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# PART I: SOUTHERN NEW CASTLE COUNTY MASTER PLAN

## 1. Purpose and Overview

The Southern New Castle County Master Plan establishes a comprehensive long-term vision for land use and infrastructure in southern New Castle County (NCC) based on sound planning principles and public input. The plan guides development, preservation, infrastructure and policy decisions in the study area. The findings and recommendations from this plan will be incorporated into the current New Castle County Comprehensive Development Plan (2012 Update) and subsequently carried forward into the 2022 New Castle Comprehensive Development Plan. The results of this plan will also be used to inform the Wilmington Area Planning Council (WILMAPCO) Regional Transportation Plan and the Delaware Department of Transportation (DelDOT) Capital Transportation Program.

The southern New Castle County planning area comprises the area south of the Chesapeake and Delaware Canal, amounting to roughly 40% of the total land area and 11% of the population of the County. It includes the incorporated towns of Middletown, Odessa, Townsend as well as portions of Smyrna and Clayton.

For the purpose of this plan, the southern New Castle County planning area is divided into: the east and west wings as well as the central core. These subsets depicted in Figure 1-, are based on current development patterns and the sewer service area (defined in the 2012 Comprehensive Development Plan).

More than twenty years of residential and nonresidential growth, has transformed southern New Castle County from several small towns within a landscape dominated by an agricultural and natural resources, into a suburban bedroom community including predominance of single-family homes, auto-oriented retail and expanding roads, but limited local employment and transit options. This is particularly

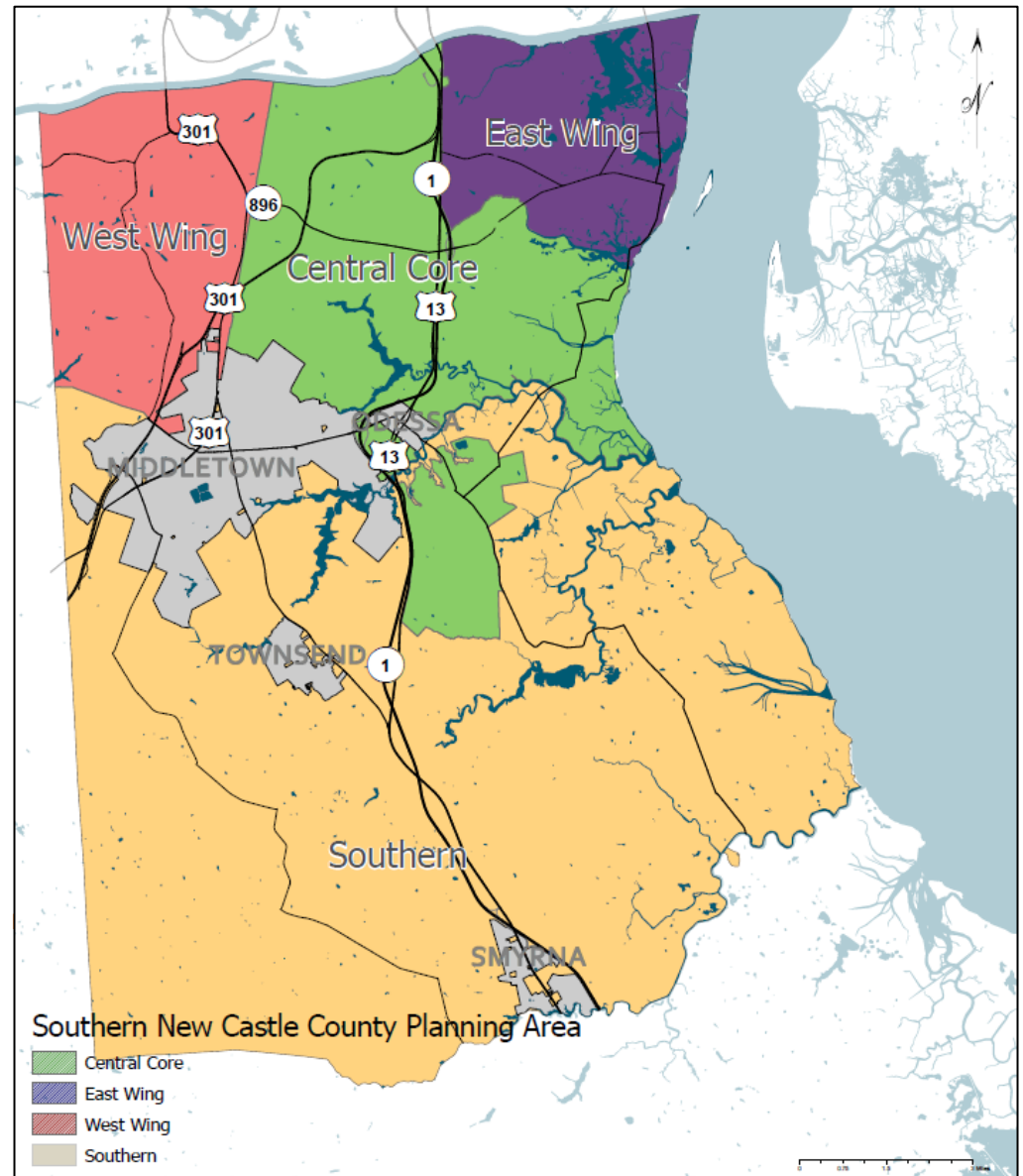


Figure 1-1: Southern New Castle County Planning Area

the case for the areas surrounding and to the north of Middletown. About 86% of southern New Castle County residents commute to jobs outside of the area; of those, 65% commute to northern New Castle County. While population growth has spurred new local retail and service-oriented business, (particularly in and around the incorporated Town of Middletown), growth in other economic sectors has not been commensurate with residential growth. Between 1954 and 1970, 2% of new housing units were located in southern New Castle County. Since then the share of new single-family dwellings has more than doubled every 16 years. Trends in online retail locally and nationally has and will continue to significantly impact this area resulting in development of warehousing and freight/logistics centers. These pressures are expected to continue.

Looking to the future, the southern New Castle County area faces tremendous opportunities but also vexing challenges. The area continues to be sought after by young families and others for its high-quality schools; relatively low cost of land and housing; proximity to regional destinations, resources, and amenities; and agricultural, natural, and historic character.

The southern New Castle County plan seeks to:

- better manage growth and clarify the confusion between what are growth areas and what are areas for rural preservation;
- enhance existing and developing new policies and mechanisms to preserve agricultural and natural resources;
- increase coordination between the municipalities and the county;
- focus on enhancing and infilling existing towns and other growth areas, with an emphasis on economic development; and
- prepare for the shift in the age of the population toward a greater share of people 65 and older, including housing, local community services, and multi-modal transportation infrastructure.

The Southern New Castle County Master Plan effort builds on multiple past studies and planning efforts, with proposed growth patterns and strategies tied to population growth, housing needs, preservation efforts, and transportation improvements. It connects past planning efforts with a clear set of objectives for the future. This approach will help set a realistic and sustainable path forward for existing and future residents that preserves and enhances the environment.

The following key factors informed the development of this plan:

- Prior to 1997, sewer availability in southern New Castle County was limited, contributing to the vast majority of growth occurring in and around Middletown.
- During the early to mid-2000s, the County planned growth, including sewer service, in the central core. Little growth was anticipated in the rest of the study area, except for in the municipalities, which have their own planning authority. However, sewer service in the east and west wings was not prohibited or excluded. Even though the Future Land Use in the two wings is different, the two wings have the same zoning and land development requirements and guidelines as the central core, which created a situation where there was not a clear distinction between areas planned for growth and those planned to remain rural or preserved.
- Since the 2000s, a significant amount of growth has occurred in Middletown and the central core, along with rural sprawl on individual septic systems in other areas. The west wing experienced limited growth.

- In the past two years, the development pressure in the west wing has increased significantly, and there have been multiple lawsuits against the county regarding the extension of sewer service in the two wings from the central core.
- Today, development pressure continues. Many of this plan's recommendations speak to directing growth to occur on central sewer in limited, planned growth areas, while more clearly protecting rural areas by limiting growth in strategic areas.

## 2. Background and Planning Context

### *Historical Perspective*

The Lenape people occupied the southern New Castle County area during the pre-colonial era, existing largely by fishing, hunting, and farming. Early colonial settlement in southern New Castle County grew in the beginning of the eighteenth century, when development in the region, particularly in agriculture, was encouraged by William Penn. Settlement during this period was sporadic and focused around main transportation routes. Through the 19<sup>th</sup> and early 20<sup>th</sup> century, agriculturally related industry and development continued to occur, sporadically, with growth of enclaves and towns around transportation routes, including the present-day towns of Odessa (historically known as Cantwell's Bridge), Middletown, and Townsend. Southern New Castle County's historic character is largely rooted in its strong agricultural history dating from the early eighteenth century. Agricultural complexes once belonging to both the rural elite and tenant farmers dot the rural landscape, while more dense, historic town centers are concentrated in the towns such as Middletown, Odessa, and Townsend.

Large, single-family residential developments began appearing in the middle of the 20<sup>th</sup> century. From 1965 through 1988, growth in the planning area was almost exclusively in the municipalities of Middletown, Odessa and Townsend. Between 1988 and 1996, New Castle County processed 67 residential development plans in southern New Castle County for 5,415 new residential dwelling units (existing 6,210 dwelling units). By the 2000's the rapid growth of single-family suburban developments directly contributed to the loss of more than 25,000 acres of cropland. These suburban development patterns form a patchwork across the once-rural landscape throughout the planning area, particularly in the greater areas of MOT and north toward the C and D Canal.



Figure 2-1: 1849 Rea Price Map

## ***Southern New Castle County Planning and Sewer Initiatives***

Over the past thirty years, New Castle County has undertaken significant planning and infrastructure planning initiatives with the intent of guiding development in the southern area of the County. [REDACTED] Historically, land use planning for the unincorporated areas of southern New Castle County has aimed to steer residential growth toward areas with sewer service, however, the results have been inconsistent. The provision of sewer and water service in southern New Castle County has long been of interest to the County and State of Delaware, largely because growth and the anticipation of growth will have long-term irreversible impacts on the sensitive natural features of the area, the prime agricultural soils upon which the county's agricultural economy depends, and the area's infrastructure. The County believes the evaluation of existing service and planned expansion must be closely tied to identified growth areas in order to make service practical and affordable. At the same time, growth on open land must be curtailed outside sewer service areas to minimize impacts to groundwater and transportation infrastructure and reduce development pressure on agricultural lands. An example of how this challenge had been addressed in the mid-2000s was a resolution passed by Council directing growth and infrastructure to stay within the central core. For many years the approach was successful at guiding development to occur within the intended area—the central core—where key infrastructure was also coordinated and provided. The large shortcoming here, which is a classic land use planning mistake made in many communities, is that the County did a good job planning for where growth was to occur but did nothing to limit growth where it wasn't planned. The effect of that flaw is apparent today.<sup>1</sup>

The 1988 and subsequent 1992 revisions to New Castle County Comprehensive Development Plans acknowledged development pressure in southern New Castle County, particularly in and around Middletown, raising concern about the potential impact of residential development on the farming industry. Both plans identified issues with the amount of land consumed and lot sizes in residential developments on septic systems, which remains an issue to this day.

As a result of those findings and the need to have a better understanding of the impact of septic development in southern New Castle County, the County and the Delaware Department of Natural Resources and Environmental Control (DNREC) conducted the *Wastewater Needs Evaluation and Plan for Southern New Castle County* in 1992. The study recommended conducting wastewater planning in southern New Castle County in accordance with one of three scenarios: (1) Present Systems, (2) Expand Existing Public Service Area and (3) Develop New Public Service Area.

In 1996, New Castle County conducted the *Southern New Castle County Land Use Study*, which evaluated three similar land use scenarios: (1) Maintain Existing Policies and Regulations, (2) Direct all Future Growth to the Existing Middletown-Odessa-Townsend (MOT) Growth Area and (3) Expand the Existing MOT Growth Area to Include Lands North of Middletown and Odessa. The *Southern New Castle County Land Use Plan* was formally incorporated into the 1997

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<sup>1</sup> 1988 Comp Plan Map 1.4, 1988 Com Plan AG-7

*Comprehensive Development Plan* expanding the growth area consistent with Scenario 3.<sup>2</sup> The Sewer Service Area was also revised to include north and northwest of Middletown consistent with Scenario 3 of the *Wastewater Needs Evaluation and Plan for Southern New Castle County*.<sup>3</sup>

Development pressure continued in southern New Castle County into the 2000s. As a result, New Castle County expanded the sewer service area to include the east wing in the 2002 *Comprehensive Development Plan*, while investing in sewer infrastructure to primarily serve the central core. The sewer service area<sup>4</sup> has remained consistent in the 2007 and 2012 *Comprehensive Development Plans*.<sup>5</sup>

From 2002 through 2017, 8,318 residential lots were approved in the central core on sewer with only 100 lots approved for development on a septic system. Since 2017, as subdivisions consumed developable land in the central core, interest has grown in developing residential subdivisions on septic systems in the east and west wings. Since 2014, the Department of Land Use has been approached regarding development of about 900 new residential lots on septic systems. As of 2019, 450 lots have been recorded. Recent planning studies include the 2019 *Southern New Castle County Wastewater Plan* and the *Water Supply and Demand in Southern New Castle County through 2050*.<sup>6</sup>

The *New Castle County Comprehensive Development Plan* was adopted in 1988 and updated every five years through 2012. The next update will be in 2022, as a result of changes to Delaware state law. The 2012 *Comprehensive Development Plan* defines objectives and strategies specifically related to southern New Castle County to achieve efficiency and sustainability goals. Those include:

- Promoting redevelopment and infill and guiding new residential development to New Community Development Areas (specific locations identified as Future Land Use Map designation) served by sewer, thereby supporting more compact development patterns and efficient/cost-effective delivery of public infrastructure and services.
- Recommending incentives and regulatory mechanisms, such as Transfer of Development Rights, to minimize impacts to the historic/rural character and preserve natural and agricultural resources.
- Achieving an “overall density of 3-5 dwelling units per acre that provides a variety of housing and employment options, accommodating future growth by using less land and providing more opportunities for residents to work, shop, and meet other needs nearby.”

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<sup>2</sup> 1997 *Comprehensive Development Plan* 6-13 to 6-19 & Figure 14.5

<sup>4</sup> Defined as the areas planned for future sewer.

<sup>6</sup> “Water Supply and Demand in Southern New Castle County through 2050” is currently in draft form and under final review; it serves as an update to the 2006 “Estimates of Water Supply and Demand in Southern New Castle County through 2030”.

- Continuing to support and facilitate the location of schools, parks, libraries and other public services in designated growth areas and centers.
- Using multi-modal strategies to enhance mobility and accessibility for people, not just those using motor vehicles.

This plan serves as an update to *2009 Southern New Castle County Infrastructure Master Plan*.

### 3. Planning Process

The Southern New Castle County Master Plan process is the product of extensive public engagement including: five public workshops, online public participation opportunities, meetings with an Advisory Committee, and collaboration with municipal representatives. The Advisory Committee is comprised of public and private stakeholders including civic associations, community organizations, state and local agencies, local and state elected officials, and business owners. The following elaborates on the public planning process that the County undertook:

- October 2018 -- Kickoff meeting at the Odessa Fire Hall to introduce the community to the planning study and share and gather preliminary information.
- January and March 2019 -- Visioning sessions at Odessa and Middletown Fire Halls. Current conditions and growth trends were gathered via technical analysis and goals, challenges and assets were gathered via public engagement activities.
- June 2019 – Presentation of rough draft land use scenarios, framed by growth trends and projections, and issues and goals discussed at community meetings.
- September 2019 – Shared summary document of community feedback online.
- October 2019 -- Public workshop held to present and discuss refined land use scenarios, preliminary findings and recommendations and online project story map created to summarize the public workshop content.
- November 2019 -- Published rough draft plan, containing the proposed preferred land use scenario, draft recommendations and strategies, and a full digest of the planning process and findings to date. Comments on this draft were received through December 2019.
- February 2020 – Developed and distributed an update and comment summary document.

Detailed Timeline of Engagement Activities		
Project Phase	Date(s)	Activity
Kickoff	October 17, 2018	October 2018 Public Information Session
Visioning / Existing Conditions	January 17, 2019	Advisory Committee Meeting
	January 31, 2019	Visioning Public Workshop
	Jan. 31 – Feb. 22, 2019	Metroquest Online Feedback
	March 13, 2019	Visioning Public Workshop
	March 13 – March 20, 2019	Metroquest Online Feedback
Preliminary Land Use Scenarios	June 17, 2019	Advisory Committee Meeting
	June 24, 2019	Scenario Development Public Workshop
	June 24 -July 8, 2019	Survey Monkey Online Feedback
Scenario Analysis	October 7, 2019	Scenario Analysis Public Workshop
	Oct. 7 - Oct. 18, 2019	Story Map Online Feedback
	October 23, 2019	Advisory Committee Meeting
Draft Plan	November 4, 2019	Publish rough draft plan
	December 16, 2019	Public comments received for rough draft plan
	Winter / Spring 2020	Conduct detailed transportation analysis
Final Plan	Summer 2020	Final plan complete

Figure 3-1: Timeline of Public Engagement



## 4. Existing Conditions

### Demographics

As of 2018, the estimated population of southern New Castle County was 59,802, which represents about 10 percent of the total County population (2018 ACS Data). There are approximately 20,213 households, with an average household size of 3.03. The average household size is larger than that of the county as a whole, which has an average household size of 2.59. The planning area population is expected to grow over the next 30 years. The number of households is expected to increase by 11,138, which equates to 31,700 additional people (WILMAPCO Forecasts based on 2018 Population Consortium Projections).

