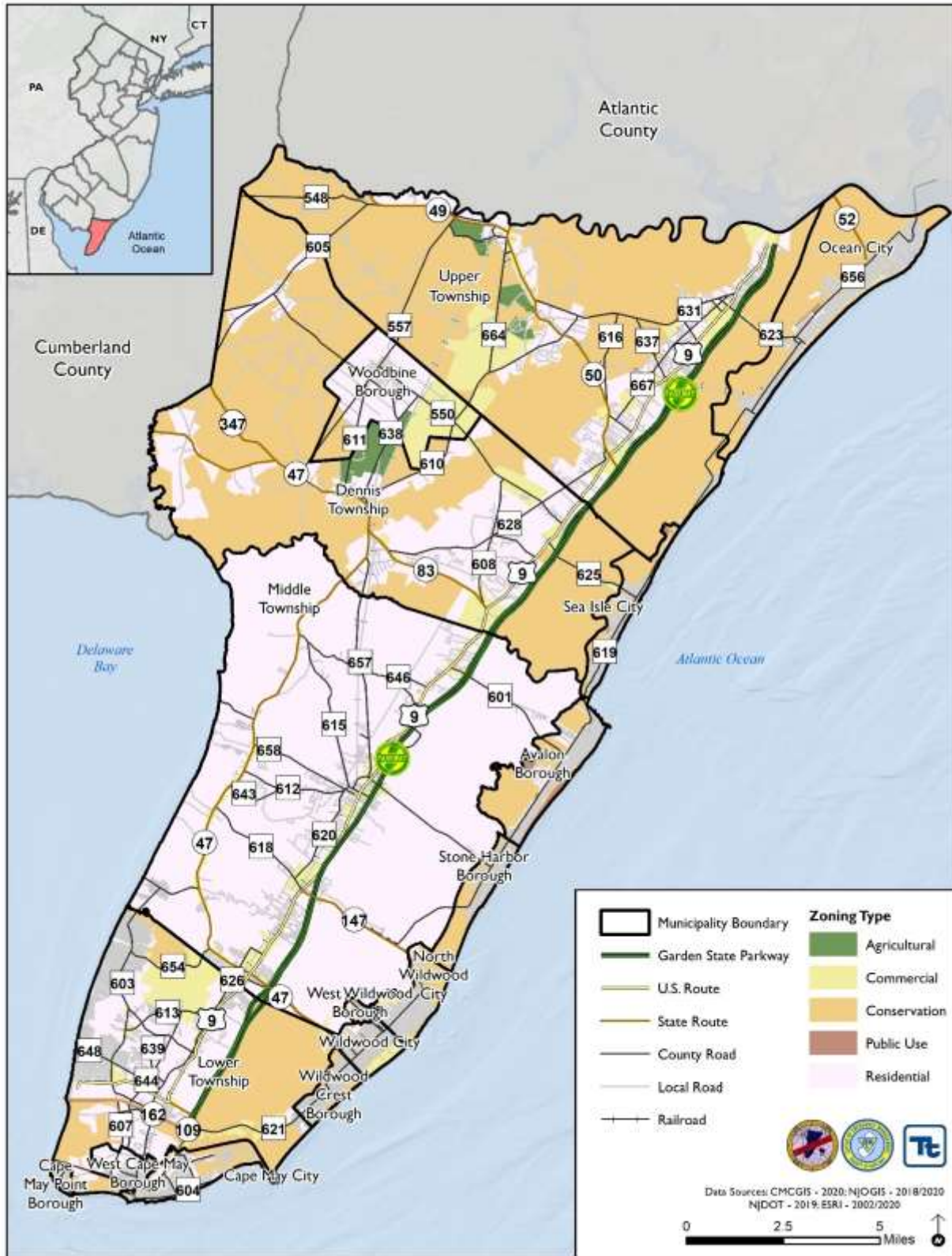
**Table 4-7. Local Zoning in Cape May County, New Jersey**

Zoning Category	Acres	Percent
Agricultural	1,724	0.9%
Commercial	13,486	7.4%
Conservation	78,732	43.0%
Public Use	1,660	0.9%
Residential	87,524	47.8%
<b>TOTAL</b>	<b>183,125</b>	<b>100.0%</b>

Source: Cape May County GIS 2020



Figure 4-10. Countywide Zoning in Cape May County, New Jersey





### 4.5.2 Population Trends

Cape May County has experienced a small but steady population decline since 2000 as illustrated in Figure 4-11 below, which shows the annual population estimate from the 2010 to the 2018 American Community Survey 5-Year Estimates. Two Census Bureau products were used in the population trends section. The 2010 Census is the official population count of a municipality which is performed every ten years. The American Community Survey is performed on a more frequent basis to provide updated population and demographics information to communities.

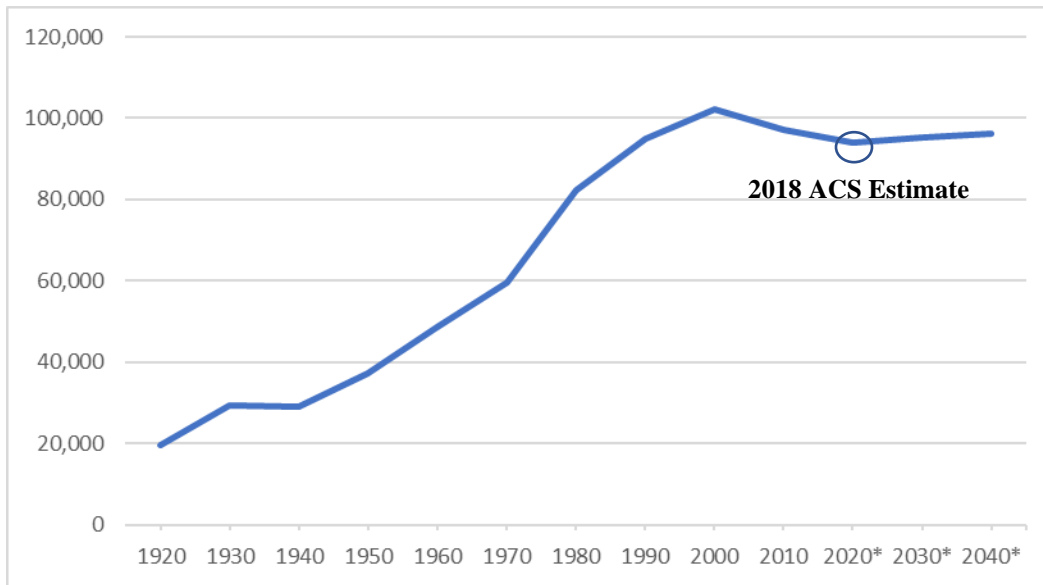
Cape May County's population decline is reflected by declines in eleven of the County's sixteen municipalities. Between 2000 and 2010, the County lost nearly five percent of its population. Between 2010 and 2020, the County is expected to have experienced a similar decrease, owing to an aging population and a lack of young families moving to the region. This demographic trend means that further consideration may have to be given to an older demographic during planning processes to ensure capability to accommodate a higher percentage of socially vulnerable demographic groups.

Cape May County's status as a vacation destination, the growth of the tourism industry, and lack of year-round job opportunities have contributed to the population decline (Press of Atlantic City, 2015). The decline has predominantly impacted island communities, whose populations have shrank as housing costs increased considerably in the 2000s. These demographic shifts have altered the character of communities, which is reflected in more recent suburban-style development in mainland communities to accommodate the region's workforce and the redevelopment of older, less expensive housing stock in the island communities into larger, more expensive homes with seasonal occupancy.

The U.S. Census Bureau estimates that Cape May County's population in 2018 was 93,705 (American FactFinder), a 3.7 percent decrease from the 2010 population of 97,265 (U.S. Census). The County's population grew beginning in 1940 and saw the highest rate of growth between 1970 and 1980. Figure 11 shows the county population and its projected changes from 1950 to 2040 while Figure 12 indicates the annual estimated population change from 2010 to 2019. Figure E-1 in Appendix E (Supplementary Data) illustrates the municipal population change over this period.