The median age of residents in southern New Castle County is 39.1 years old, with the highest percentage, 15.4%, of residents being within the 45-54 year age group. Today, approximately 8,100 residents of southern New Castle County are over 65 years (nearly 14% of the population), while the countywide total is approximately 81,000 (nearly 15%). Over the next 30 years, the Delaware Population Consortium projects that New Castle County as a whole will have the highest percentage increase in residents over 65 years of the state's three counties, with an increase of over 50% (approximately 43,000 people).<sup>7</sup>

In Southern New Castle County, about 73% of the population identifies as white, 20% identifies as black and just under 7% identifies as Hispanic, in contrast to northern New Castle County where about 63% of the population identifies as white, 26% identifies as black and just over 10% identifying as Hispanic in northern New Castle County (2018 ACS Data).

Residents in southern New Castle County 25 years and older have a high level of academic attainment with 92.4% having graduated from high school, and 31.4% having a bachelor's degree or higher in contrast to those in northern New Castle County with 86.9% having graduated from high school, and 28.3% having a bachelor's degree or higher (2018 ACS Data). This contributes to a median household income of \$98,464, with only 4.7% of the population living below the poverty level. Most residents work in the fields of: educational services, and health care and social assistance (27%); finance and insurance, and

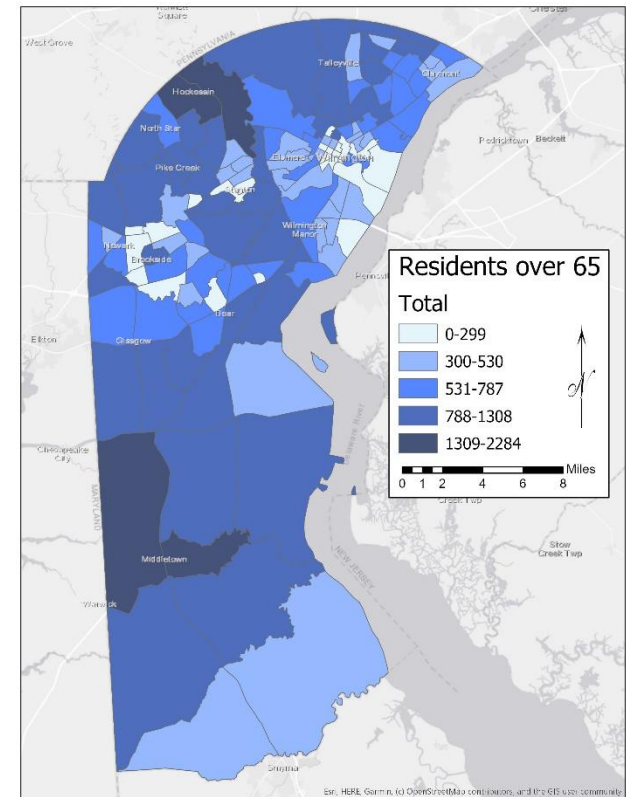


Figure 4-1: Residents over 65 years old

<sup>7</sup> <https://www.dhss.delaware.gov/dhss/dsaapd/demogr.html>

real estate and rental and leasing (12.2%) and retail trade (10.10%). The average resident in southern New Castle County commutes 34.5 minutes to work each day as opposed to about 24.8 minutes for their counterparts in northern New Castle County (2018 American Community Survey).

## Economy

### INDUSTRIES

Jobs in southern New Castle County are largely concentrated in industries that service the local population (Figure 4-2). These industries include retail, health care, education, and construction, or “non-traded industries.” The dollars exchanged in non-traded industries are local in their origin, making the opportunity for wealth creation limited. Traded industries, such as manufacturing, produce locally but sell elsewhere, result in new dollars flowing into the local economy, contributing to wealth creation.

The national average for employment in traded industries is 36 percent. In southern New Castle County, it is estimated to be 21 percent. Though this number is expected to be low in a mostly rural, bedroom community area, there is room for improvement.

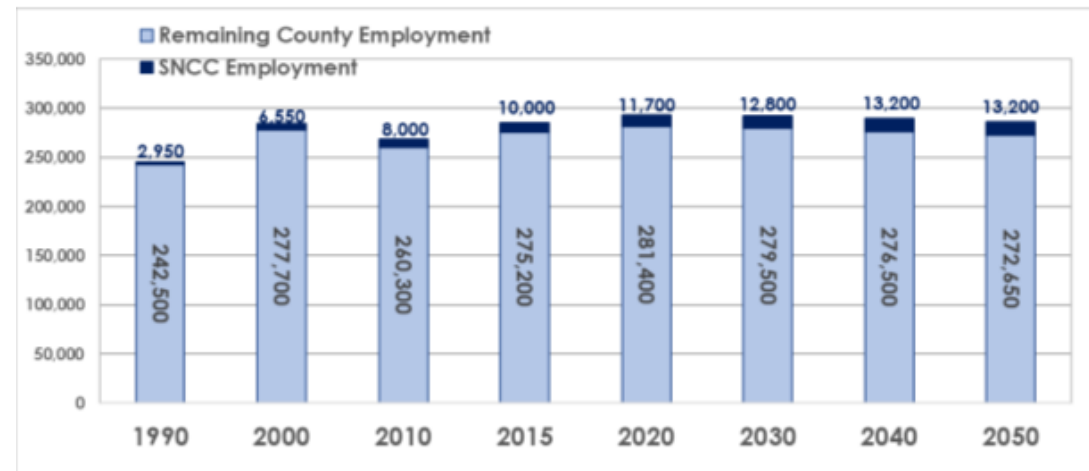
Industry	County	SNCC
Agriculture & Mining	0.7%	0.7%
Construction	5.7%	6.2%
Manufacturing	7.2%	7.8%
Wholesale	2.3%	1.4%
Retail	10.4%	9.9%
Transportation & Utilities	7.0%	9.4%
Information	2.0%	2.0%
Finance, Insurance and Real Estate	14.5%	13.4%
Services	44.9%	42.6%
Public Administration	5.2%	6.5%

Figure 4-2: Employed Population by Industry, 2019 (Source: ESRI)

### JOB GROWTH

Between 1990 and 2015, southern New Castle County added over 7,000 new jobs, out of 42,250 for the entire county. Between 2005 and 2015, southern New Castle County saw a 67% increase in employment, growing from 5,936 to 9,927 jobs in the planning area. WILMAPCO TAZ projections indicate that southern NCC will add over 10,000 jobs from 1990 to 2050, and the share of the jobs will grow from 1.2% in 1990 to 4.6% in 2050.

Most southern New Castle County employment growth between 2005 to 2015 occurred in non-traded industries serving household growth (Figure 4-3). Healthcare employment increased significantly, more than tripling its totals since 2005. There was, however, growth in the accommodation, manufacturing, arts and entertainment, and transportation industries over this period. These industries contribute to community wealth generation.



Sources: US Census, American Community Survey, Delaware Population Consortium, WILMAPCO

Figure 4-3: Share of Southern New Castle County Employment vs. Rest of New Castle County (1990-2050)

In determining where to locate a business, a chief criterion used by investors is the quality of the workforce. Educational attainment, industries where employment and commuting patterns are factors considered. For the most part, southern New Castle County is well educated. One-third of southern New Castle County residents over the age of 25 have a bachelor's degree or higher. Southern New Castle County residents' educational attainment is not as high as countywide, but higher than that of the statewide population.

## EMPLOYMENT LOCATIONS

While southern New Castle County has experienced significant residential growth over the past 20 years, however, employment opportunities have not kept pace. Approximately 86.4% of residents work outside of the planning area leaving only 13.5% who live and work within southern New Castle County. Conversely, 63.8% of jobs in the southern New Castle County are filled by people living outside of the area. Middletown is the largest employment center in the planning area, housing about 55% of the area's jobs. Summit Airport, a public-use airport located north of Middletown, in the west wing employs more than 250 people. It is important that New Castle County focuses on addressing the mismatch between jobs and households which has implications on traffic and the environment while fostering growth of existing job centers.

## *Land Use and Development Patterns*

Development type, intensity and patterns are the direct outcome of market conditions and demand, as well as land use policy. Thus, land use decisions have had a substantial impact on the environment and quality of life for residents in southern New Castle County. The Future Land Use Map spatially establishes County land use policy at a large scale considering existing uses and future aspirations (**Error! Reference source not found.**). Zoning maps provide a much finer grain implementation of those goals (Figure 4-5).

Existing development concentrated in and around the municipal areas of Middletown, Odessa and Townsend as well as in the central core. While development patterns over the last 20 years in unincorporated southern New Castle County can generally be characterized as low density single-family residential development, several more ambitious developments including Village of Bayberry (North & South), Bayberry Town Center and Whitehall have a more efficient use of land, with a greater diversity in housing types and uses. WILMAPCO generated forecasts, based on official projections by the Delaware Population Consortium, estimates that there will be about 11,400 new households in southern New Castle County by 2050, while there are about 11,000 existing unbuilt lots as of June of 2018. Absent more deliberate Future Land Use and Zoning maps, southern New Castle County may have a significant surplus subdivided but undeveloped parcels (see **Error! Reference source not found.** and Figure 4-5). Despite land consumption that resulted from developments, and the potential provided for under current land use policies, there is still a significant amount of undeveloped, yet developable land in southern New Castle County.

Protected resource lands are mostly located in areas south and east of the MOT area and aim to protect environmental resources and agricultural lands. There are also significant environmental resource lands in the eastern portion of the region that are near the Delaware River. These environmental resources, notably tidal wetlands, are an important part of the larger ecosystem, particularly for migratory birds. This area is also popular for outdoor activities such as fishing and bird watching. The Delaware Bayshore Byway (Route 9) is also located in this area, which is an important scenic and historic resource in southern New Castle County. Sea level rise, as a result of climate change, will have a significant impact on the eastern portion of the region, making these areas less suited for development in the future. The rural agricultural character of southern New Castle County continues to be threatened by development,

particularly as farmers look to retire. Once a multi-generational endeavor, where a farm would be passed down from generation to generation, there may no longer be a desire for the next generation to continue farming.

Based on the future land use and zoning maps, development patterns could continue as they have in the past (see Figure 4-4 and Figure 4-5).

The 2012 New Castle County Comprehensive Development Plan designated areas that were outside of existing sewer infrastructure areas and were developed on septic as “Very Low” and “Low Density”. Areas in southern New Castle County that had sewer infrastructure readily available or were subject to legal settlements, and therefore slated for development, were included in the “New Community Development” areas. Contiguous areas of land that have high quality agricultural land and/or contain protected environmental resources were designated as “Resource and Rural Preservation”. It is important to note that while this designation informs policy decision regarding zoning and land use, this designation does not provide protection from development in and of itself. Areas that had existing or planned non-residential uses were designated as “Office/Commercial/Industrial”.

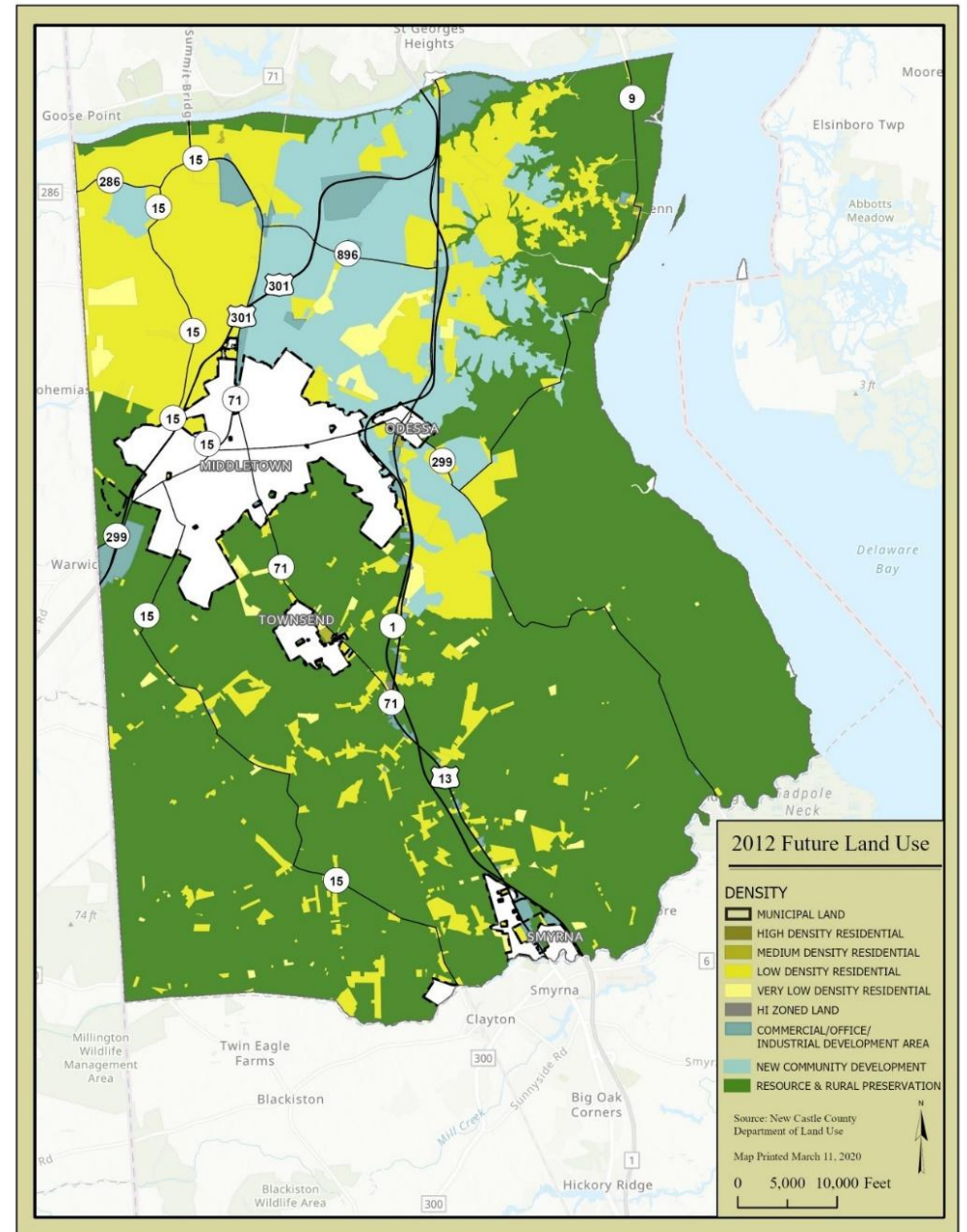


Figure 4-4: 2012 Future Land Use Map



## Zoning

Land in unincorporated southern New Castle County is predominantly zoned Suburban Reserve (SR) and Suburban (S), accounting for over 85% of the area's zoning designations. Figure 4-5: Current Zoning Map shows the zoning and their percentages across the planning area.

New Castle County first adopted zoning designations and regulations in 1954. For 43 years, when the Unified Development Code (UDC) was adopted (1997), the vast majority of unincorporated land, south of the canal, was zoned Residential (R-2). The 1997 Update to the Comprehensive Development Plan established the zoning designations depicted in Figure 4-5.

Neighborhoods developed under the former zoning code were designated as Neighborhood Conservation (NC). This zoning classification carries regulations that target protection of a neighborhood's existing character with a sensitivity to the code in place when the development was approved.