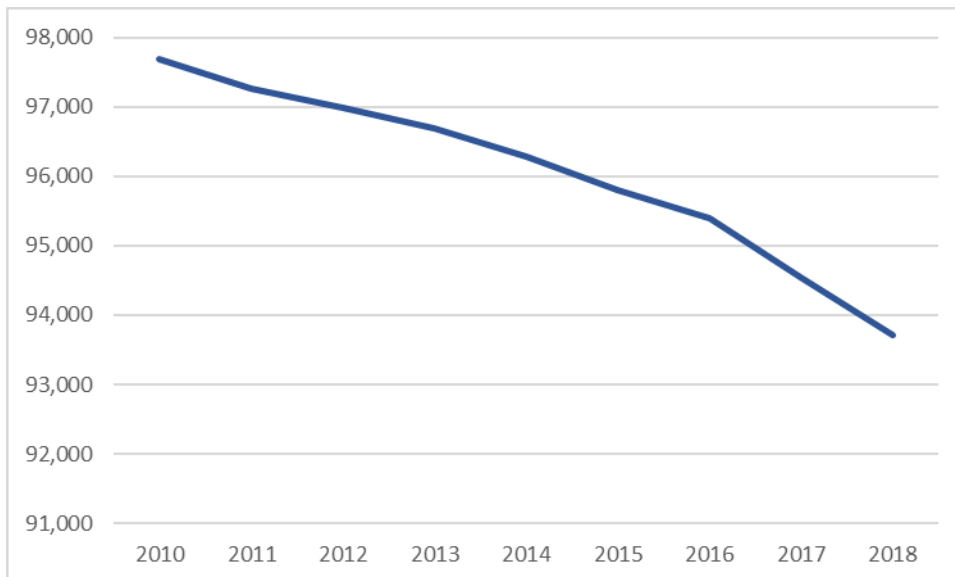


Figure 4-11. Population Change 1920 to 2040 in Cape May County, New Jersey



\* Population Projection from NJ Department of Labor  
Source: U.S. Census Bureau 2020, SJTPO

Figure 4-12. Annual Population Change, 2010 to 2018 American Community Survey Estimates in Cape May County, New Jersey



Source: U. S. Census Bureau American Community Survey; 5 Year Estimates 2010-2018

### 4.5.3 Future Growth and Development

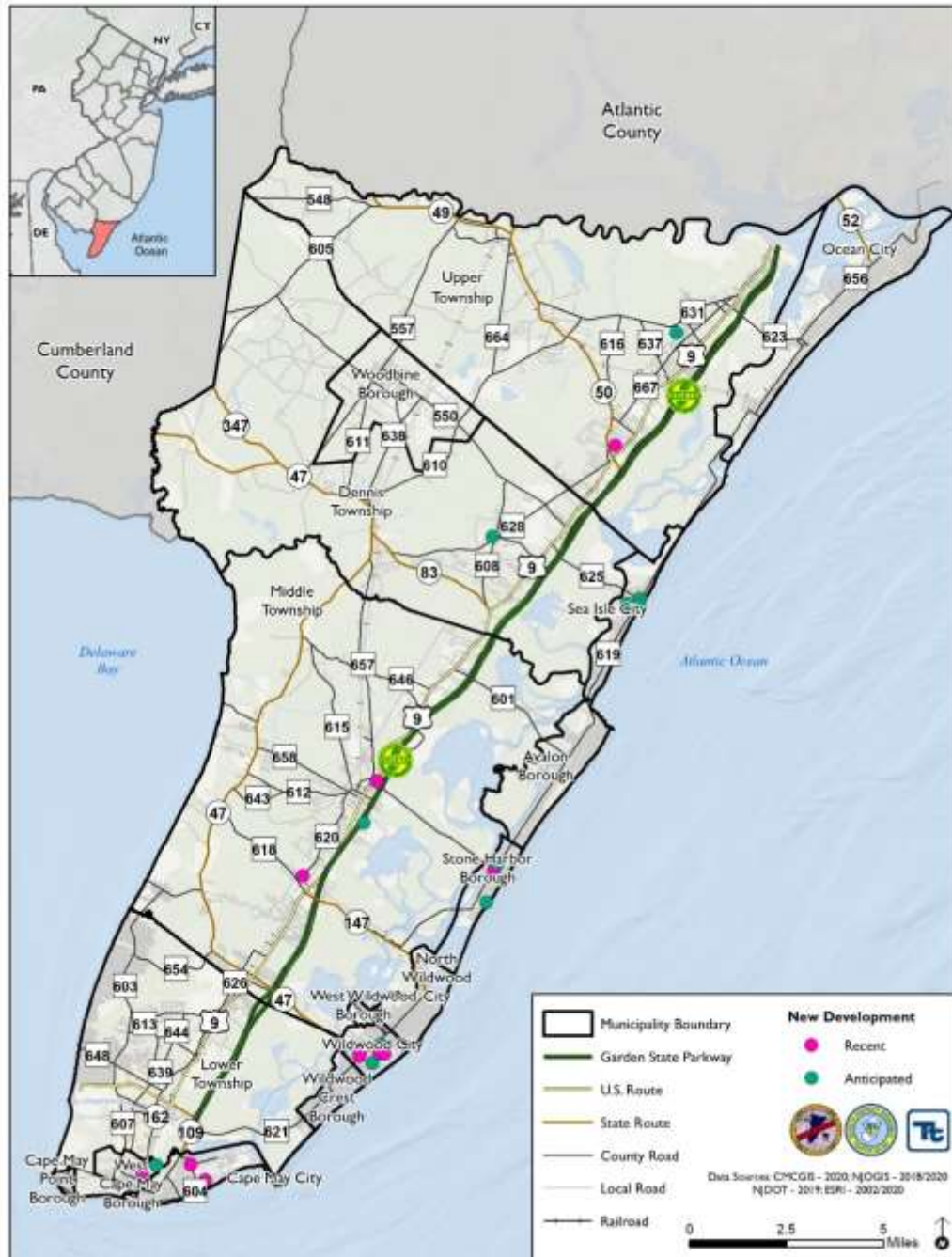
Cape May County has faced significant pressure for development due to the high desirability of its coastal environments, a paucity of buildable lands, the provision of amenities for seasonal visitors, and the dual nature of the County as a home and resort area. The County is quickly approaching build-out, with relatively few large tracts of vacant land left. Much of the County’s recent development has been in the form of demolition and reconstruction of homes on the County’s barrier islands. The County’s population has been declining for approximately two decades, due predominantly to the ascendancy of the second-home real estate market.



However, in the wake of the COVID-19 pandemic, it is possible that a number of seasonally-used homes have transitioned to year-round residences.

A summary of development planned within Cape May County is provided in the Figure 4-14 below. Municipalities that did not identify any significant residential/commercial, or infrastructure development within the next five years are not included in the table. Details regarding development specific to each participating municipality is provided in Appendix E. Locations of development are indicated on the Hazard Area Extent and Location Maps included in Section 9 (Jurisdictional Annexes).

Figure 4-13. Planned Development in Cape May County, New Jersey





## 4.6 LIFELINES AND CRITICAL FACILITIES

Critical infrastructure and facilities are those that are essential to the health and welfare of the population. These facilities are especially important after any hazard event. Critical facilities are those that maintain essential and emergency functions and are typically defined to include police and fire stations, schools, and emergency operations centers. Critical infrastructure can include the roads and bridges that provide ingress and egress and allow emergency vehicles access to those in need and the utilities that provide water, electricity, and communication services to the community. Also included are Tier II facilities (hazardous materials) and rail yards; rail lines hold or carry significant amounts of hazardous materials with a potential to impact public health and welfare in a hazard event.

*Critical Facilities* are those facilities considered critical to the health and welfare of the population and that are especially important following a hazard. As defined for this HMP, critical facilities include transportation systems, lifeline utility systems, high-potential loss facilities, and hazardous material facilities, and essential facilities

*Essential facilities* are a subset of critical facilities that include those facilities that are important to ensure a full recovery following the occurrence of a hazard event. For the county risk assessment, this category was defined to include police, fire, EMS, schools/colleges, shelters, senior facilities, and medical facilities.

*Lifelines* enable the continuous operation of critical business and government functions and are essential to human health and safety or economic security.

Beginning in 2017, FEMA developed a new construct to increase effectiveness for disaster operations and position response to catastrophic incidents. This construct, known as “community lifelines”, represents the most fundamental services in the community that, when stabilized, enable all other aspects of society. Following a disaster event, intervention is required to stabilize community lifelines. Lifelines are divided into seven categories which include:

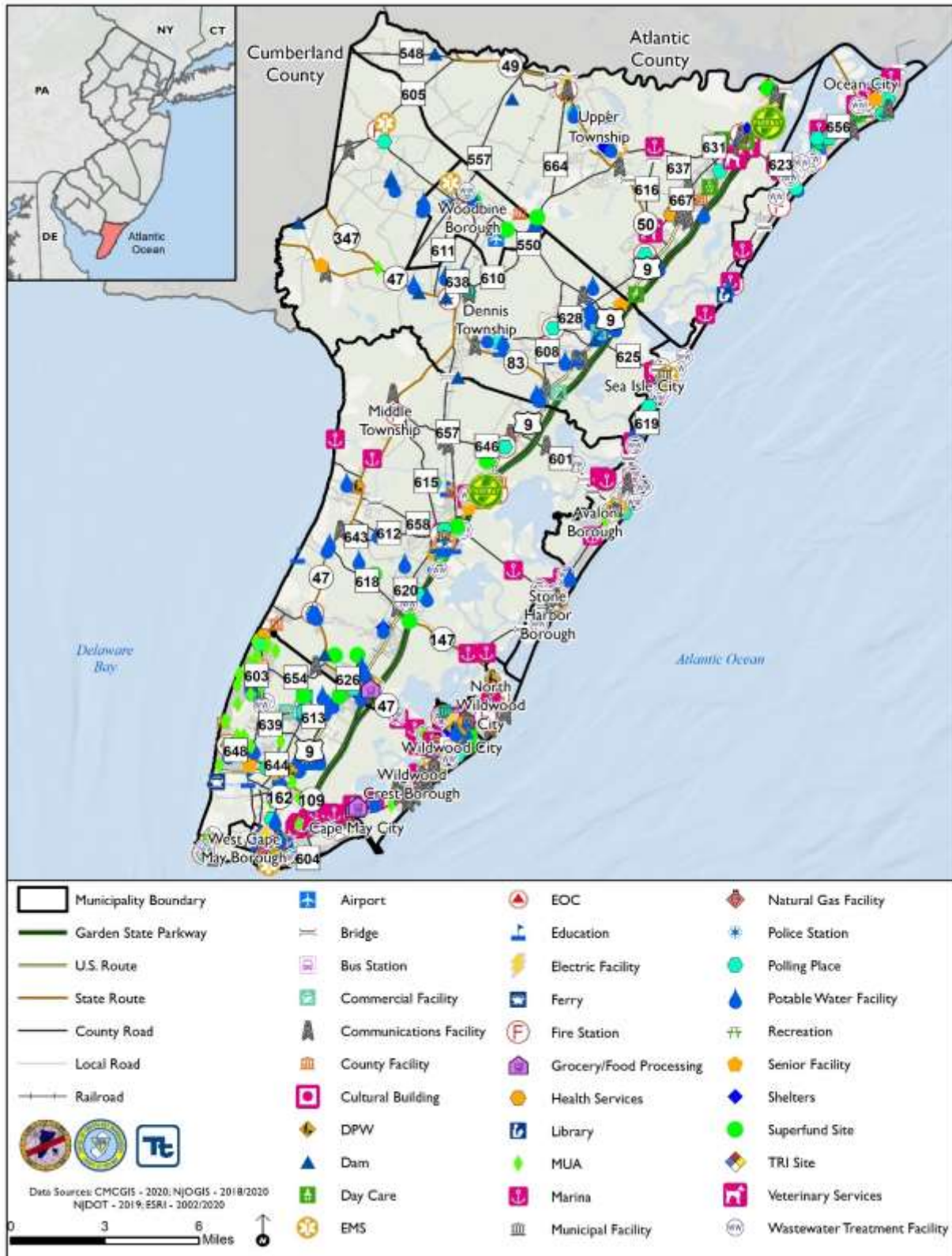
- Safety and Security
- Food, Water, Shelter
- Health and Medical
- Energy (Power and Fuel)
- Communications
- Transportation
- Hazardous Materials

To facilitate consistency with the National Response Framework, FEMA Strategic Plan, and guidance for the Building Resilient Infrastructure and Communities grant program, critical facilities in Cape May County are discussed in terms of lifelines.

A comprehensive inventory of critical facilities and lifelines in Cape May County was developed from various sources including input from the Planning Committees. The inventory of critical facilities presented in this section represents the current state of this effort at the time of publication of the HMP and was used for the risk assessment in Section 5 (Risk Assessment). Figure 4-14 shows the location of Cape May County lifelines and critical facilities.



Figure 4-14. Planning Area Critical Facilities in Cape May County, New Jersey







### **4.6.1 Safety and Security**

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This section provides information on Safety and Security lifelines. Components of this lifeline category include law enforcement/security, fire services, search and rescue services, government services, and community safety (e.g. dams).