For R-2 zoned land that had not been developed, two new zoning classifications were created, Suburban (S) and Suburban Reserve (SR). Land north of Middletown, Odessa and Townsend largely received a Suburban designation, while the remaining land was designated as Suburban Reserve. While the original UDC did not outright prevent development with onsite septic services, it greatly incentivized delaying development on septic through a significantly lower permitted gross density. Land designated as Suburban Reserve was planned for sewer in

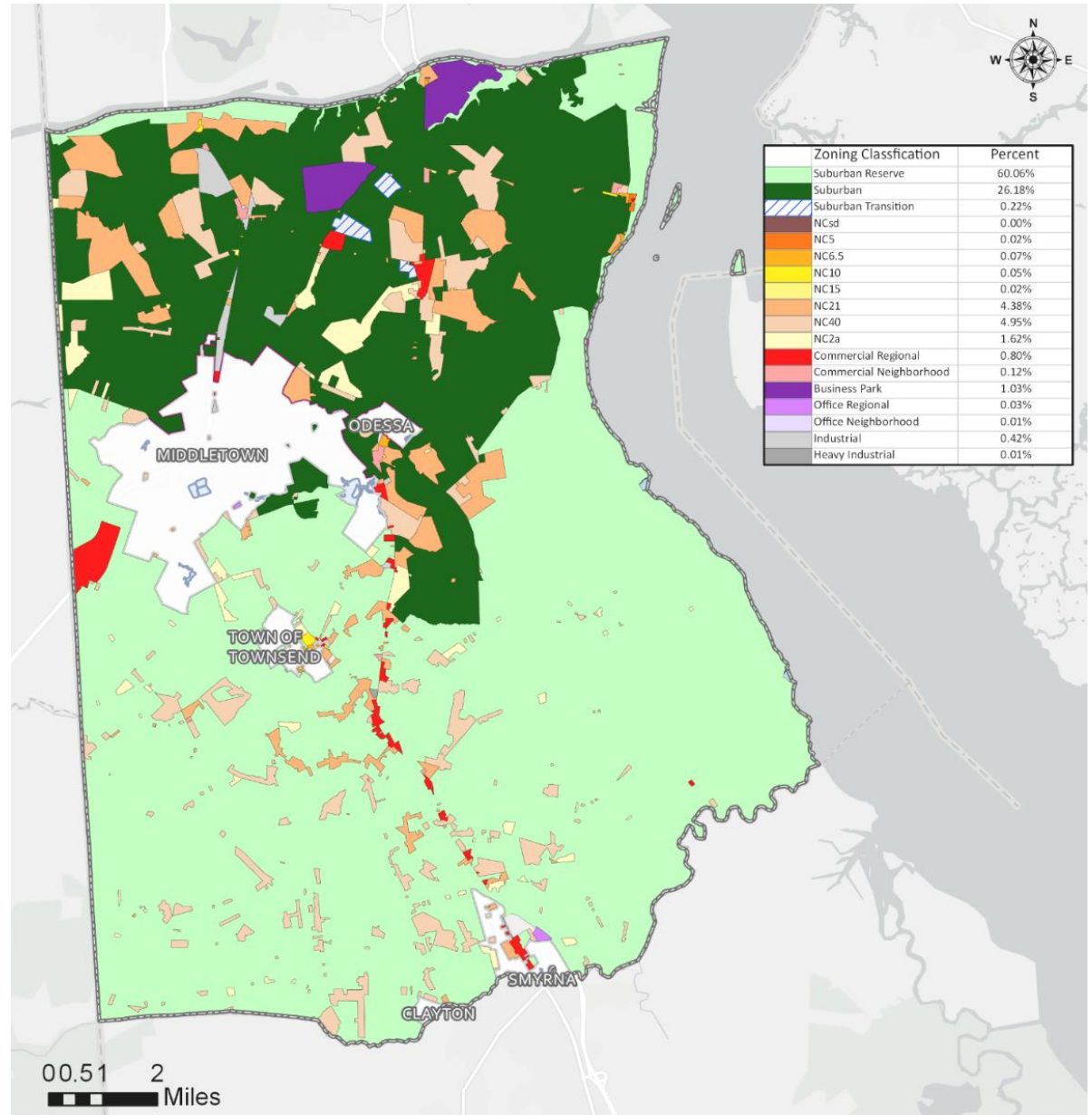


Figure 4-5: Current Zoning Map

the foreseeable future. The result of these regulations is that the vast majority of residential developments in southern New Castle County since the adoption of the UDC has occurred in the central core, with public sewer service on Suburban zoned land.

Non-residentially zoned land in the unincorporated area is largely scattered along the existing major thoroughfares of Routes 1, 13, 71 & 896. There is also significant approved, but unbuilt non-residential development in the central core, such as Scott Run Business Park and Bayberry Town Center.

## ***Infrastructure***

### **WATER SUPPLY**

Currently, all sources of potable water in the planning area are from groundwater aquifers. Since September of 1990 (Ord. 90-200), county code has required developments exceeding 25 lots to provide service through a public or a community water distribution system, greatly reducing development outside of the water service areas. Water service in southern New Castle County is primarily provided through Artesian Water Company, Tidewater Utilities and the Town of Middletown (within its jurisdictional boundaries). Public community wells in the planning area are located in the Mount Pleasant Trailer Park and Cantwell Water Company.<sup>8</sup> According to the most recent projections from the Water Supply Coordinating Council the demand for public water is anticipated to peak in 2020 and decrease into 2050, based on population projections. There will be adequate groundwater available to service the increase in population and associated households provided:

- Public water supply and irrigation wells are pumped in accordance with Delaware Department of Natural Resources and Environmental Control (DNREC) water allocation limits. DNREC will continue to monitor demands and water levels from allocated public water supply wells and irrigation wells so as not to diminish the capacity of irrigation wells for producers that wish to sustain farming in southern New Castle County; and
- Water purveyors interconnect between and within systems, add new finished water storage and aquifer storage and recovery, and transport water from aquifers with excess availability south of Townsend to growth areas between Middletown/Odessa and the Chesapeake & Delaware Canal.<sup>9</sup>

DNREC records indicate that there are more than 4,600 existing private wells in southern New Castle County. These are mostly located in the areas north of Middletown, Odessa, and Townsend, which encompasses the eastern and western wings, as well as, the central core. In addition to these, there are roughly

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<sup>8</sup> “Water Supply and Demand in Southern New Castle County through 2050” draft white paper. Water Supply Coordinating Council / U of D WRA, 2019

<sup>9</sup> Ibid.

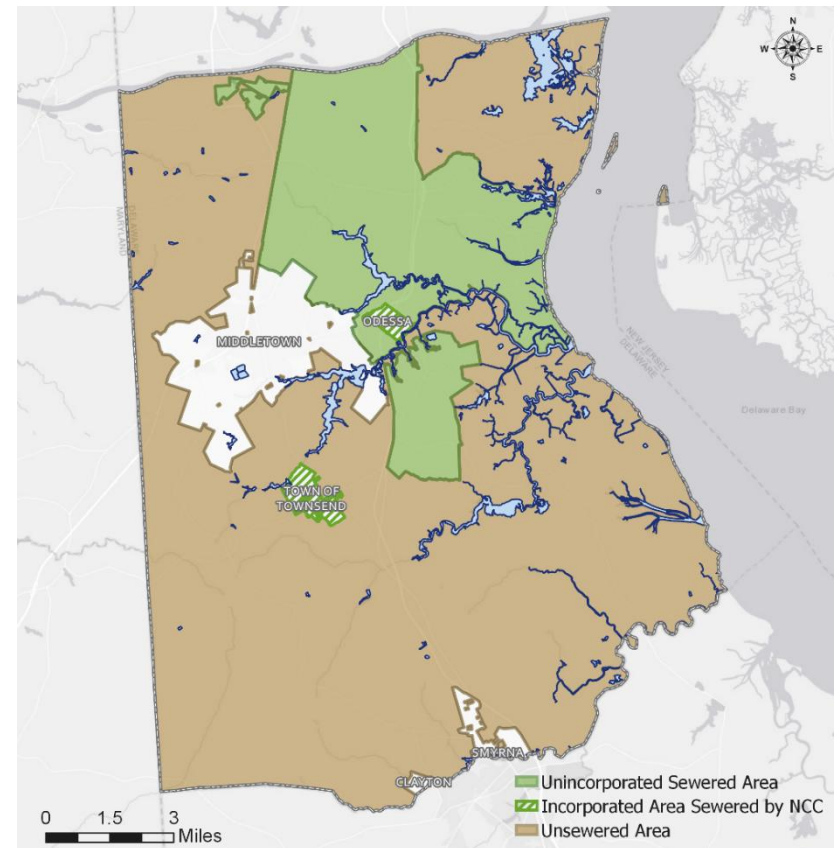
50 non-community wells serving area businesses, farms, golf courses, and nurseries.<sup>10</sup> The total number of private wells is anticipated to only increase by 0.5 percent through 2050.

## WASTEWATER AND STORMWATER SYSTEMS

Wastewater disposal refers to both the system of treating sewage from homes and businesses and the system of managing rainfall runoff, also known as stormwater management. While proper stormwater management is important to maintaining acceptable water quality and preventing flooding in a community, it falls largely under the purview of DNREC and therefore will not be explored in much detail in this document. The location of sewer systems plays a critical role in the development patterns and sustainability of a community. New Castle County is responsible for the installation and management of the sewer systems throughout most of the County and therefore this topic will be explored further.

For a portion of the planning area, sewer is provided by the county, which is managed by the Department of Public Works. In addition to unincorporated New Castle County, including operation of the sewer and treatment system for Port Penn, the county provides sewer for the municipalities Odessa and Townsend. Sewer infrastructure is largely limited to the central core with a few exceptions. The Lea Eara Farms subdivision, which is located in the west wing, was provided sewer service by the county upon failure of the subdivision's private treatment plant. Due to development policies in the early 2000's discussed earlier, a few subdivisions in the east and west wings were allowed to proceed through the land development process subject to provisions established under legal agreements (See Figure 4-6). Middletown, Smyrna, and Clayton have constructed and manage their own sewer infrastructure. There is currently a small portion of the Town of Middletown that is connected to the County's sewer infrastructure. These are managed and coordinated by agreements with the Town of Middletown.

Figure 4-6: Current Sewered and Unsewered Areas



<sup>10</sup> Ibid.

In areas where sewer service is not available, onsite wastewater facilities, more commonly known as septic systems, are constructed. Most developments in the unincorporated area using septic systems were built prior to the adoption of the UDC in 1997 and are primarily located in the core and west wing. As pressure continues to push development outside of the sewer central core into unsewered areas of the east and west wings, there is concern about the impact new larger developments on septic systems will have on water quality, consumption of land, and the rural character of the area, as older farms and open space are converted into large residential subdivisions.

## TRANSPORTATION & MOBILITY

The transportation network in southern New Castle County largely consists of roadways. Bicycle routes, pedestrian facilities, and transit have a limited presence. Major thoroughfares in Southern New Castle County include US Routes 13 and 301, and State Routes 1, 71 and 896. In Delaware, US 13 (SR 1) runs from Wilmington south through Sussex County; regionally, it connects Philadelphia to North Carolina. Until 2019, US 301 ran from Maryland through the West Wing to just south of Newark, where it connected to I-95. In 2019, US 301 was realigned and upgraded to a limited access toll route, directing traffic through the Core to US 301 where it terminates. SR 71 merges with SR 896 at the intersection of Boyds Corner Road and Summit Bridge Road and connects Townsend and Middletown to Newark. These roads take more than 75 percent of area residents to work destinations outside of the planning area.

Over 75 percent of southern New Castle County residents who work travel north to work at destinations in northern New Castle County, Pennsylvania, New Jersey, and nearby parts of Maryland (Figure 4-6), mainly via DE 896, US 13, and DE 1. About 12 percent travel south to work destinations in Kent and Sussex Counties and elsewhere in Maryland, using US 301, US 13, and DE 1. Eighty-five percent of commuters drive to work in single occupant vehicles, and less than one percent use public transportation to travel to work (Figure 4-7).

Southern New Castle County is served by six public transit bus routes. The Route 301 inter-county bus service has the highest ridership in Southern New Castle County, serving Wilmington to the north and Dover to the south. Park and ride facilities are located at Boyds Corner Road, SR 299 in Odessa, and in Smyrna. The Route 302 inter-county bus service operates between Newark and Dover with a stop in

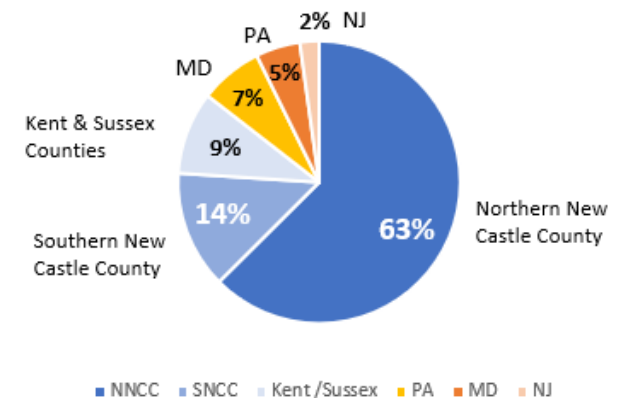


Figure 4-6: Southern NCC Residents Work Location, 2015 (Source: US Census LEHD)

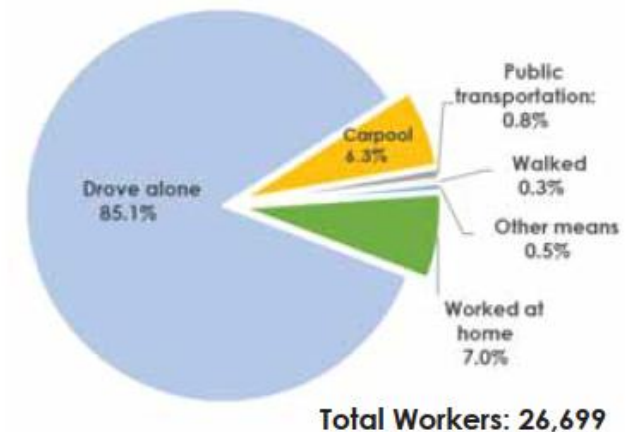


Figure 4-7: Mode Share to Work, 2016 (Sources: US Census, American Community Survey 2012-2016 5-year estimate)



Middletown. The Route 43 transit bus route operates as a circulator with local service between the SR 299 Odessa park and ride and western Middletown. It also has stops at Christiana Care, Dove Run, Middletown Crossing, Marketplace, Westtown, and Amazon. Route 45 is another commuter route with service from the SR 299 Odessa park and ride to Wilmington and a stop at the Christiana Mall. The Route 47 service essentially operates as an employee shuttle for Amazon, originating in Wilmington and stopping along the US 13 corridor. The Route 120 bus service takes passengers from the Smyrna park and ride to Dover and back. DART planners are working with the community on proposals to modify and/or enhance some of the routes serving southern New Castle County.

## BICYCLE AND PEDESTRIAN FACILITIES

Outside the municipalities and newer subdivisions, bicycle and pedestrian facilities are lacking. Therefore, there is a need for more and better-connected bicycle and pedestrian facilities in southern New Castle County to provide residents an alternative to driving. Much of the work to develop improved pedestrian and bicycle facilities has been provided through the New Castle County Bicycle Plan, which was endorsed by the WILMAPCO Council in May 2020. WILMAPCO, in partnership with New Castle County, local and state agencies, and the community developed a bicycle plan that builds upon past planning efforts and new feedback to establish recommendations for:

- Improved safety, access and comfort of bicycling
- Prioritization of infrastructure improvements including pathways, on-street routes, and end of trip needs such as bike parking.
- Identification of programs and policies for education, enforcement and encouragement

WILMAPCO has worked with DelDOT to map existing bicycle routes and score their “level of traffic stress” (LTS) to show places that are and aren’t comfortable for most cyclists. LTS is used to categorize roads by the type of riders who are willing to use them based on conditions such as traffic volume and speed, presence of bike lanes, bike lane width, and presence of a physical barrier between the bike lane and traffic. Ideally, a person will eventually be able to comfortably ride a bike to most of their daily destinations on a network of low-stress streets and trails. Figure 4-8 shows the existing non-motorized facilities in southern New Castle County.