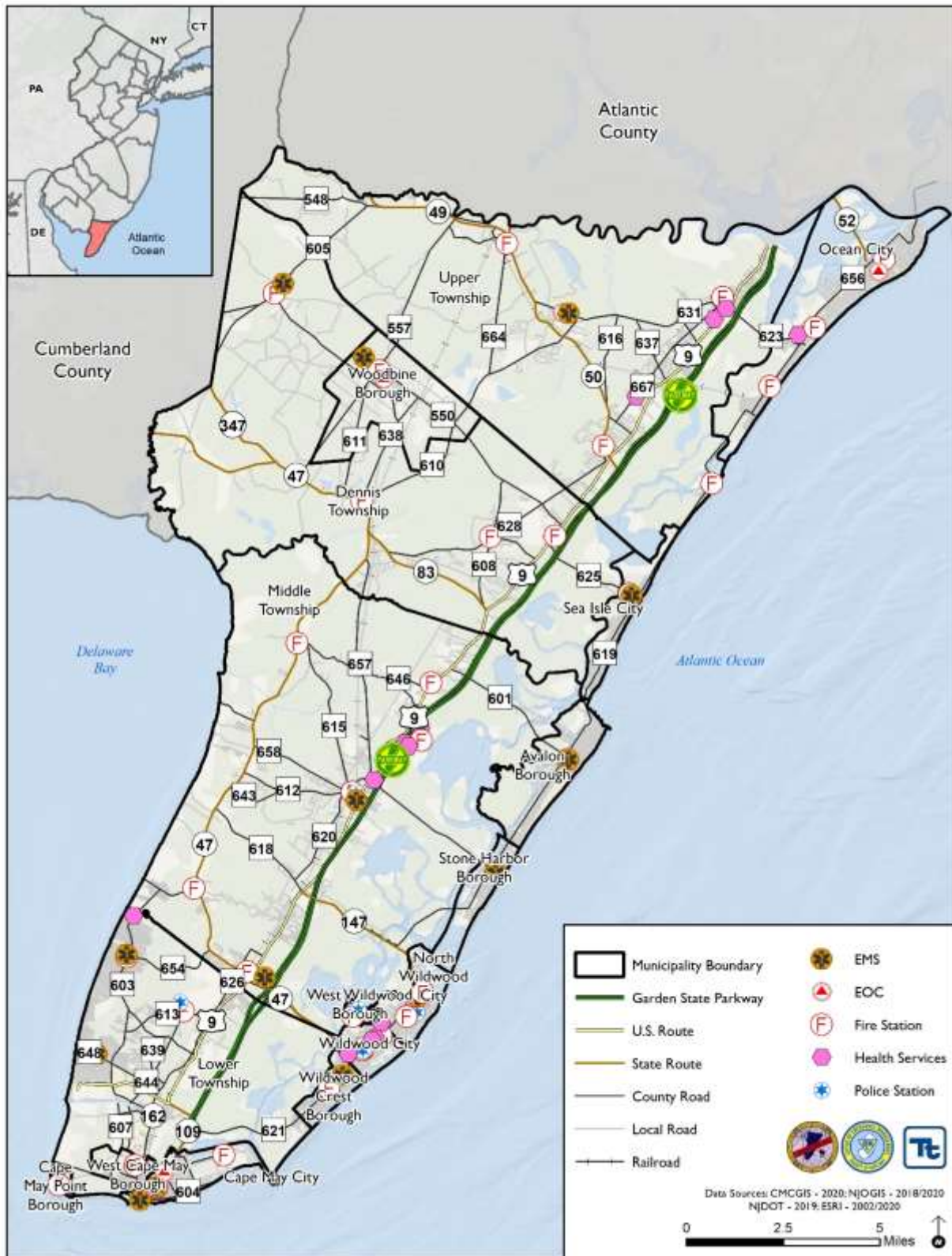
#### **Emergency Facilities**

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For the purposes of this HMP, emergency facilities include police, fire, EMS and emergency operations centers. Emergency facilities. There are 69 emergency facilities located throughout Cape May County. The location of these facilities are shown in Figure 4-15.



Figure 4-15. Emergency Services in Cape May County, New Jersey





**Schools**

There are 42 schools, ranging from elementary to post-secondary education which service the County. During an emergency event, some of these facilities function as shelters. Educational facilities are shown in Figure 4-16.

Overall, there are 16 public school districts within Cape May County that serve 12,385 students as of the 2018-2019 school year. Most districts have seen enrollment declines. The table below shows the school districts and their enrollment.

**Table 4-8. School Districts in Cape May County**

District	Enrollment (2010-2011)	Enrollment (2018-2019)	Change (#)	Change (%)
Avalon Borough	75	61	-14	-18.7%
Cape May City	154	151	-3	-1.9%
Cape May County Special Services	277	216	-61	-22.0%
Cape May County Vocational	631	601	-30	-4.8%
Dennis Township	620	565	-55	-8.9%
Lower Cape May Regional	1,620	1,300	-320	-19.8%
Lower Township	1,826	1,647	-179	-9.8%
Middle Township	2,753	2,498	-255	-9.3%
North Wildwood	326	221	-105	-32.2%
Ocean City	2,046	2,102	56	2.7%
Sea Isle City	49	--	--	--
Stone Harbor	74	99	25	33.8%
Upper Township	1,432	1,442	10	0.7%
West Cape May	39	98	59	151.3%
Wildwood	860	892	32	3.7%
Wildwood Crest	283	261	-22	-7.8%
Woodbine	207	232	25	12.1%
<b>Total</b>	<b>13,272</b>	<b>12,385</b>	<b>-887</b>	<b>-6.7%</b>

Source: New Jersey Department of Education



Figure 4-16. Schools in Cape May County, New Jersey





### Shelters

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According to the 2015 Strategic Recovery Planning Report, there are 63 shelters located in the County. There are four county-maintained shelters located in Cape May County. One is fully supported by the American Red Cross, two are partially supported by the American Red Cross and one is not supported by the American Red Cross.

It is important to identify and account for senior facilities, as their residents are highly vulnerable to the potential impacts of disasters. Understanding the location and numbers of these types of facilities can help manage an effective response post disaster. There are 18 senior facilities located within the County.

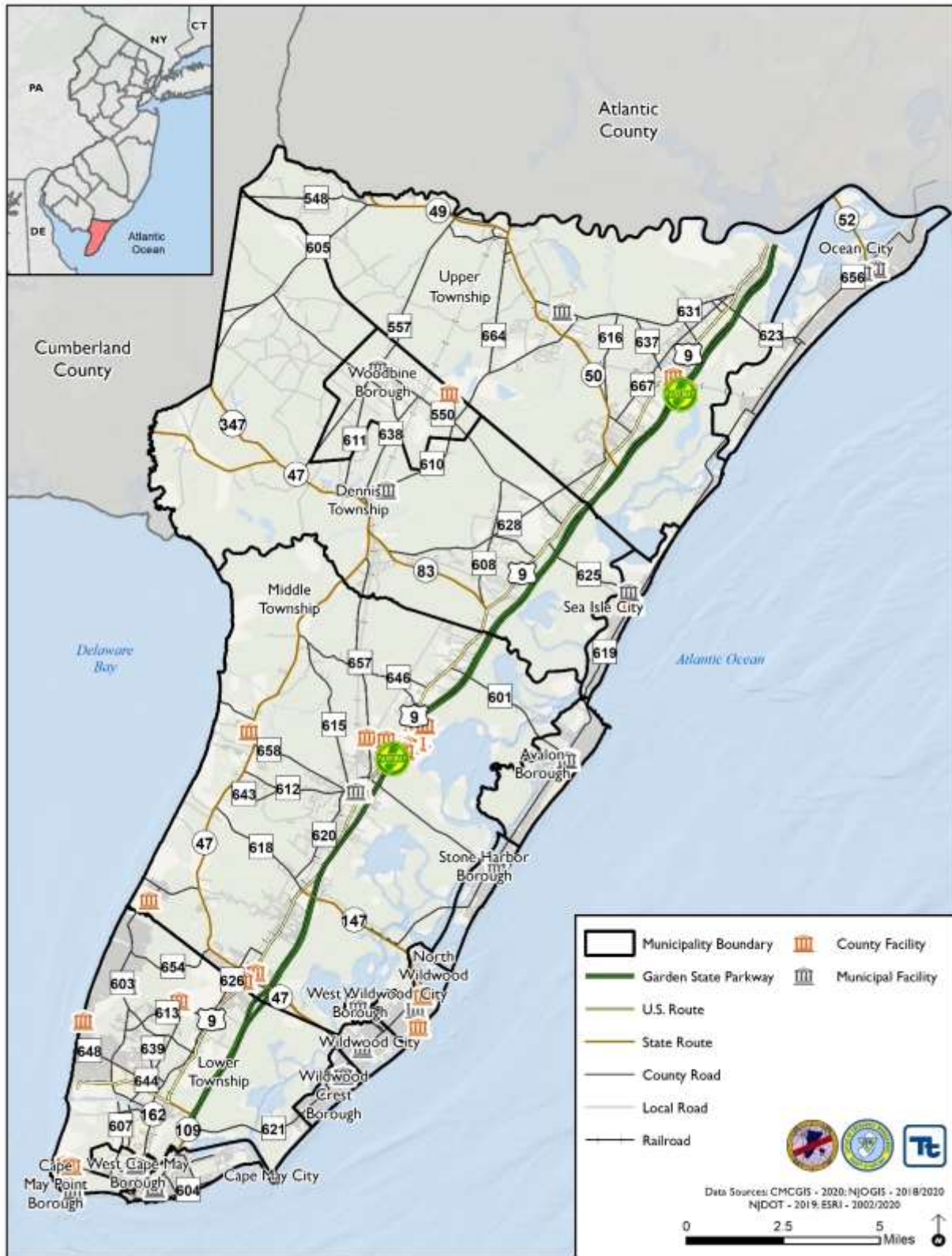
### Government Buildings

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Government buildings – specifically those operated by County and municipal governments – are invaluable lifelines during hazard events. These include both municipal office buildings as well as facilities owned and operated by the County government and municipal governments that support various functions, including public works, administration, public safety, and recreation. There are 51 government buildings in the County. Figure 4-17 shows the location of government buildings in Cape May County.



Figure 4-17. Government Buildings in Cape May County, New Jersey





### Military Bases

Cape May County is a designated Coast Guard Community, a federal designation that recognizes the County's relationship with the United States Coast Guard. Cape May is home to Training Center Cape May, which is the only Coast Guard recruit training center in the country. Approximately 2,400 recruits are graduated annually, and 80% of the Coast Guard's workforce begins their enlisted careers in Cape May. The center is located on the eastern end of Sewell Point in Cape May between the ocean and the Cape May Harbor. The Center provides approximately 1,200 year-round jobs. Additionally, the Coast Guard operates a uniform distribution center in Woodbine and a station house in Ocean City. The Coast Guard also maintains a seasonal recreation facility at Townsend's Inlet in Sea Isle City and continues to own the former LORAN facility at Diamond Beach in Lower Township (Cape May County, 2015). Each facility is in the Special Flood Hazard Area and is vulnerable to flooding.

### Dams and Levees

#### Dams

For the purpose of this hazard mitigation plan, dams are not considered critical facilities, as the Steering and Planning Committees recognize that these facilities are covered by other regulatory instruments. However, a summary of the dams in the county is presented in this section to provide an awareness of the number and types of these structures within the county.

According to the NJDEP, there are four hazard classifications of dams in New Jersey. The classifications relate to the potential for property damage and/or loss of life should the dam fail:

- Class I (High-Hazard Potential) - Failure of the dam may result in probable loss of life and/or extensive property damage
- Class II (Significant-Hazard Potential) - Failure of the dam may result in significant property damage; however, loss of life is not envisioned
- Class III (Low-Hazard Potential) - Failure of the dam is not expected to result in loss of life and/or significant property damage
- Class IV (Small-Dam Low-Hazard Potential) - Failure of the dam is not expected to result in loss of life or significant property damage

According to the U.S. Army Corps of Engineers National Inventory of dams, there are seven dams located in Cape May County, six of which are classified with a significant-hazard potential and one of which is classified as a low-hazard potential (USACE 2016; National Performance of Dams 2016).



Figure 4-18. Dams in Cape May County, New Jersey







Levees

Cape May County is home to eight levee systems that provide some degree of protection to vulnerable coastal areas. Basic information on the systems in the County was gathered to integrate components of the levee accreditation process with this HMP and identify ways the hazard mitigation process can help to establish a path forward for the levee accreditation process.

Information from the National Levee Database (NLD) and FEMA Flood Mapping Products website was compiled and presented in the following tables that present summaries of the levee system features and associated risks. Further information regarding the criteria for meeting levee certification, including discussion of a phased approach and initial cost estimates of the work, is provided in Section 6 (Mitigation Strategy), Section 9 (Jurisdictional Annexes), and Appendix H (Levee Data Summary and Checklist). Table 4-12 through Table 4-14 present data about levee systems collected from the NLD and FEMA.

**Table 4-9. Levee System Feature Information from the NLD in Cape May County, New Jersey**

System	Year Complete	Levee (miles)	Floodwall (miles)	Pump Stations (#)	Gravity Drains (#)	Closures (#)
Cox Hall Creek	Unknown	0.04	0	0	0	0
Del Haven-Green Creek		0.25	0	0	0	0
Dennis-Sluice Creek		0.47	0	0	0	0
Fishing Creek		0.19	0	0	0	0
Hands		3.71	0	0	0	0
Shaw Meadow		0.11	0	0	0	0
Stipson Island/Campbell		1.15	0	0	0	0
Sunray Beach		0.24	0	0	0	0

Source: U.S. Army Corps of Engineers, 2020

**Table 4-10. Levee System Risk Information from the NLD in Cape May County, New Jersey**

System	LSAC*	Overtopping ACE**	People at Risk	Structures at Risk	Property Value
Cox Hall Creek	N	N	1	1	\$195,000
Del Haven-Green Creek	N	N	0	0	\$0
Dennis-Sluice Creek	N	N	0	0	\$0
Fishing Creek	N	N	2	4	\$1,670,000
Hands	N	N	0	0	\$0
Shaw Meadow	N	N	32	22	\$7,040,000
Stipson Island/Campbell	N	N	0	0	\$0
Sunray Beach	N	N	22	12	\$4,170,000

Source: U.S. Army Corps of Engineers, 2020

\* LSAC - Levee Safety Action Classification Rating by the U.S. Army Corps of Engineers

\*\*ACE - Annual Chance Exceedance

N - No Data Entered or LSAC In Progress

**Table 4-11. Levee System FEMA Accreditation in Cape May County, New Jersey**

Levee System Name	Effective FIS ID	Total Length (miles)	Leveed Area (sq. miles)	Levee System Summary in NLD	Levee System Accreditation Status*
Cox Hall Creek	3401530003B	0.04	0	NO	Non- Accredited
Del Haven-Green Creek	34009C0216F	0.25	0.018	NO	Non-Accredited
Dennis-Sluice Creek	34009C0137F 34009C0139F 34009C0143F	0.47	0	NO	Non- Accredited