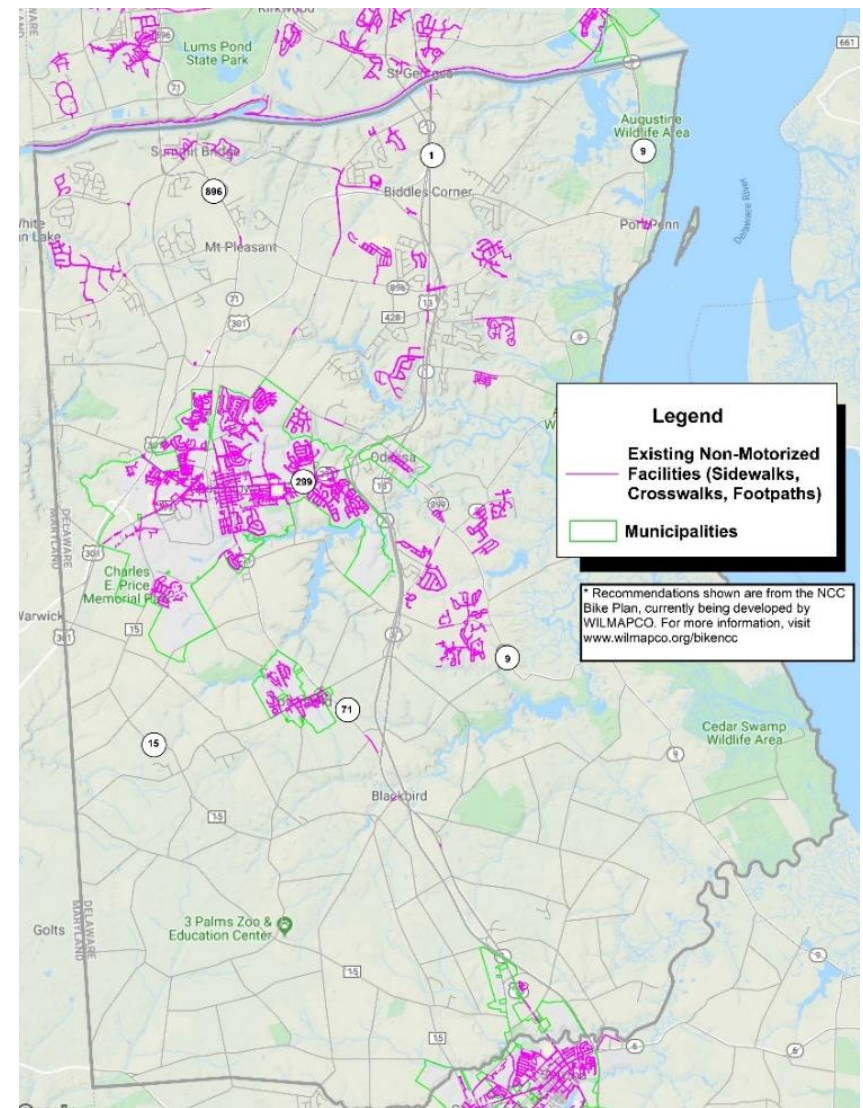


Figure 4-8: Existing Non-motorized Facilities (Source: WILMAPCO)

## AVIATION

Southern New Castle County is home to Summit Airport, a privately owned, public-use airport located on Summit Bridge Road, five miles north of Middletown. Summit Airport is included in the Federal Aviation Administration (FAA) National Plan of Integrated Airport Systems. The airport is a general aviation facility, serving private and corporate customers rather than commercial airlines, with two runways. The airport has a secured area of 550 acres and provides fixed based operations services and maintenance, repair, and overhaul services. While adjacent roadways and developments constrain physical expansion of the airport, representatives from the airport have stated that there is potential expansion in operations including an increase of helicopter operations. Coordination of local land use is important to support the airport's successful operations as well as ensure compatibility with surrounding uses.

## *Community Facilities and Services*

### SCHOOLS / EDUCATIONAL RESOURCES

Southern New Castle County has three public-school districts: Appoquinimink, Colonial and Smyrna School Districts, which support 17 schools, nine of which are in Middletown and two of which are in Townsend. The Appoquinimink School District in particular, which of the three school districts covers the most area, has been a driver for development as enrollment has

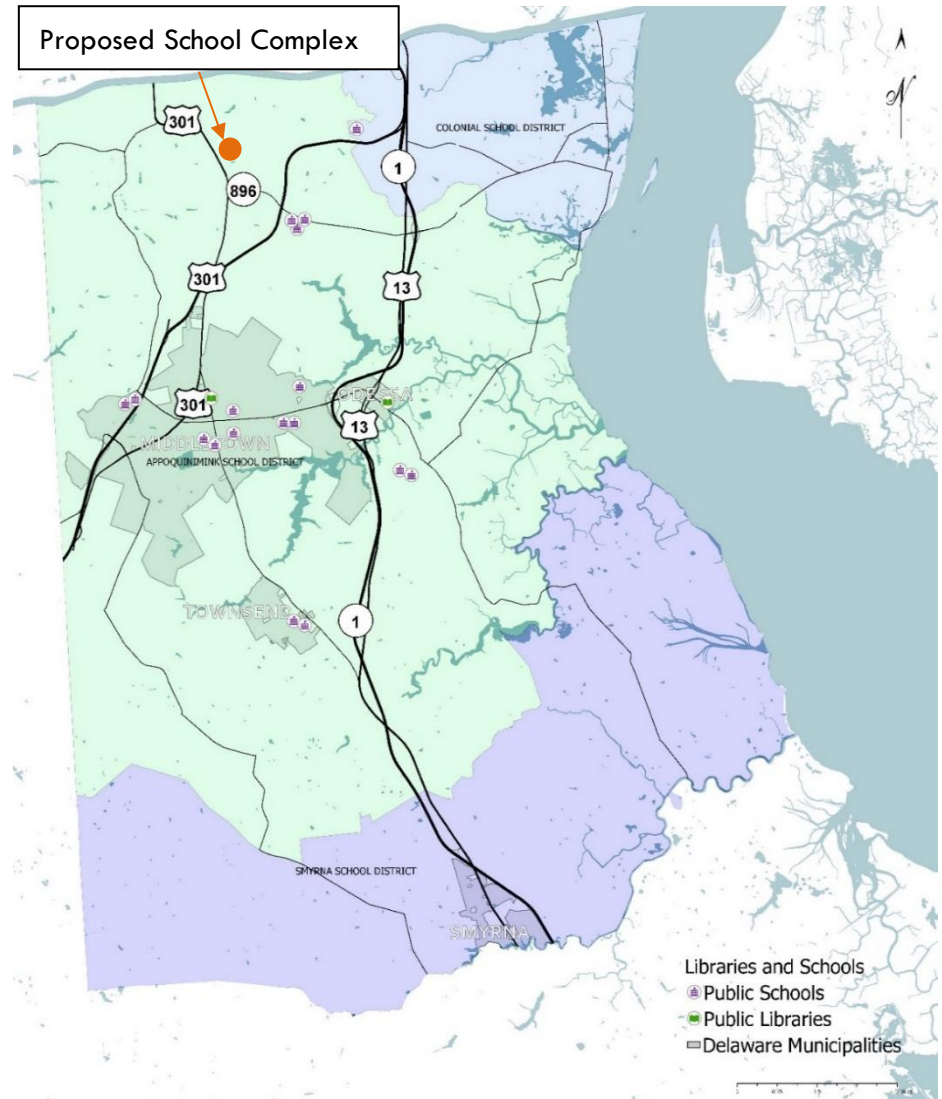


Figure 4-9: Libraries, Schools, and School Districts

increased by 19 percent between 2014 and 2019.<sup>11</sup> In addition, the Appoquinimink School District is planning a K-12 school complex located on Summit Bridge Road. While public schools are operated independently from the County by the school districts, it is imperative that the school districts, State, and County work together for sustainable future growth. A consequence of not doing so, as the school age population may increase or decrease over time, can result in an incongruity in the number of students and school facilities. There are additionally, five private schools in the planning area. There are no higher education facilities currently located in Southern New Castle County. This could be important in future efforts to expand the job base, diversify industries, and provide access to more training/educational opportunities.

## **LIBRARIES AND COMMUNITY CENTERS**

There are two libraries located in unincorporated southern New Castle County, the Corbit-Calloway Memorial Library in Odessa and the Appoquinimink Community Library in Middletown. New Castle County plans to open in 2022 a new 26,300 square foot library facility at the corner of Main Street and Catherine Street in Middletown, which will replace the existing Appoquinimink Community Library. In addition, the planned Duck Creek Library in Smyrna, will replace the existing Smyrna Public Library. The 25,000 square foot library will serve the southernmost area of the County.

Located in the heart of Middletown, the Middletown-Odessa-Townsend Senior Center is a non-profit, non-residential community center serving adults age 50 and older. The Mamie A. Warren Senior Center provides similar services nearby in Smyrna (Kent County). Several private, senior, assisted, and age-restricted living facilities are also located throughout the planning area. With many seniors living in the planning area with a desire to age-in-place, it is important to ensure easy access to health care facilities including providing alternatives to driving, including public transit, paratransit, and ride-sharing. Figure 4-9 shows the locations of public schools and public libraries within southern NCC.

## **PUBLIC SAFETY, EMERGENCY AND MEDICAL SERVICES**

New Castle County provides most emergency services in southern New Castle County, including police, paramedic, and 911 communications. Fire protection and basic life support EMS is provided by volunteer fire companies. Emergency management services are provided by New Castle County and the State of Delaware. Figure 4-10 shows the locations of public safety facilities within southern New Castle County.

New Castle County provides police services to the unincorporated areas of Southern New Castle County along with the Delaware State Police. This is done through long standing agreements that are designed to provide efficient use of resources. Additionally the County also provides police service to the town of Odessa. The Town of Middletown has their own police force. All law enforcement agencies work collaboratively in providing police services to this geographical area.

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<sup>11</sup> <https://www.delawareonline.com/story/news/2019/12/17/appoquinimink-referendum-passes-funding-school-repairs-and-construction/4411181002/>

There are currently two paramedic stations in the planning area. Paramedic Station #10 is located within Odessa Fire Company Station #4 between Route 13 and Route 1 on Boyds Corner Road and Paramedic Station #5, which is currently being renovated and expanded, is located in Middletown on Broad Street.

There are six fire stations in the planning area, three of which are in unincorporated New Castle County. The Volunteer Hose Company Station 1 is located off DE 896 on Churchtown Road, the Odessa Fire Company Station 4 is located on Boyds Corner Road, and Port Penn Fire Company Station #29 is located on Market Street in Port Penn. The Volunteer Hose Station #27 is located in Middletown, and the Odessa Fire Company Station #24 and Townsend Station #26 are located within Odessa and Townsend, respectively.

There are no full-service hospitals in the planning area, however Christiana Care operates a standalone emergency department in Middletown. The facility is limited in capacity and types of treatments it can provide, and often requires patients to be transported to full-service hospitals. Patients needing more advanced medical treatment, must travel to area hospitals, including Christiana Care's main campus in Newark, Bayhealth Hospital in Dover, and Union Hospital in Elkton, Maryland. The travel distance from southern New Castle County to full-service hospitals is an area of concern.

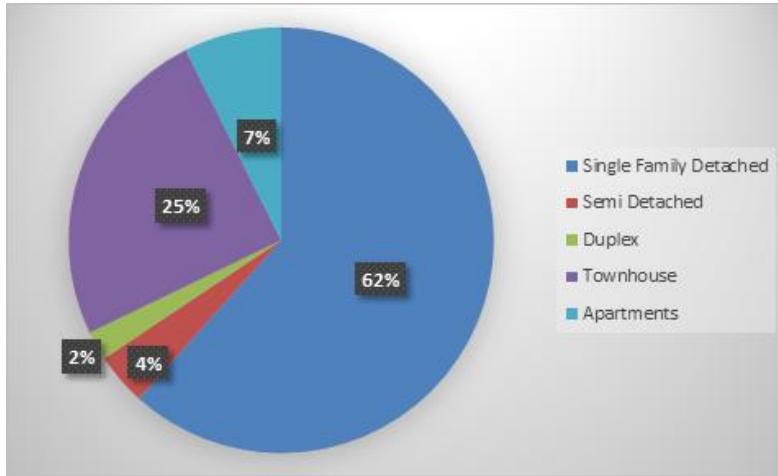
The New Castle County Office of Emergency Management and the Delaware Emergency Management Agency are charged with preparing New Castle County and the public to manage activities before, during, and after the impact of natural and technological disasters.

Figure 4-10: Police Stations, Paramedic Stations, Fire Stations

## HOUSING

Southern New Castle County's housing stock consists of nearly 80 percent single-family detached homes according to 2017 American Community Survey (ACS) data. Over 88 percent of housing units are owner occupied and 12 percent are renter occupied. In addition, the housing stock is relatively new. Many housing units were built within the past 20 years, with 39 percent of the housing units in southern New Castle County built between 2000 and 2009. Moreover, 44% of residents moved into their current home during the same timeframe. Approximately two-thirds of the residential units that were recorded in the last 20 years are single family detached (5,492). Figure 4-11 reflects the percentages of different types of residential units recorded since 1998, including 352 semi-detached, 198 duplex, 2044 townhouse, and 660 apartment units. The majority of these units are located in the central core.

In 2019, the southern New Castle County planning area had an estimated 20,213 households, including unincorporated and municipal areas. The planning area household total is forecasted to grow by 11,138 new households to 31,351 by 2050. As of June 2019, comparing recorded plans with building permits and assessment data, there are 11,486 unbuilt lots within recorded developments in the planning area. If all property owners were to take advantage of development rights, the planning area could have between about 12,000 and 17,000 houses more than what is currently forecasted for the area.



**Figure 4-11: Breakdown (%) of Subdivision Residential Types Since 1998 (Source: New Castle County)**

In order to ensure housing affordability, in unincorporated New Castle County new residential land development plans that propose more than 25 units and require a rezoning or have been approved for an increase in allowable density as the result of a variance are required to provide moderately priced dwelling units (MPDU). People who earn less than 75 to 90 percent of the median area income as determined by the U.S. Department of Housing and Urban Development (HUD) are eligible to apply for a MPDU. In southern New Castle County there are currently 216 approved MPDUs, of which, 141 are built and occupied. These units are located within the Village of Bayberry North, Goldsborough Farm, High Hook Farms, Ponds of Odessa, and the Preserve at Robinson Farm. MPDUs are required to be dispersed throughout the subdivision and must match the appearance of none-MPDU units.

## ***Resources***

### **HISTORIC**

Prior to 1700, structures were primarily of an impermanent nature and constructed with non-durable building techniques such as earthfast construction. Settlement and population intensified from the mid-eighteenth century through 1770s, particularly in town centers such as Port Penn and Odessa, which were located along waterways that provided easy access to ships and trade routes in the region. The growth of these coastal towns in the mid-1700s led to both prosperity and the establishment of an economically-defined social class system in which both elite landowners and tenant farmers were a part. The Georgian architectural style was one of the most prominent building types commissioned by the upper class.

Settlement patterns shifted towards the end of the eighteenth century and into the early nineteenth century, as the dependence of inland waterways for transportation shifted to increased dependence on roadways. Population increased around a defined network of roads linking northern New Castle County to the new state capitol in Dover. The completion of the Chesapeake and Delaware Canal in 1829 provided for increased trade between Philadelphia, Baltimore, and Wilmington. Industrialization and scientific developments in agricultural practices also expanded in the late 1700s through the 1830s, as a



new class of farmers emerged who enhanced agricultural practices and contractual labor relationships in southern New Castle County. Known as the Rural Elite, this group of wealthy farmers constructed dwellings comprised of more durable materials such as brick, some of which remain on the landscape today. Tenancy farming increased during this time over the use of slave labor, as it was mutually beneficial method of land management for residents and large landowners in the region.

As new transportation routes were constructed across the region and state in the mid to late nineteenth century (1830's-1880's), population centers began to grow. The construction of a railroad system connecting Wilmington with Middletown and Dover spurred the growth of towns around railroad stops. During this time, a number of existing farm buildings and dwellings on the rural landscape were repaired or renewed and comprise many of the extant historic resources in Southern New Castle County today.

Southern New Castle County has a rich heritage that contributes to its desirability as a place to live and visit. There are currently over 650 National Register resources in Southern New Castle County (individually listed and/or contributing to a National Register Historic District), six National Register Historic Districts, and two properties with a historic overlay, which is a county level zoning designation. The town centers of Middletown, Odessa, and Townsend are on the National Register and are emblematic of the rural small-town character of southern New Castle County that is valued by many. Over time, particularly in Middletown, suburban development has encroached into the once rural surrounding areas. In addition, the Port Penn Historic District, which is located in unincorporated New Castle County along the Delaware River, is a small village that remained rural in the surrounding area. Other historic properties are dispersed throughout the planning area, particularly older farmsteads and houses. Development pressure may pose a threat to historic properties as old farms are sought to be developed. Therefore, the county is working on a comprehensive update for historic preservation provisions in the county code. An important component of the proposed update is to incentivize historic preservation, particularly the adaptive reuse provisions. This will facilitate the continued use and preservation of historic properties, as pressure for development continues over time.

## **ENVIRONMENT**

Southern New Castle County is enriched with important environmental and agricultural resources that shape the region and make it a highly desirable place to live and play. Unfortunately, continued development pressure poses a threat to these very resources that attract many to the area. The southern New

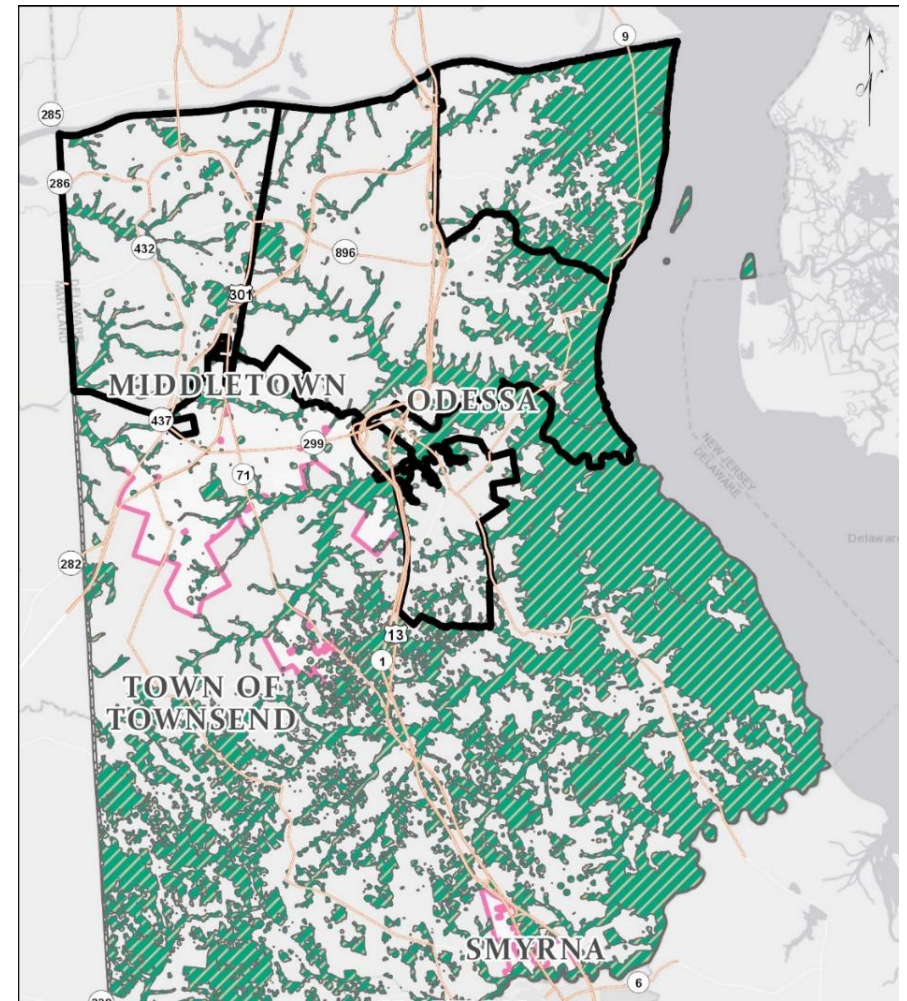
Castle County planning area has an abundance of environmental resources, some are key to maintaining natural habitats while others are key to maintaining an abundant and clean source of drinking water. A healthy environment supports recreational activities like fishing, hunting, or bird watching. Environmental resources in southern New Castle County include flood plains, wetlands, forests, and Water Resource Protection Areas. Strategies to protect the resources include programs to purchase development rights or full fee simple purchase of lands through public, private, and combined funding sources. The details on how these resources are protected are outlined below.

### County Level Environmental Protections

In addition to federal and state protections, the UDC includes protections for floodplains, wetlands, forests, Water Resource Protection Areas (WRPA), and wellheads. The County based its environmental protections on the former state resource areas (SRAs), which were designated as a part of the implementation of the 1990 Delaware Land Protection Act. SRAs, comprised of some of Delaware's most environmentally valuable undeveloped lands, include parks, natural areas, conservation areas, certain wetlands, forests, cultural and geological resource areas. Figure 4-12 shows environmentally protected land.

### Flood Plains

Flood plains are any land susceptible to being inundated by water from any source. These areas are subject to a one percent chance of flooding in any given year. Flood plains are primarily located adjacent to rivers, streams and other water bodies. While many floodplains are mapped by FEMA, not all are; those not mapped are considered nondelineated floodplains. Based on their ecological value and the risk of flooding, flood plains have a 100 percent protection level in the UDC, which means they cannot be disturbed and must remain in their natural state, regardless of whether they are mapped by FEMA or nondelineated. In addition to this, when a land development application is reviewed for land adjacent to and within the flood plain area, a riparian buffer area is established that includes: all the floodplain, plus an additional 50 feet of adjacent land 100 feet on either side of perennial and intermittent streams and lakes.



**Figure 4-12: Environmentally Protected Land**  
(includes: wetlands, floodplains, WRPA & class A wellheads, Critical Natural Areas, sea level rise, and prime soils)

## Wetlands (tidal and nontidal)

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions; or areas that are defined and delineated in accordance with the U.S. Army Corps of Engineers guidelines, the U.S. Environmental Protection Agency, or DNREC. Tidal wetlands correlate with the existence of streams and drainageways associated with the Delaware River, while nontidal wetlands tend to be inland and are freshwater. All wetlands are important for maintaining water quality, reducing the impact of storm runoff and flooding, and providing habitat for wildlife. Therefore, wetlands, like floodplains, have a 100 percent protection level in the UDC. In addition, when a land development application is reviewed for land adjacent to and/or within the wetland area, a riparian buffer area is established that includes all of a nontidal wetland greater than 20,000 square feet, plus an additional 50 feet of adjacent land and 100 feet on adjacent to tidal wetlands.

## Forests

The UDC defines forests as areas of one acre or more, covered by a canopy of trees that have a trunk measurement of at least 6 inches at 4.5 feet above ground level. These do not include areas specifically kept or grown for commercial purposes. Forests provide scenic beauty and habitats for wildlife, and absorb heat and air pollution. Forests may also overlap with other protected resources such as wetlands or floodplains, for which they can act as a form of erosion control and improve water quality. As such, forests in New Castle County are protected at a range of levels from 20 to 85 percent depending on its age, uniqueness and zoning district. New Castle County and DNREC are currently developing a methodology for assessing forest habitat value. This assessment will determine the health and longevity of forest systems and serve as the basis for enhancement and protection standards for forests. The forested areas containing the highest habitat value, as determined by the Forest Habitat Value Assessment, shall be given the maximum priority for preservation.

## Water Resource Protection Areas

Water Resource Protection Areas (WRPA) are areas that are designated to protect drinking water and/or have favorable features for groundwater recharge. Water Resource Protection Areas are purely subterranean and include wellhead and recharge areas. Wellhead Protection Areas are surface and subsurface areas surrounding public water supply wells or wellfields, where the quantity or quality of groundwater moving towards these wells or wellfields may be adversely affected by land use activity. Recharge WRPAs are areas designated as having the best potential for groundwater recharge. Such areas typically are in close proximity to surface waters and areas of highly permeable geologic deposits. The UDC limits disturbance, such as the construction of buildings or pavement, to 50 percent of recharge areas, Class B and C Wellheads. Impervious cover is limited to 20 percent within those areas. Class A Wellheads are 100 percent protected from disturbance and impervious cover is limited to the building and access associated with the well, distribution, treatment facilities and their maintenance.



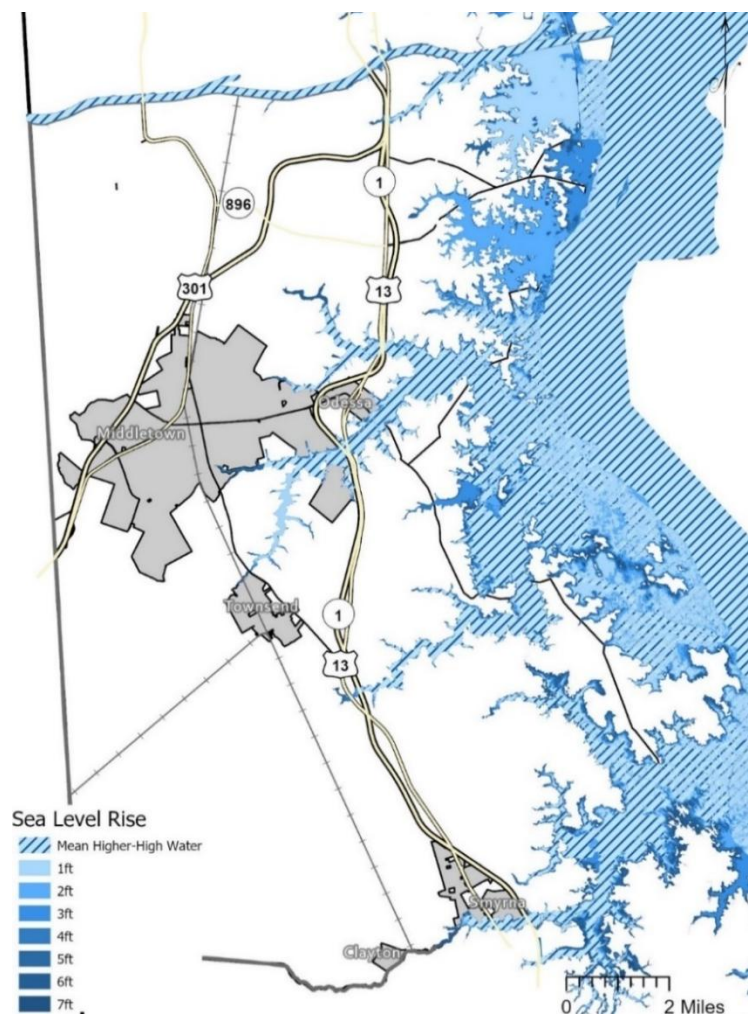


Figure 4-13: Sea Level Rise

## Climate Change

Given New Castle County's location along Delaware River and associated waterways and the adverse impact of sea level rise associated with climate change, southern New Castle County will likely be most impacted by sea level rise. Land adjacent to the Delaware River in the eastern wing, due to its flat topography, and low mean elevation will be most susceptible to inundation. Delaware statewide sea level rise planning outlines three potential scenarios corresponding to increases of mean sea elevation by the year 2100 including levels of : 1.53 m / 5.02 ft (high scenario), 0.99 m / 3.25 ft (intermediate scenario), and 0.52 M / 1.71 ft (low scenario).<sup>12</sup> While much of this land is protected by existing provisions in the Unified Development Code (Table 40.10.010) and through existing conservation easements, the County must continue to evaluate and implement effective land use policies minimizing the impacts on residents in impacted areas. In addition to the land use implications of sea level rise, the potential impact on infrastructure such as roadways, will be particularly significant in the east wing (see WILMAPCO SLR Transportation Vulnerability report).<sup>13</sup>

## AGRICULTURE

Historically, agriculture has constituted a significant percentage of the land use and economy in Southern New Castle County due to the abundance of prime agricultural soils. Large expanses of farmland have covered the landscape and coexisted with small towns such as Townsend and Odessa. The picturesque landscape and available affordable land have attracted significant development since the early 1990s in both unincorporated and incorporated areas, threatening the viability of large-scale farming, among other things. In addition, many farmers view their land as their only source of retirement funding, especially when there is no family intention to continue farming as an employment strategy. This is a major challenge to farmland preservation. The County estimates that between 2002 and 2017, about 5 percent of high-quality agricultural land, defined by its prime soils, in the unincorporated area has

<sup>12</sup> <https://www.dgs.udel.edu/datasets/delaware-coastal-inundation-maps>

<sup>13</sup> [http://wilmapco.org/SLR/files/WILMAPCO\\_SLR\\_2020\\_DataReport.pdf](http://wilmapco.org/SLR/files/WILMAPCO_SLR_2020_DataReport.pdf)

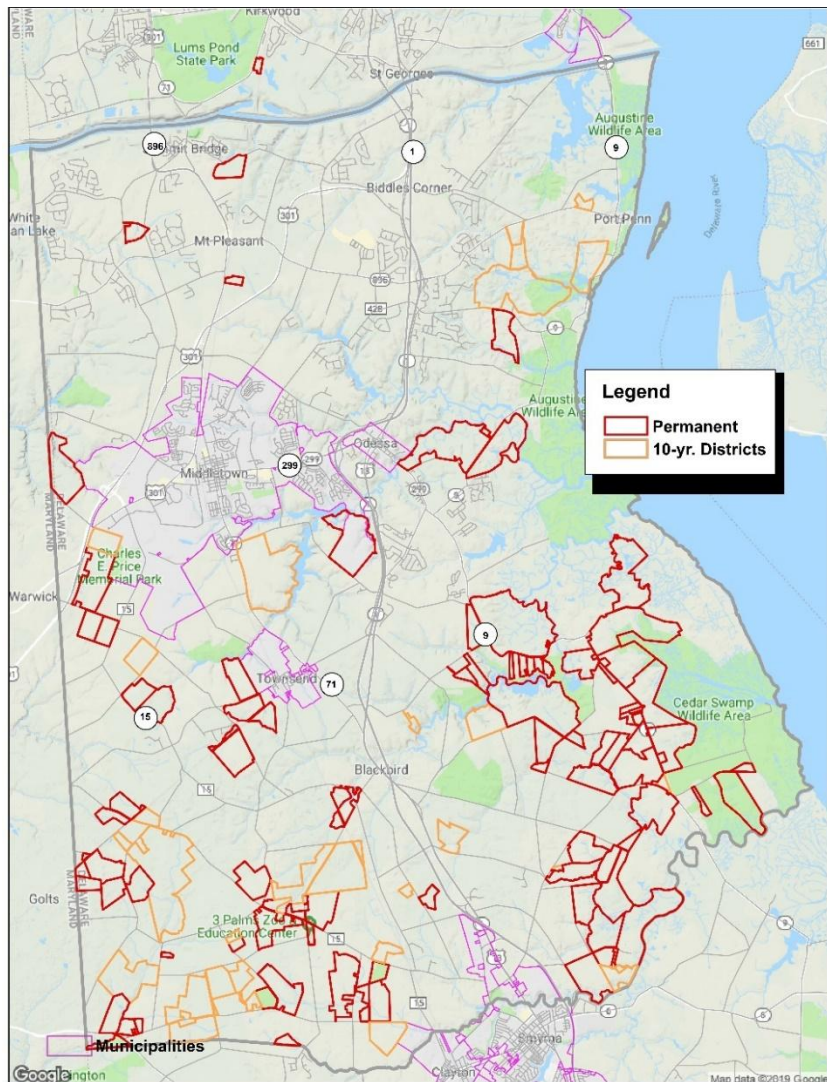


Figure 4-14: Agriculture Easements

<sup>14</sup> <https://agriculture.delaware.gov/agland-preservation-planning/the-preservation-program/> (accessed 3/3/20)

been consumed by residential development. According to the USDA, in 2020, the county has just under 68,000 acres of undeveloped prime agricultural soils. It is culturally and economically important that future land use planning for the area balance the impact of development with preservation of agricultural land.

### Agricultural Protection Efforts

New Castle County and the State of Delaware have offered a number of tools to encourage agricultural land preservation with the goal of maintaining the viability of farms. At times the County and State partner on preservation easements, other times, each government acquires its own. The Department of Agriculture Land Preservation Foundation (DALPF) was established in 1991, creating a two-phase voluntary approach towards preservation. The first phase, which does not include any payment to the landowner, is for the farmer to establish an Agricultural Preservation District. This is a ten-year, voluntary agreement where landowners agree to continue to use their land solely for agricultural purposes. In phase two, farmers have the opportunity to pursue the establishment of an agricultural conservation easement, by submitting a bid to sell their farm’s development rights the year after they enroll their farm into a District Agreement. Landowners bid against each other by offering a discount from the appraised development rights’ value of their property.<sup>14</sup> To date the State program has preserved more than 13,000 acres of farmland in New Castle County.

At the County level, there are provisions in the UDC for Transfer of Development Rights (TDR). The development rights of suburban or suburban reserve zoned land may be transferred to concentrate development on another parcel. However, the transfer must occur within the same planning district, which are designated by the State. The program in its current form has not been widely used and the geographic limitations appear to be a hindrance to achieving necessary market balance for success.

In addition, New Castle County established a volunteer farmland preservation program in 2003 to purchase easements that restrict the subdivision of land, and in 2006 began a partnership with DALPF by donating County funds for farmland preservation on a one-to-one matching basis (no longer the policy). The County currently holds approximately 940 acres of agricultural easements and in partnership with DALPF another 13,000 acres have been placed into easements. While the County program is no longer in effect, the County initiated a Land Preservation Task Force in 2019 to examine ways to protect open space and agricultural land. The recommendations of Land Preservation Task Force will inform the county's future agricultural preservation efforts.

### Priority Natural Resource Areas and Agricultural Areas

There are environmentally significant areas and natural resources throughout the study area, with many concentrated along the Delaware River and south of Middletown, Odessa, and Townsend. Some of those lands are preserved or otherwise protected by the County's environmental standards, but a nontrivial amount of farm land, open space, and resources could be developed. While valuable independently, the benefits of these lands and resources are significantly greater when not fragmented. Strategic planning and targeting for preservation is important for maintaining the greatest public benefit.

A careful comparison of resource protection mapping evaluated the following resources: prime agricultural soils, identified Critical Natural Areas, Water Resource Protection Areas, floodplain, wetland, riparian areas, and impacts of sea level rise (1 m / 3.25 ft coastal areas). This mapping was then compared with mapped sewer service areas (proposed identified for this study), public lands (including easements), and areas of unsuitable soils (necessitates low density for septic systems). A synthesis of these components resulted in the identification of distinct areas most appropriate for natural resource protection and agricultural production.

The resulting mapping identifies Priority Natural Resource Areas (areas comprised of Critical Natural Areas, select Water Resource Protection Areas, floodplain, wetland, riparian areas, impacts of sea level rise, select public lands, areas of unsuitable soils, and areas outside projected sewer service areas) and Agricultural Areas (areas comprised of prime agricultural soils and select Water Resource Protection Areas, public lands (including easements) (see Figure 4-15).