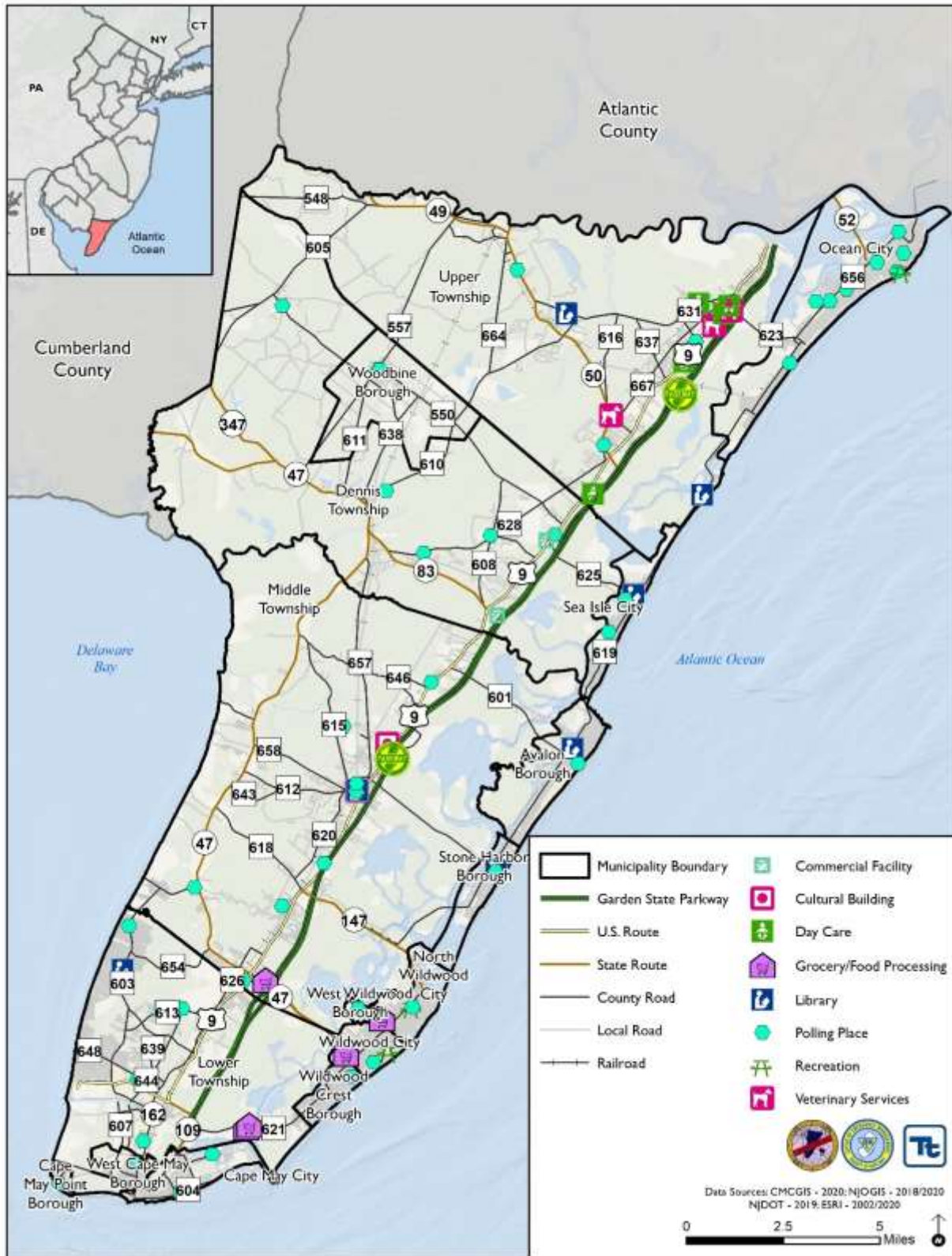




Levee System Name	Effective FIS ID	Total Length (miles)	Leveed Area (sq. miles)	Levee System Summary in NLD	Levee System Accreditation Status*
	34009C0141F				
Fishing Creek	34009C0216F 3401530001B	0.19	0	NO	Non-Accredited
Hands	34009C0136F 34009C0137F	3.71	0	NO	Non-Accredited
Shaw Meadow	3401530001B	0.11	0.024	NO	Non-Accredited
Stipson Island/Campbell	34011C0458E 34011C0466E 34009C0108F 34009C0109F 34009C0116F 34009C0117F	1.15	0.11	NO	Non-Accredited
Sunray Beach	34009C0216F	0.24	0.06	NO	Non-Accredited



Figure 4-19. Other Critical Facilities in Cape May County, New Jersey





### 4.6.2 Food, Water, Shelter Lifelines

Food, Water, and Shelter lifelines include facilities pertaining to food supply (distribution facilities, programs, and supply chain), water supply (including both potable and wastewater systems), shelter (housing and hotels), and agricultural facilities.

#### Potable Water

Cape May County’s water supply is derived from the Kirkwood and Cohansey aquifers for the island communities and the Cape May Formation table aquifer for the mainland communities. Cape May County does not have surface water supplies. Water suppliers in Cape May County are listed in Table 4-15. Additionally, there are 89 potable water facilities located in Cape May County, as shown in Figure 4-20.

**Table 4-12. Water Suppliers in Cape May County**

Water System	Municipality Served
Avalon Water and Sewage Utilities	Avalon (B)
Cape May Water & Sewer Utility	Cape May (C), Cape May Point (B), Lower (Twp), West Cape May (B)
Cape May Point Borough Water Department	Cape May Point (B)
Ocean View Association Operation LLC	Dennis (Twp)
Cape May Mobile Estates	Lower (Twp)
Lower Township MUA	Lower (Twp)
Wildwood City Water Department	Middle (Twp), North Wildwood (C), West Wildwood (B), Wildwood (C), Wildwood Crest (B)
Middle Township Water District #2	Middle (Twp)
NJ American Water – Cape May Court House	Middle (Twp)
Grande Woods South Mobile Home	Middle (Twp)
Delsea Woods Community LLC	Middle (Twp)
A and J Mobile Home Park	Middle (Twp)
Cedar Springs Mobile Home Park Well	Middle (Twp)
Edgewood Village Mobile Home Park	Middle (Twp)
Presidential Courts Mobile Home Park	Middle (Twp)
Grande Woods North Mobile Home Park	Middle (Twp)
Middle Township Water District 1	Middle (Twp)
NJ American Water – Ocean City	Ocean City
Sea Isle City Water Department	Sea Isle City
Stone Harbor Water Department	Stone Harbor (B)
NJ American Water – Strathmere	Upper (Twp)
Shore Acres Mobile Home	Upper (Twp)
West Cape May Water Department	West Cape May (B)
Carol Lynn Resources, Inc.	Woodbine (B)
Woodbine MUA	Woodbine (B)

Source: NJDEP 2016



Figure 4-20. Potable Water Facilities in Cape May County





**Wastewater Facilities**

According to the Cape May Water Quality Management Plan/Wastewater Management Plan (2007), there are five main wastewater treatment plants. Four of which are owned and operated by the Cape May County Municipal Utilities Authority, and one by the Lower Township Municipal Utilities Authority. The Dennis Township – Woodbine region is the only one without a regional wastewater treatment plant, while the Wildwood – Lower Township region has two facilities. The County also identified 70 wastewater treatment facilities or pumps. Figure 4-21 shows the location of these facilities in the County.

**Table 4-13. Wastewater Service Regions in Cape May County**

Service Region	Municipality Served
Ocean City-Upper Township Region	Ocean City and Upper Township
Dennis Township – Woodbine Region	Dennis Township and Woodbine Borough
Seven Mile – Middle Township Region	Avalon Borough, Middle Township, Sea Isle City, Stone Harbor Borough
Wildwood – Lower Township Region	Lower Township, Middle Township (south), North Wildwood City, West Wildwood Borough, Wildwood City, Wildwood Crest Borough
Cape May Region	City of Cape May, Cape May Point Borough, Lower Township (south), West Cape May Borough

Source: Cape May Water Quality/Wastewater Management Plan 2007



Figure 4-21. Wastewater Facilities in Cape May County





### 4.6.3 Health and Medical Lifelines

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Cape May County has one major hospital in the county. Cape Regional Medical Center is in Middle Township and is an acute-care medical center that provides a variety of inpatient and outpatient services. In addition to the hospital, there are 17 health service facilities in Cape May County. Figure 4-15 shows the location of Health/Medical lifelines and other emergency services in Cape May County.

### 4.6.4 Energy (Power and Fuel) Lifelines

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The primary energy provider for the County is Atlantic City Electric. Energy services are also provided by South Jersey Gas. The County identified one electric generating facility as critical. Figure 4-22 illustrates the location of the utility lifelines in Cape May County. Beesley's Point in Upper Township is home to a decommissioned coal plant that may be re-purposed for future energy uses.

The offshore areas of Cape May County are currently proposed for the construction of the State's first offshore wind farm. The project, known as Ocean Wind, will cover a 160,500-acre area stretching between Cape May and Atlantic City and be located 15 miles offshore. The proposed wind farm will comprise 1,100 MW powering more than half a million homes. Construction is anticipated for the early 2020s and operations are expected by 2024 (Ørsted 2020). Energy resources are shown in Figure 4-22.

### 4.6.5 Communication Lifelines

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There are 68 communication facilities located in Cape May County. AT&T, Verizon, and T-Mobile each provide nearly complete 4G LTE coverage throughout the County. Significant portions of the County receive 5G service through T-Mobile and AT&T. However, significant gaps remain in coverage, and areas such as Cape May Courthouse, Burleigh, portions of Cape Island, Rio Grande, Wildwood, Dennis, and Upper Township remain uncovered (AT&T, T-Mobile, Verizon 2020).

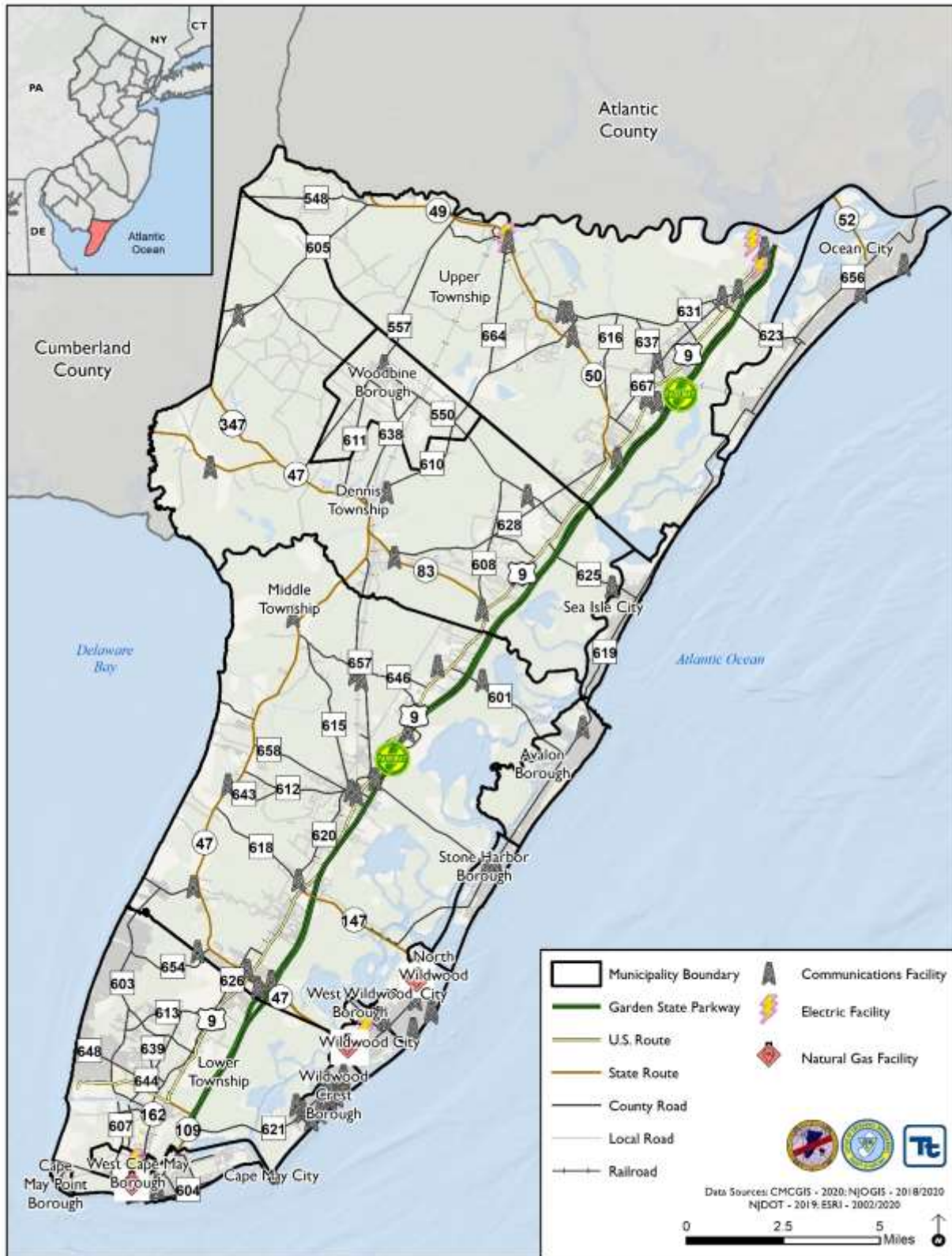
The Federal Communications Commission reports that there are 53 structures in its Antenna Structure Registration as of 2020. A map of these structures is shown on the following map. Many of these structures are located along the Route 9/Garden State Parkway corridor and are owned by a variety of entities, including utility companies, local governments, and communication firms (Federal Communications Commission, 2020).

Communication facilities are shown in the map in Figure 4-22.





Figure 4-22. Communication, Electric, and Natural Gas Facilities in Cape May County





### 4.6.6 Transportation Lifelines

From north to south, lying along an axis formed by US Route 9 and the Garden State Parkway, the County is approximately 27 miles long. At its widest point (an east-west line through Eldora), the County measures approximately 15 miles.

Cape May County consists of a chain of developed barrier islands connected to the mainland by a series of causeways. The causeways tie into the north/south Route 9/Garden State Parkway corridor that links the County to the northern part of the State. The Garden State Parkway was opened in 1956 and has served as the major transportation link to and within Cape May County. It passes through the length of the County, from the Great Egg Toll Plaza heading 29 miles south to its terminus at Exit 0.

The “northern bay shore” or western part of the County is mostly rural/agricultural land with limited public water or sewer and is less densely developed. It is served by NJ State Route 47.

Transportation access out of the County is limited to road crossings from the Garden State Parkway at the Great Egg Toll Plaza, Route 52 (from Ocean City), Route 49 (Route 50, Route 550, and Route 557 connections) and Route 347. These limited road connections strongly affect evacuation routes and evacuation times together with road flooding hazards during major storms.

One of the most significant negative impacts of tourism in Cape May County is traffic congestion. The heavy reliance on the automobile and lack of adequate mass transportation in the region has contributed to increasing congestion. Parkway traffic has increased in pace with the overall development of the County.

Figure 4-23 shows the ferry and marina locations in the County and Figure 4-24 shows the location of transportation lifelines in Cape May County.

#### Ferry

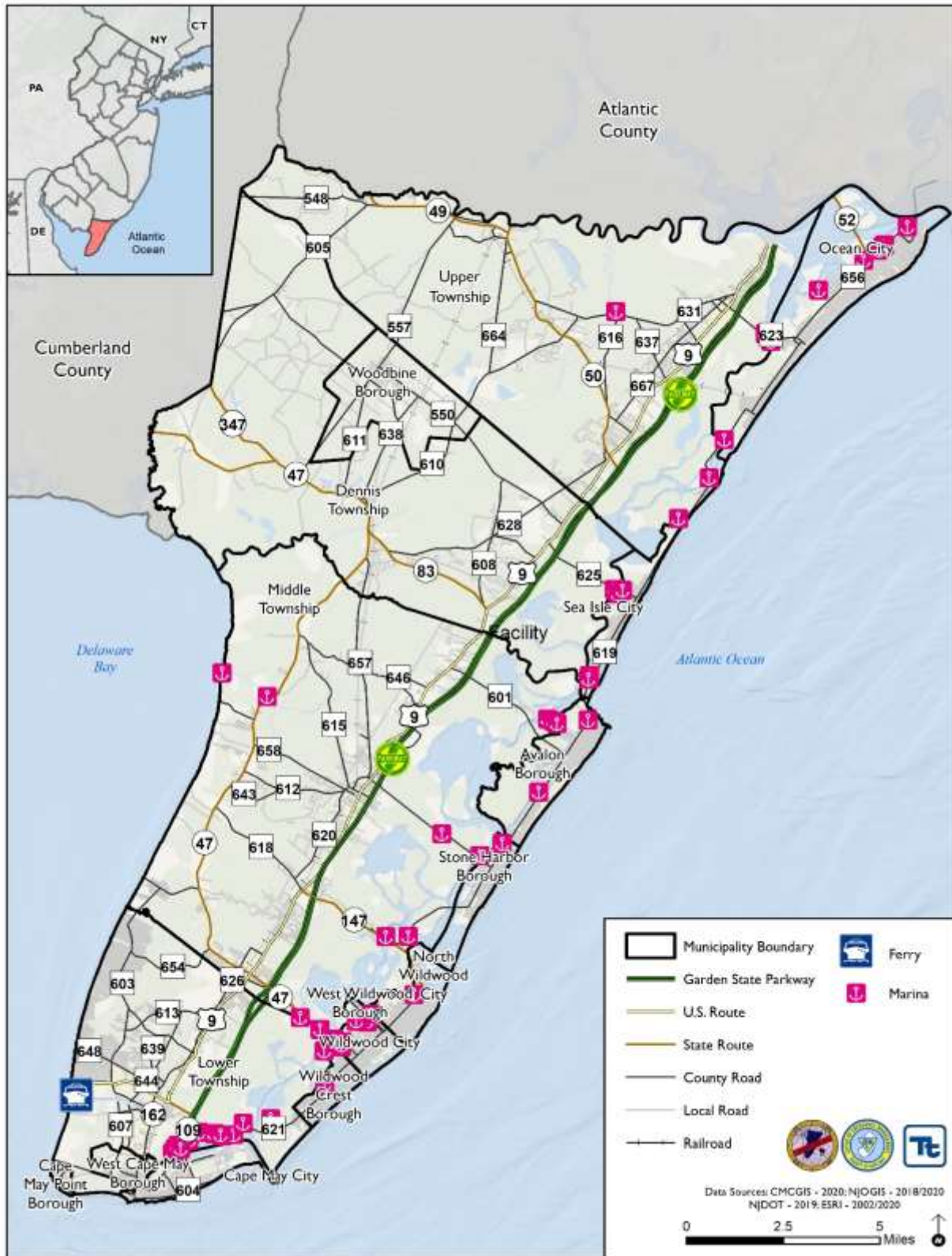
The Cape May—Lewes (Delaware) Ferry, owned and operated by the Delaware River and Bay Authority, is the major water transportation facility serving Cape May County. A fleet of five vessels capable of carrying approximately one hundred cars and 800 passengers each make Delaware Bay crossings year-round. Terminals are located at the west end of the Cape May Canal and at Breakwater Harbor, Lewes, Delaware (County SRPR 2015).