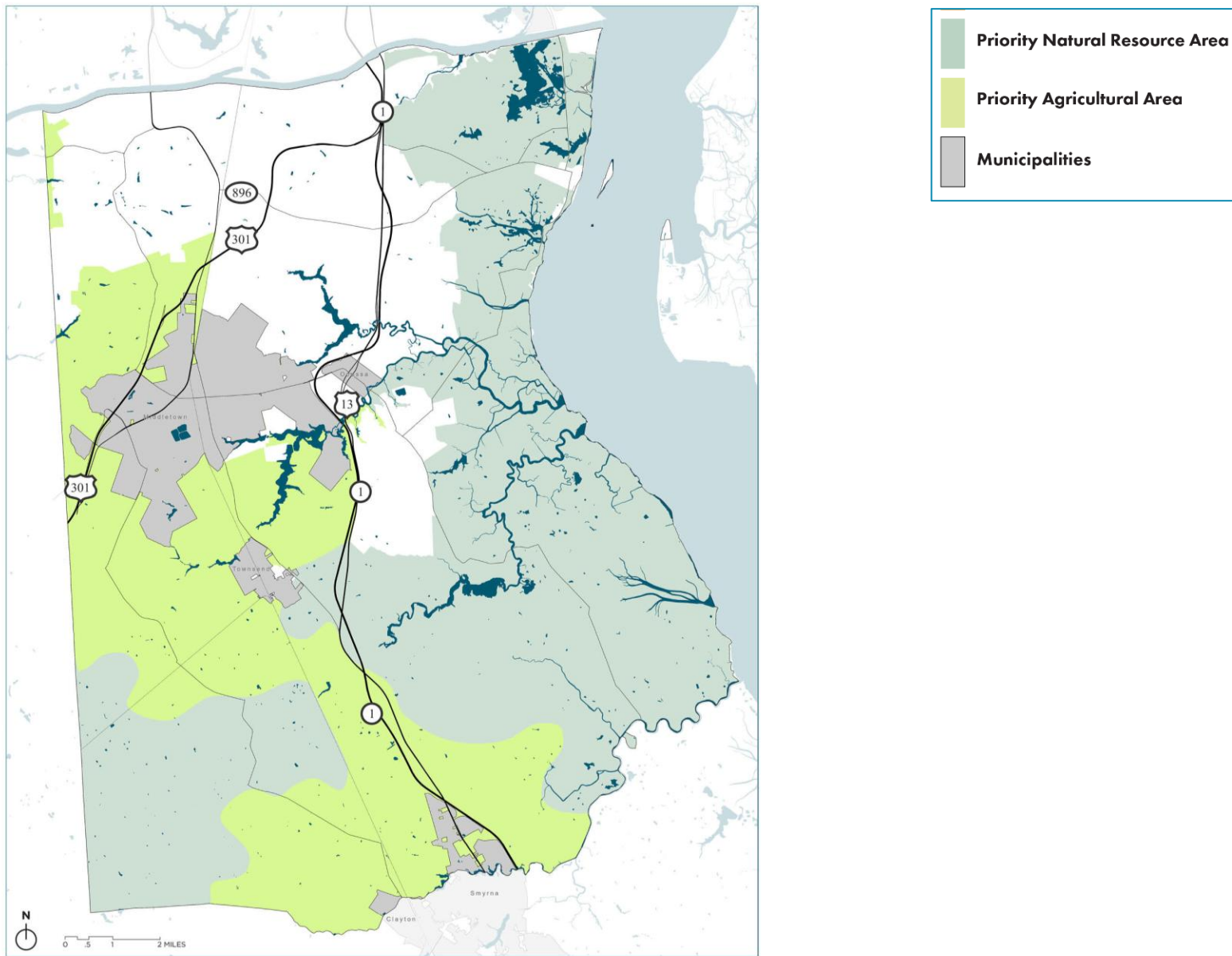


Figure 4-15: Priority Natural Resource Areas



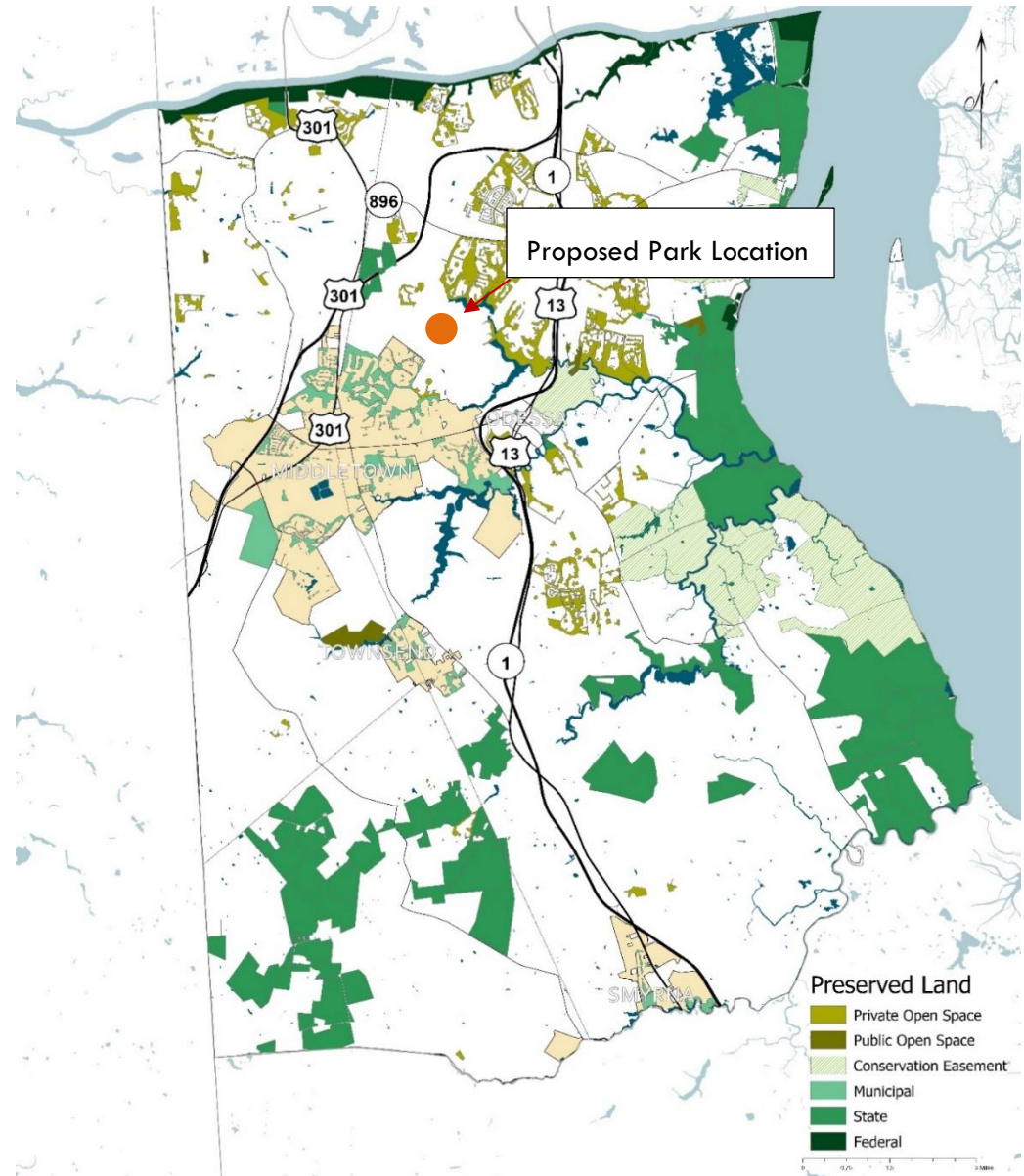
## PARKS & RECREATION

Historically, New Castle County's approach to parks and recreation has focused heavily on active recreation—providing and maintaining the space and facilities where the recreational use generally involves physical activities, such as organized sports and structured play areas. However, providing for a range of recreational opportunities, including passive recreation such as birding and walking, is also important. As southern New Castle County has developed and become home to significantly more people than in the past, access to recreational facilities and a provision for a wider range of activities has become more critical.

Compared to the northern portion of the County, southern New Castle County lacks in County-owned parkland. While the UDC requires open space for major subdivisions, these spaces are privately owned and maintained and may only be open to residents of the particular subdivision; as such, there is a need for public parks open to the general public. According to the *New Castle County Long Range Park Acquisition and Development Plan* from 2017, the area will need eight additional neighborhood parks and 1¾ additional district parks and regional/reserve parks. Neighborhood parks are generally between ½ acre and 30 acres, district parks are 25 to 75 acres, and regional/reserve parks are between 75 and 200 acres. Currently, there are only two County parks within unincorporated southern New Castle County: Wiggins Mill and Back Creek. These district parks are only parkland holdings, meaning they provide open space but have not been formally developed or programmed with park equipment, but will likely in the future. A third park is planned for the east side of Shallcross Lake Road north of Marl Pit Road (shown in Figure 4-16). This park is considered a sub-regional park and will be around 80 acres. This park was planned with the help of the county's Parks Task Force. In 2017 the County Executive formed the Parks Task Force for the purpose of, among other things, identifying a location and planning for a new park in southern New Castle County.

The State of Delaware owns three parks in southern New Castle County: Blackbird State Forest, Cedar Swamp Wildlife Area, and Augustine Wildlife Area. While these parks function primarily as a

Figure 4-16: Preserved Land



means of land conservation and habitat preservation and are not intended for active recreation, they host passive recreation, such as walking trails or bird watching. While there are trails along the north side of the C & D Canal, the C & D Wildlife Area located in the planning area is federal land.

The Statewide Comprehensive Outdoor Recreation Plan (SCORP) outlines the State's planning and policy for parks and trail facilities throughout the State, with funding tied to the Strategies for State Policies and Spending Map. The SCORP defines planning regions; the planning area is located within Statewide Region 2, which also contains portions of the County north of the C & D Canal, south of the City of Newark. Around 17% of the State's publicly accessible outdoor recreation and conservation lands are within District 2 (including local, County, State, and Federal public lands). Approximately 15% of the population lives within a 1-mile drive of a park, 45% within a 3-mile drive, and 65% within a 5-mile drive. Therefore, this indicates that 35% of the population of the planning area lives somewhere further than a 5-mile drive from any public parks.

The County, along with the State, WILMAPCO, and other organizations such as Delaware Greenways, has worked to expand the trail network within New Castle County, including in the southern New Castle County planning area. However, at this point in time there is no extensive trail network in Southern New Castle County. In addition to recreation, trails provide other opportunities. The expansion of a trails system provides the opportunity to enhance connections to parks, as well as other destinations, and they can be integrated into the larger transportation system.

Recent planning efforts are strengthening the trail network in the County. In 2017, DelDOT prepared the Blueprint for a Bicycle-Friendly Delaware, a statewide bicycle policy plan. The Blueprint outlines strategies for maintaining, expanding, and funding Delaware's bicycle infrastructure, including trails; it calls for locally generated trail master planning. In 2018, WILMAPCO prepared the *New Castle County Bicycle Plan*, which was adopted by the WILMAPCO Council in May 2020. For more information see Bicycle and Pedestrian Facilities on page 21.

## SCENIC ROADS

Historic and scenic roads that formed southern New Castle County's early transportation network are part of what contributes to the area's heritage and character. While such roads change over time, they often become part of and contribute to a community's "sense of place." Such is the case with the network of scenic roads identified in two studies: the 2008 *Southern New Castle County Scenic River and Highway Study* and the 2013 *Delaware's Bayshore Byway Corridor Management Plan*. The 2008 study evaluated the whole of Southern New Castle County's road network in the context of the National Scenic Byways' Program and its criteria for scenic roads designation in the FHWA publication, *Scenic Byways*. Roads were evaluated for their scale and size, characteristics such as terrain and topography, the existence of scenic visual accents and vista points, natural resources and habitat, and recreation along or adjacent to the roads. The result was a network of 43 identified scenic road segments suitable for nomination under the State of Delaware Scenic Byways Program and the National Scenic Byways Program. The Bayshore Byway built on the 2008 study to further evaluate and nominate for designation a portion of Rt. 9 in New Castle County from the City of New Castle to its junction with State Route 1 east of the City of Dover and onward to the City of Lewes, approximately 100 miles. This corridor offers exposure to the largest preserved coastal marshlands and historic river towns along the east coast, including a variety of wildlife and bird migratory flyway zones & resting areas. Figure 4-17 shows scenic roads in the planning area.

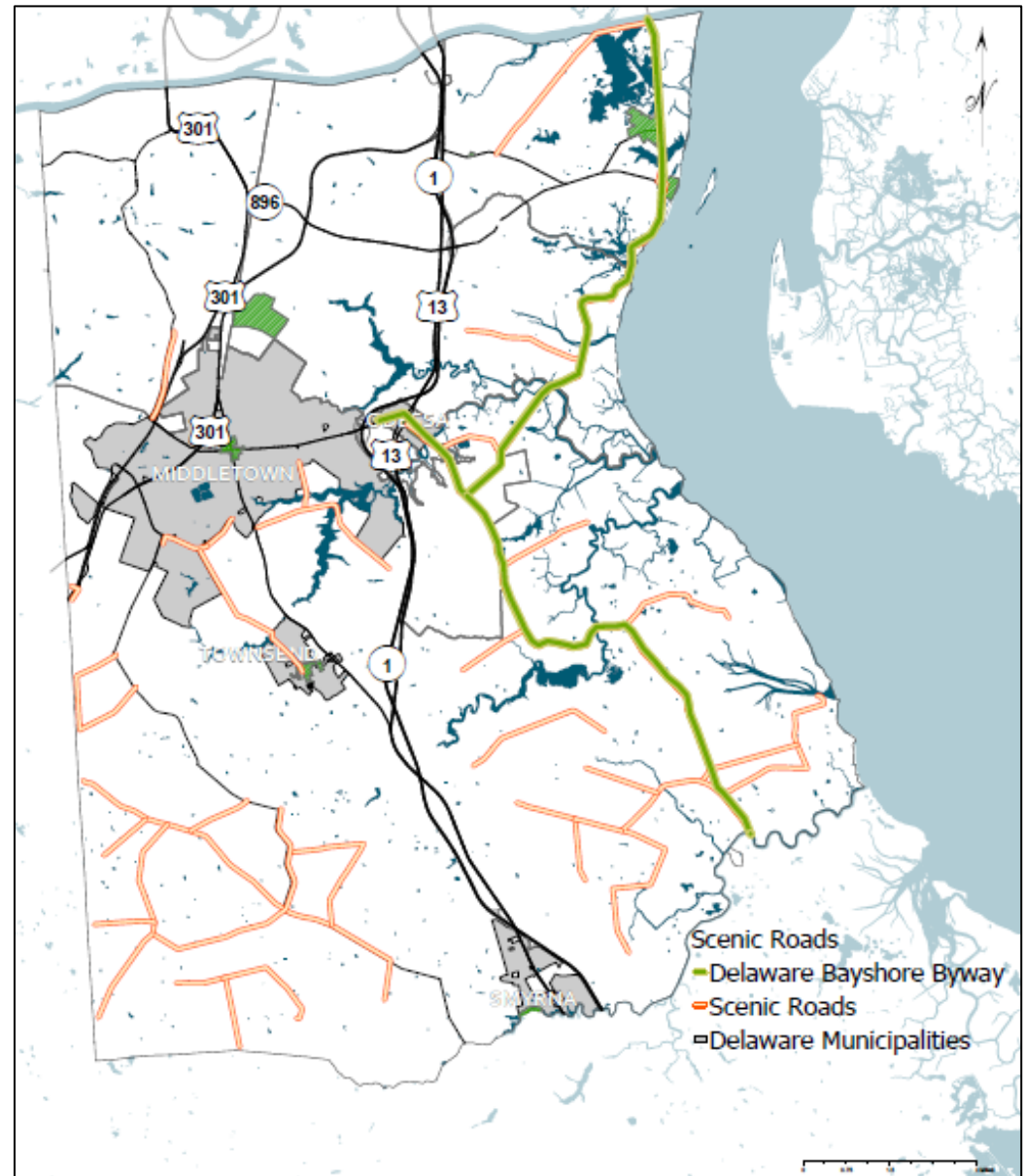


Figure 4-17: Scenic Roads



## 5. Community Vision, Goals & Objectives

The southern New Castle County community has been involved in developing goals and objectives for the plan since the early stages of the planning process. The public informational kick-off meeting occurred on October 17, 2018 and entailed a project overview presentation, followed by preliminary baseline information and simple mapping activities. Visioning workshops took place in early 2019 in both Odessa and Middletown. The project's Advisory Committee was engaged throughout this process to review draft materials and provide feedback.