#### Marinas

A marina is an area or dock where yachts and small vessels can moor for supplies, refueling or maintenance checks. There are 56 marinas located in the County. Most of these marinas can be found along the Intracoastal Waterway, a major route permitting inshore passages for 102 miles through protected bays, channels and lagoons from Manasquan Inlet through Cape May County to the Delaware Bay. The waterway is used mainly by recreational craft during the summer season and by small craft during the winter months.



Figure 4-23. Marinas and Ferry's in Cape May County, New Jersey





### Public Transportation

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Bus transportation in Cape May County is provided by three entities: New Jersey Transit, which provides service from Philadelphia/Camden via Sicklerville/Atlantic City to Sea Isle, Avalon, Stone Harbor, Wildwood and Cape May; the Five Mile Beach Electric Railway (a private operator) which operates public passenger service serving the Wildwoods, Cape May City, the Wildwoods and Ocean City; and a Fare Free Transportation system operated by the County (County SRPR 2015).

### Air

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Air travel within the County is facilitated by three airports: the Cape May Airport located in Erma, in the north-central part of Lower Township, the Ocean City Municipal Airport, and the Woodbine Municipal Airport. The Atlantic City International Airport, located approximately 20 miles north of Cape May County, services larger commercial aircraft for business as well as private travel (County SRPR 2015).

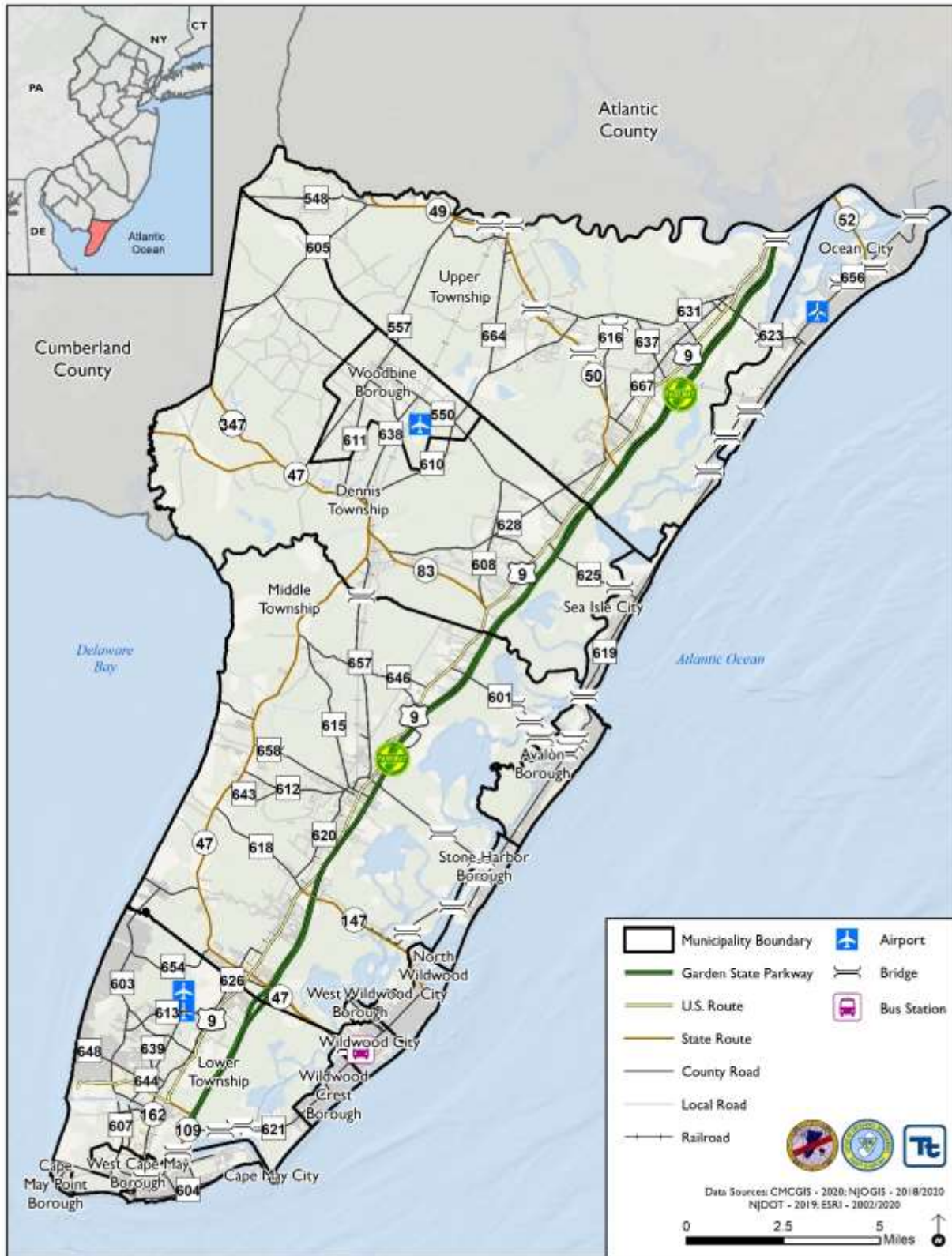
### Rail

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There are two active rail lines within Cape May County: a freight line that provides coal and fuel oil to the electric generating station in Beesley's Point (Upper Township) and a tourist/passenger rail service between the Cape May County Zoo, Cold Spring Village, and the City of Cape May. Passenger rail is operated by the Cape May Seashore Lines Railroad. There is also a seasonal excursion train between Tuckahoe Station and Richland (County SRPR 2015). The tourist/passenger rail service between Upper Township and Cape May County has been suspended since 2014 (*Cape May County Herald*, 2015).



Figure 4-24. Transportation Features in Cape May County, New Jersey





### 4.6.7 Hazardous Materials Lifelines

Due to heightened security concerns, local utility lifeline data needed to complete the analysis were only partially obtained. Figure 4-25 shows the locations of the facilities for these various lifeline utility systems in Cape May County.

#### HAZMAT Facilities

A Superfund site consists of land in the United States that has been contaminated by hazardous waste and identified by the U.S. Environmental Protection Agency (EPA) as a candidate for cleanup because it poses a risk to human health or the environment. These sites are placed on the National Priorities List (NPL), the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide EPA in determining which sites warrant further investigation.

Abandoned hazardous waste sites placed on the federal NPL include those that EPA has determined present *a significant risk to human health or the environment*, with the sites being eligible for remediation under the Superfund Trust Fund Program. As of 2020, Cape May County hosts one hazardous sites in the federal Superfund Program that are listed as on the NPL (CERCLIS 2020). The Superfund site is known as the Williams Property in Swainton.

The EPA Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) (Superfund) Public Access Database (CPAD) reports that there are currently nine archived Superfund sites located in Cape May County (CERCLIS 2020). An archived Superfund site is one that has no further interest under the Federal Superfund Program based on available information and is no longer part of the CERCLIS inventory. Archived and active Superfund sites are accessible through the same database but are differentiated by status.

Overall, there are 27 Hazmat facilities in Cape May County. Figure 4-25 shows the location of these facilities throughout the County.



Figure 4-25. Hazardous Material Facilities in Cape May County, New Jersey