During the visioning workshops, participants first watched a presentation providing an overview of the project background and summarizing existing conditions. Then, working in facilitated small groups of about 8-10 people, participants walked through a series of questions meant to provide the project team with community input related to issues related to five categories:

- Environment
- Quality of Life / Health
- Community Character / Development Patterns
- Transportation
- Economy / Jobs

Each group had a notetaker recording the top 1-2 issues provided by each person in each topic area. Participants also individually provided feedback on a group activity worksheet. After each topic-area discussion, the project team gathered a summary sheet with the comments and compiled the results. Following all discussions, each person reviewed the compiled list of concerns from all tables (provided on the presentation screen) and provided their “vote” for which of the issues they believed to be most important in each category. This allowed the project team to get a sense of prioritization of the issues. There were 106 group activity worksheets submitted after the workshop in Odessa and 24 in Middletown.





A web-based MetroQuest survey was also used to extend engagement in the visioning process beyond the in-person options, with a similar set of issue-identification and prioritization questions (see Figure 5-1). There were 217 responses to the MetroQuest survey. Based on the community's input, the project team developed a set of five goals for the project, each with a set of related objectives. The goals, as originally developed and expressed throughout the plan development, are provided in Figure 5-2.<sup>15</sup>

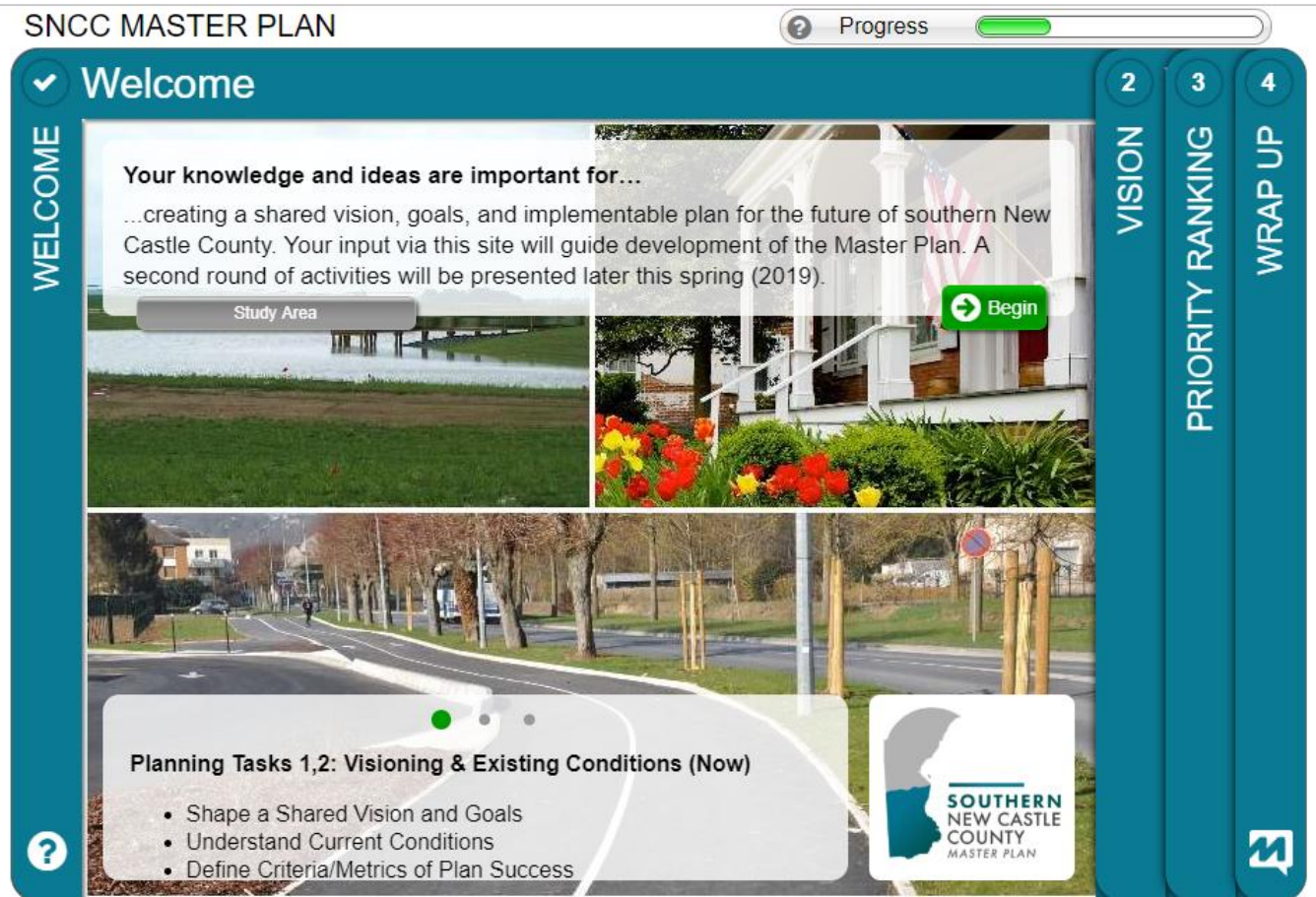
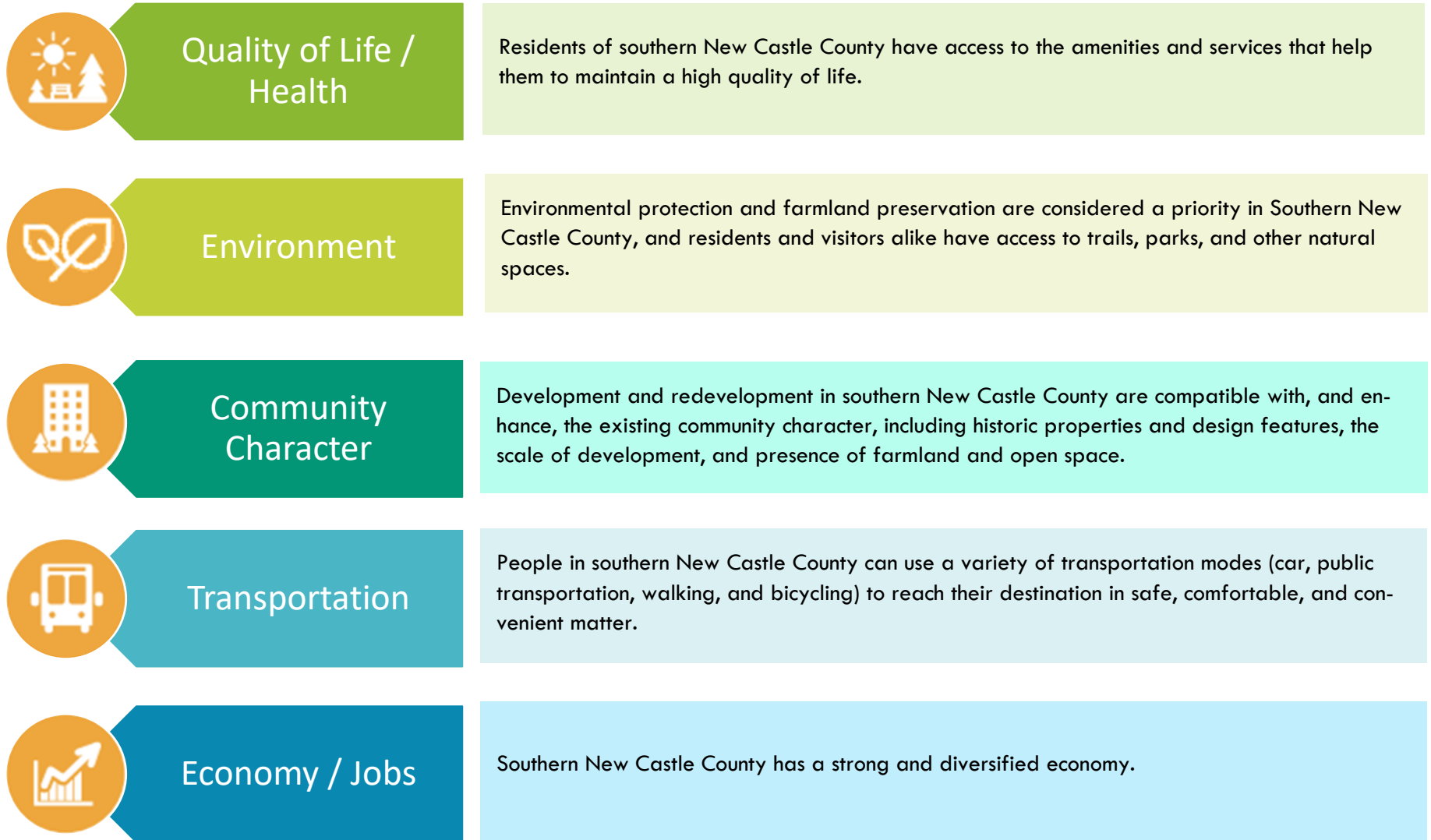


Figure 5-1: MetroQuest Survey

<sup>15</sup> Goals are reworded when presented in the recommendations and implementation matrix to make the statement into a goal, reflecting the desired result.

Figure 5-2: Community Goals



## 6. Scenarios

### Overview

Based on the goals and objectives developed with the community and working within the constraints of existing and projected conditions, the project team devised three initial future land use scenarios. These scenarios present varying conditions related to environmental and agricultural preservation, provision of sewer infrastructure, and assumptions about the location of future growth in households and employment. Growth projections used in these scenarios are from the Delaware Population Consortium (DPC) estimates. Presented to the public in June 2019, the three scenarios were then revised based on input and presented at the “Scenario Analysis and Preliminary Recommendations” workshop in October 2019. The scenarios included three potential futures:

- Scenario 1: As Planned (“Business as Usual”)
- Scenario 2: Planned Growth and Preservation
- Scenario 3: Town Infill Growth and Preservation

It is important to note that not all goals and objectives are related to land use, so therefore are not part of these scenarios. Those goals and objectives, and recommendations to address them, are presented in later sections of this document.


### ***Scenario 1: As Planned (“Business as Usual”)***


Scenario 1 (Figure 6-1) explores continuation of development as it has occurred in the past. Under this scenario, the growth area covers the entire northern portion of southern New Castle County, which, based on the *2012 Comprehensive Development Plan*, would have sewer service in the future. While the areas outside the central core<sup>i</sup> are planned for future sewer service, it is uncertain when and where sewer will go. Current trends suggest that residential development outside the central core is primarily being built on septic systems.

This scenario assumes that the County and municipalities make no land use changes or expansion to sewer infrastructure. The east and west wings will remain Suburban (S) zoned, without sewer, permitting a gross density of either 0.67 dwelling units (d.u.) per acre (Single Family or Single-Family Conservation design) or 0.80 du. per acre (Age-Restricted Single-Family). Although the *2012 Comprehensive Development Plan* depicts the east and west wings on Map Figure 8-9 as sewer service areas, sewer service does not exist in these areas as of the date of this plan. The 2012 Comprehensive plan includes the objective: “Continue efforts to establish a definitive strategy and policy for the provision of sanitary sewerage within the ‘Southern Sewer Service Areas’ south of the Chesapeake & Delaware Canal”, but is not specific on timing and phasing of the extension of sewer services into the east and west wings and does not reference Map Figure 8-9 Sewer Service Areas. For the purpose of a business as usual scenario, it is reasonable to assume future development in the east and west wings will be on individual septic systems. Suburban Reserve (SR) will remain without sewer service, permitting a gross density of up to 0.3 du. per acre (Open Space Subdivision). Since there are no changes proposed, projected households remain as allocated by WILMAPCO, which are based on Delaware Population Consortium (DPC) estimates (see Appendix for more details). The largest increases in households under this scenario are in the core area and Middletown.


## Explanation of Map Categories

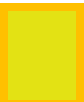
 **Large Planned Developments:** For the Bayberry and Whitehall developments, finer-grained details exist, per recorded plans.

 **Village / Town Center Growth Area:** This scenario includes the mixed-use centers, already recorded, for Bayberry and Whitehall. Buildings are 1-5 stories.

 **Other Growth Areas (Future Sewer Service Areas):** These areas will be largely residential, with some areas of commercial or limited mixed uses.

 **Constrained Areas and Easements:** Areas protected under the New Castle County UDC: Class A Water Resource Protection Areas, Wetlands, Floodplains, Riparian buffer area, Permanently protected lands (public and private)

 **Municipalities:** Growth as projected, including both residential and commercial activity within the municipalities.

 **Existing Sewer Service Area:** Areas currently served by New Castle County sewer service.

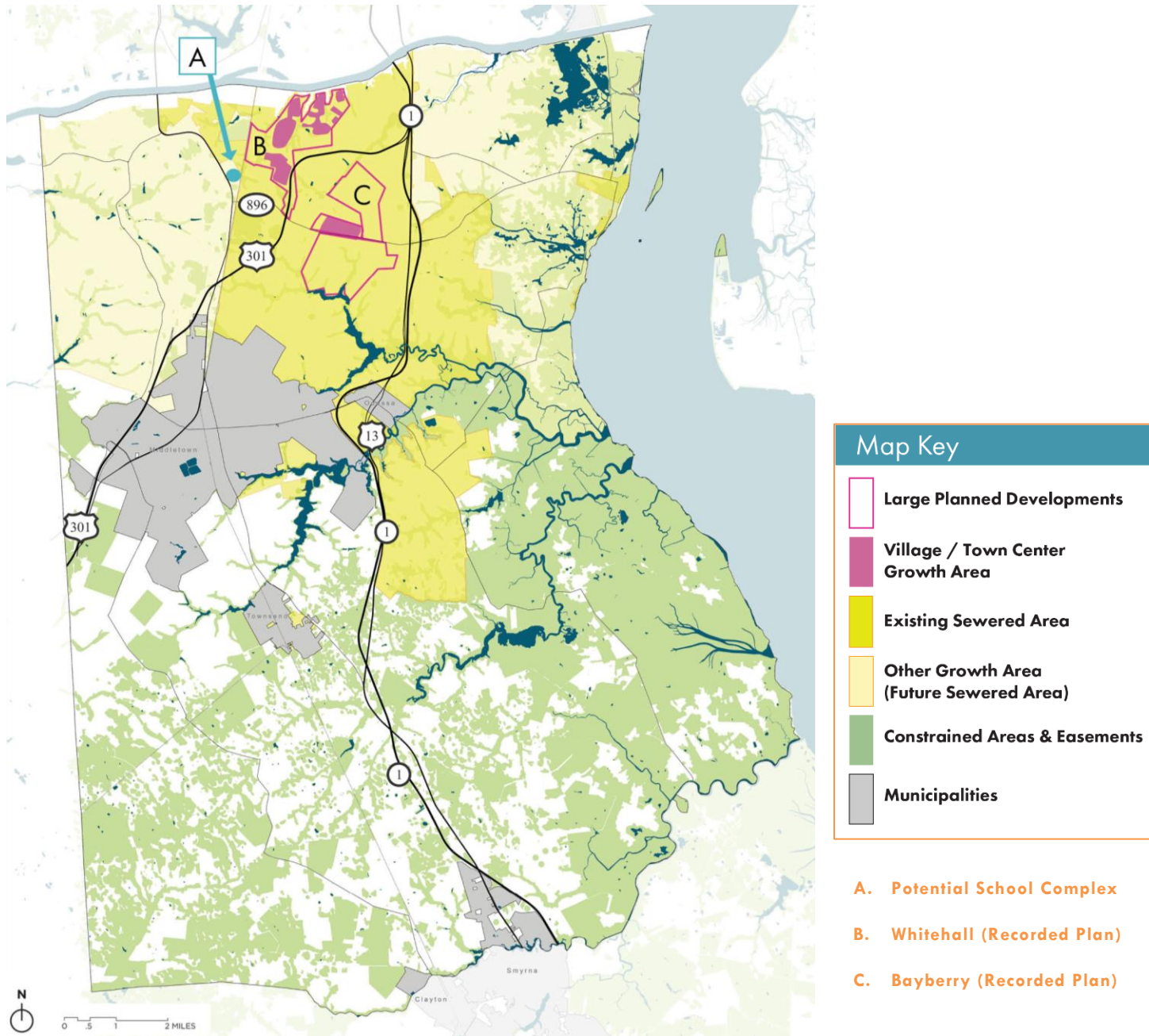










Figure 6-1: Scenario I



## ***Scenario 2: Planned Growth and Preservation***

As explained in the Existing Conditions section, land east of Route 1 and adjacent to the Delaware River has high concentrations of environmental resources and is at risk of inundation resulting from sea level rise. Environmental resources are also concentrated in the southwest section of the planning area. Prime agricultural soils are concentrated in the central and northwestern portions of the planning area. Scenario 2 (Figure 6-2) strives to achieve preservation of these resources and plan objectives. In this scenario, the County would discourage development in, and adjacent to, environmental resources and prime farmland, while providing for future growth.

### Explanation of Map Categories

-  **Large Planned Developments:** For the Bayberry and Whitehall developments, finer-grained details exist, per recorded plans.
-  **Village / Town Center Growth Area:** Consideration of potential enhancements to planned developments at Whitehall and Bayberry to allow for greater levels of activity (residential and commercial development). Mix of housing types, with commercial activity; balance landscape and buildings (2-5 stories).
-  **Corridor Hub Growth Area:** Potential neighborhood centers formed around an amenity, such as a bus park-and-ride, or heavily traveled road. Could include residences as well as commercial (restaurants, shops, services), with buildings up to 2-3 stories.
-  **Other Growth Areas (Future Sewer Service Areas):** Largely residential, with some areas of commercial or limited mixed uses. Reduction in future sewer service area to remove the potential for installing sewer service in environmentally sensitive areas.
-  **Priority Natural Resource Area:** Concentrations of significant natural resources and/or environmentally sensitive lands. Partially protected through ownership, easements, or by County, state, and federal law. Limited development is anticipated; the County's policies and actions are intended to further protect these areas in the future.
-  **Priority Agricultural Area:** Contains the County's best prime agricultural soils and related farming practices. Some development is anticipated; the County's policies and actions are intended to keep these lands in agricultural production.
-  **Municipalities:** Growth as projected, including both residential and commercial activity within the municipalities.
-  **Existing Sewer Service Area:** Areas currently served by New Castle County sewers.

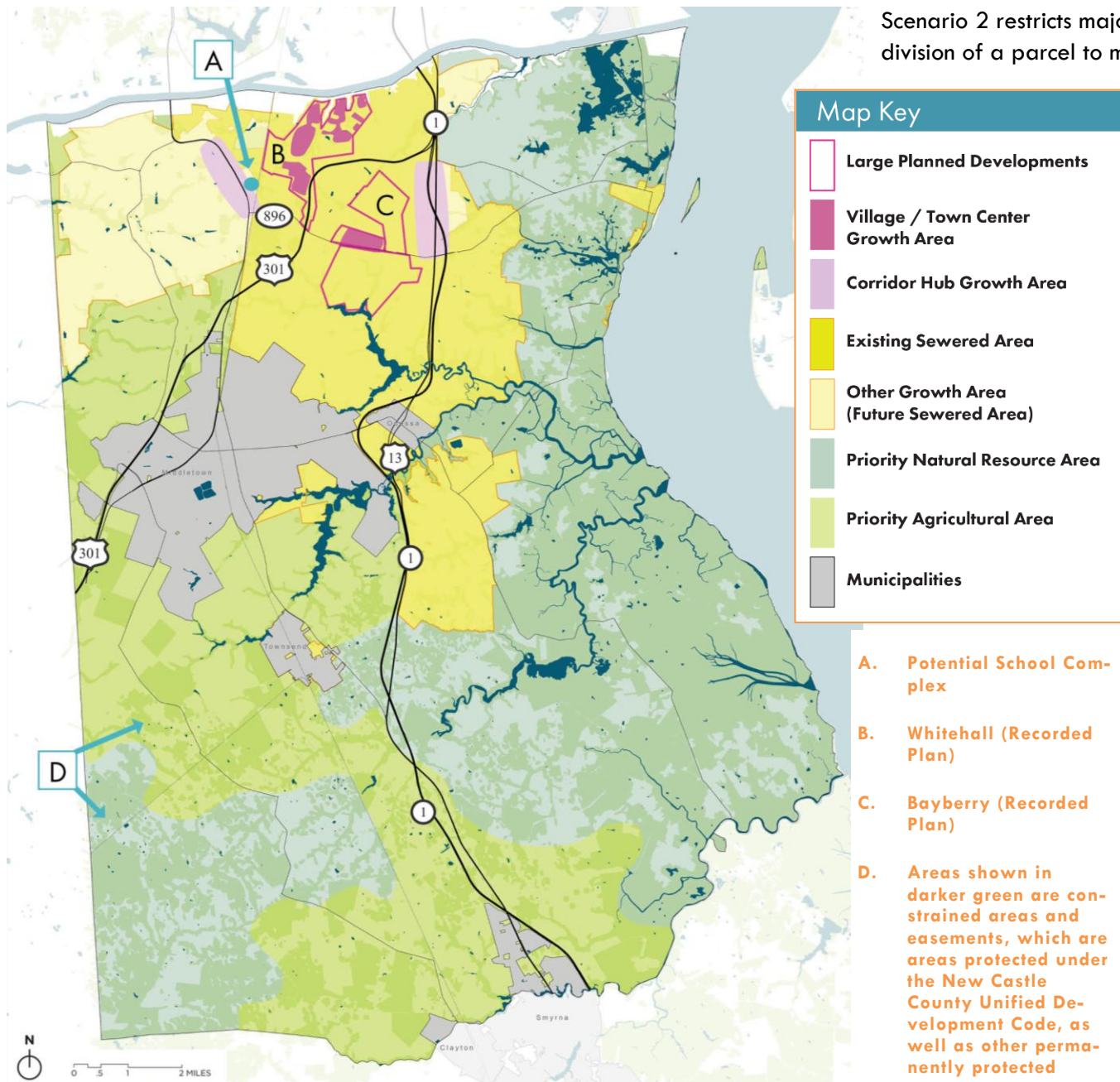


Figure 6-2: Scenario 2

Scenario 2 restricts major residential subdivisions, which means the division of a parcel to more than five lots, to parcels with access to sewer service. This measure simulates the effects of an approach to better manage growth and prevent proliferation of septic systems, particularly in areas of greater development. This scenario facilitates future growth within the scope of this plan's time horizon, through 2050 by expanding sewer service into the upper West Wing, while reducing the development capacity for parcels identified as prime farmland and priority resource areas in the East Wing and Suburban Reserve (SR) zoning district.

Scenario 2 identifies about 7,418 acres as a Future Sewer Area (shown in light yellow), approximately 3,024 acres of which are existing subdivisions with on-lot septic facilities. Existing septic subdivisions would only be provided sewer service should they reach a level of septic system failure that requires such a transition by law. This scenario predicts up to 348 fewer forecasted households in the east wing, which would likely be accommodated in the west wing where development trends suggest there is demand. Since there are no proposed residential land use changes in the central core area, projected households for that area are assumed to remain consistent with WIL-MAPCO growth projections. Scenario 2 also assumes that forecasted growth in municipal areas remains consistent with projections by the Population Consortium.



### ***Scenario 3: Town Infill and Preservation***

Scenario 3 (Figure 6-3) explores a future where additional economic growth is absorbed within the existing municipal boundaries and a larger amount of the total household growth projected for the planning area through 2050 fills into the incorporated towns. Additional growth in Scenario 3 is based on the community goals and objectives that would be most achievable with more concentrated population and economic activity in Middletown, Townsend, and Smyrna. Odessa has very little developable land and Clayton is located almost entirely in Kent County. Notably, annexation of unincorporated land into the towns can and has been used as a mechanism to change zoning and increase development potential of land contiguous to town boundaries, often leading to consequences such as land within the heart of towns underutilized and spreading out infrastructure and service needs; this scenario simulates an approach of more coordinated planning and growth strategies between the municipalities and County. The total planning area-wide household projections for all three scenarios are consistent with Delaware Population Consortium (DPC) forecasts for all three areas and total jobs numbers throughout the planning area are consistent with DPC projections for scenarios 1 and 2. However, the jobs numbers assumed for Scenario 3 were roughly doubled and assigned to Middletown as a way to explore how an option to achieve some of the community goals that rely on more dense and concentrated development might be achieved.

Job numbers for Scenario 3 were informed by discussions with the municipalities and figures used in current Transportation Improvement District plans to estimate how many jobs might be expected with fully realized development of non-residentially zoned land within the current boundaries of Middletown. Achieving the jobs aspect of Scenario 3 and associated community objectives would likely require strong emphasis on policy and other recommendations.

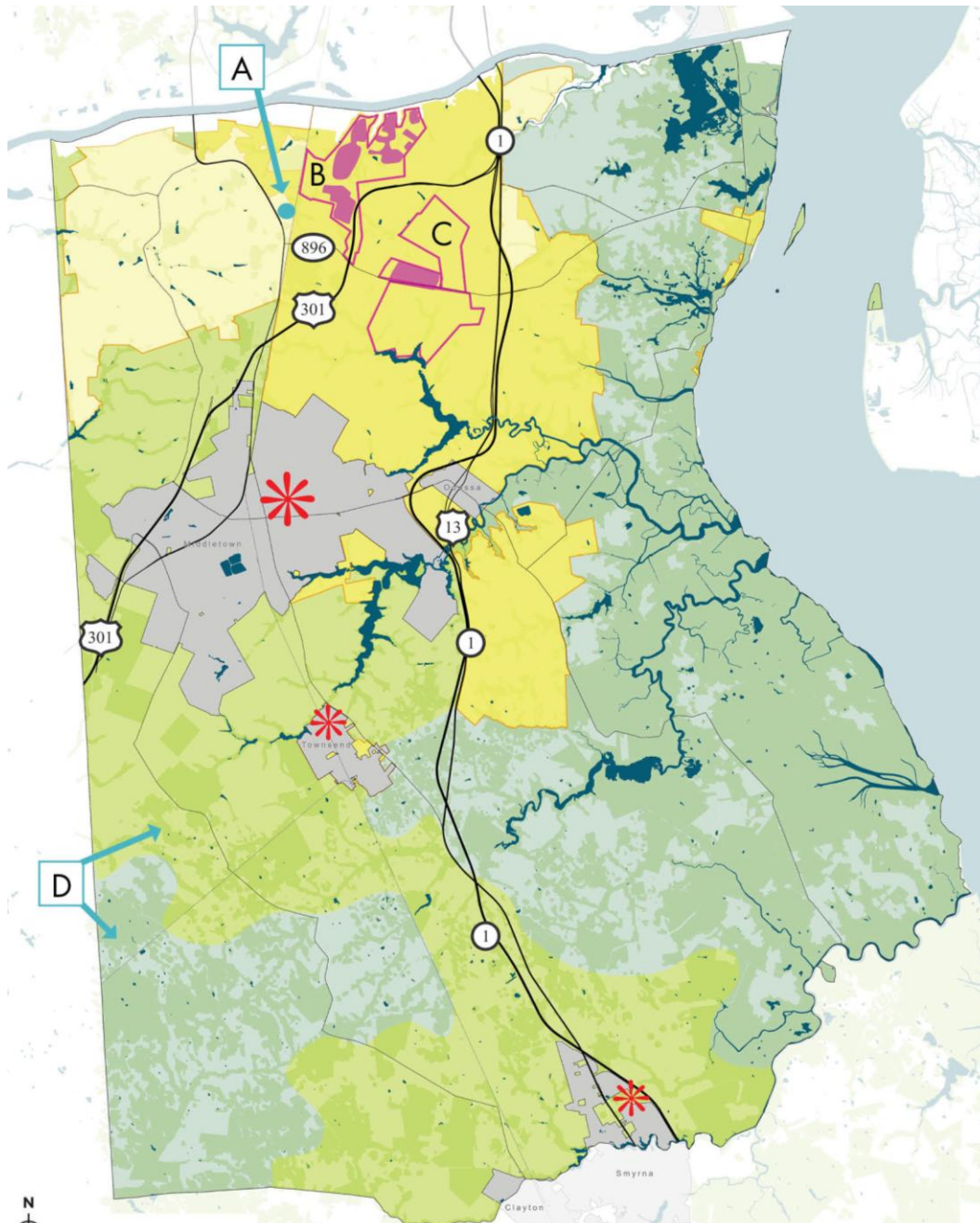
The following explanations elaborate on the methods and assumptions. Because municipalities function independently from the County in terms of land use, economic, and other policy and decision-making that will influence future growth, we have differentiated between unincorporated areas and municipalities to highlight some important distinctions.

#### **UNINCORPORATED AREA**

Scenario 3 maintains Population Consortium forecasted household growth south of the canal and within municipal areas. In this scenario, New Castle County takes proactive actions to address environmental and agricultural preservation concerns as described in Scenario 2. It facilitates future growth within the scope of this plan's time horizon, through 2050, by expanding sewer service into the a portion of the upper West Wing, while limiting development on parcels identified as prime farmland and priority resource areas in the East Wing and Suburban Reserve (SR) zoning district. Scenario 3 also restricts Major Residential Subdivisions, meaning the division of a parcel to more than five lots, to parcels with sewer service. This Scenario simulates future growth within the scope of the Southern New Castle County Master Plan time horizon (through 2050) by expanding sewer service into areas adjacent to existing built out residential developments in the West Wing. As a result, Scenario 3 accommodates 348 additional households located in the West Wing rather than the East Wing (same as in Scenario 2).

## Explanation of Map Categories

-  **Large Planned Developments:** For the Bayberry and Whitehall developments, finer-grained details exist, per recorded plans.
-  **Village / Town Center Growth Area:** This scenario considers some potential enhancements to planned developments at Whitehall and Bayberry to allow for greater levels of activity (residential + commercial development). Mix of housing types, with commercial activity; balance landscape and buildings (2-5 stories).
-  **Other Growth Areas (Future Sewer Service Areas):** Detached single-family houses (1-2 stories, some 3) with landscaped areas. Reduction in future sewer service area to remove the potential for installing sewer service in environmentally sensitive areas.
-  **Priority Natural Resource Area:** Concentrations of significant natural resources and/or environmentally sensitive lands. Partially protected through ownership, easements, or by County, state, and federal law. Limited development is anticipated; the County's policies and actions are intended to further protect these areas in the future.
-  **Priority Agricultural Area:** These are areas that contain the County's best prime agricultural soils and related farming practices. While some development is anticipated in these areas, the County's policies and actions are intended to keep these lands in agricultural production.
-  **Municipalities / Town Infill:** This scenario assumes total job growth in the planning area for the 30-year planning horizon will be approximately 2,500 jobs higher than currently projected, and much of that growth is assumed to fall within the municipal boundaries. It also assumes that more population growth will be absorbed within the existing municipal boundaries than in scenarios 1 and 2. Available capacity and projections generated based on information from the municipalities.
-  **Existing Sewer Service Area:** Areas currently served by New Castle County sewers.



- A. Potential School Complex
- B. Whitehall (Recorded Plan)
- C. Bayberry (Recorded Plan)
- D. Areas shown in darker green are constrained areas and easements, which are areas protected under the New Castle County Unified Development Code, as well as other permanently protected lands (public and private).

Figure 6-3: Scenario III

## MUNICIPALITIES

Scenario 3 explores the possibility that planning efforts within the municipalities result in households choosing to locate within municipalities as opposed to rural areas in the East Wing and rural areas below Middletown. Total household growth in southern New Castle County remains constant, and therefore consistent with officially adopted projections by the Delaware Population Consortium. To evaluate potential planning efforts within municipal areas, the project team reached out to the Towns of Clayton, Odessa, Middletown, Smyrna, and Townsend. Middletown and Odessa expected development consistent with their adopted comprehensive development plans and as such are consistent with officially adopted projections. Smyrna and Townsend discussed development pressures that had the potential to exceed what is currently projected. To maintain consistency with the total projected population and households throughout the planning area (see discussion at the beginning of this section), Scenario 3 assumes that increases within municipal areas would largely come at the expense of household growth in the unincorporated areas, due to municipal planning efforts and the reduction in development capacity in the unsewered areas. Additionally, 200 forecasted households were reallocated from the northern portion of Odessa since the Population Consortium projects a net reduction of three residents within the town boundaries between 2015 and 2050.

For employment, the scenario assumes approximately 2,400 additional jobs in the Town of Middletown, above the WILMAPCO forecast of 3,191 jobs added through 2050 in total (across the planning area). These jobs would be concentrated in areas where there are current plans for non-residential development and in alignment with the development defined in the Transportation Improvement Districts for the area.

Further explanation of the methods and assumptions are provided in the Appendices (page 121).

## 7. Scenario Analysis

### **TRANSPORTATION ANALYSIS**

The Wilmington Area Planning Council (WILMAPCO), New Castle County (NCC), and the Delaware Department of Transportation (DelDOT) completed the draft Southern New Castle County Master Plan in November 2019. For that study, a Phase 1 transportation analysis was completed to help evaluate the alternative land use scenarios that were under consideration. NCC selected a preferred alternative, which was a hybrid of Scenarios 2 and 3 plus additional employment in the Townsend area, in February 2020.

This Phase 2 analysis looks in more detail at eight individual intersections (Figure 7-1) that were selected based on potential impacts from future land use changes associated with the preferred scenario. The purpose is to identify the need for road or intersection improvements that are not already included in DelDOT's Capital Transportation Program (CTP), WILMAPCO's Long Range Plan, or an existing Transportation Improvement District (TID) agreement. Twenty-three other locations already have recommended improvements identified. Twenty-seven additional intersections are currently being studied separately under the TID program for potential improvements. More information on TID intersections can be found at DelDOT's TID website: <https://deldot.gov/programs/transportation-improvement-districts/>.

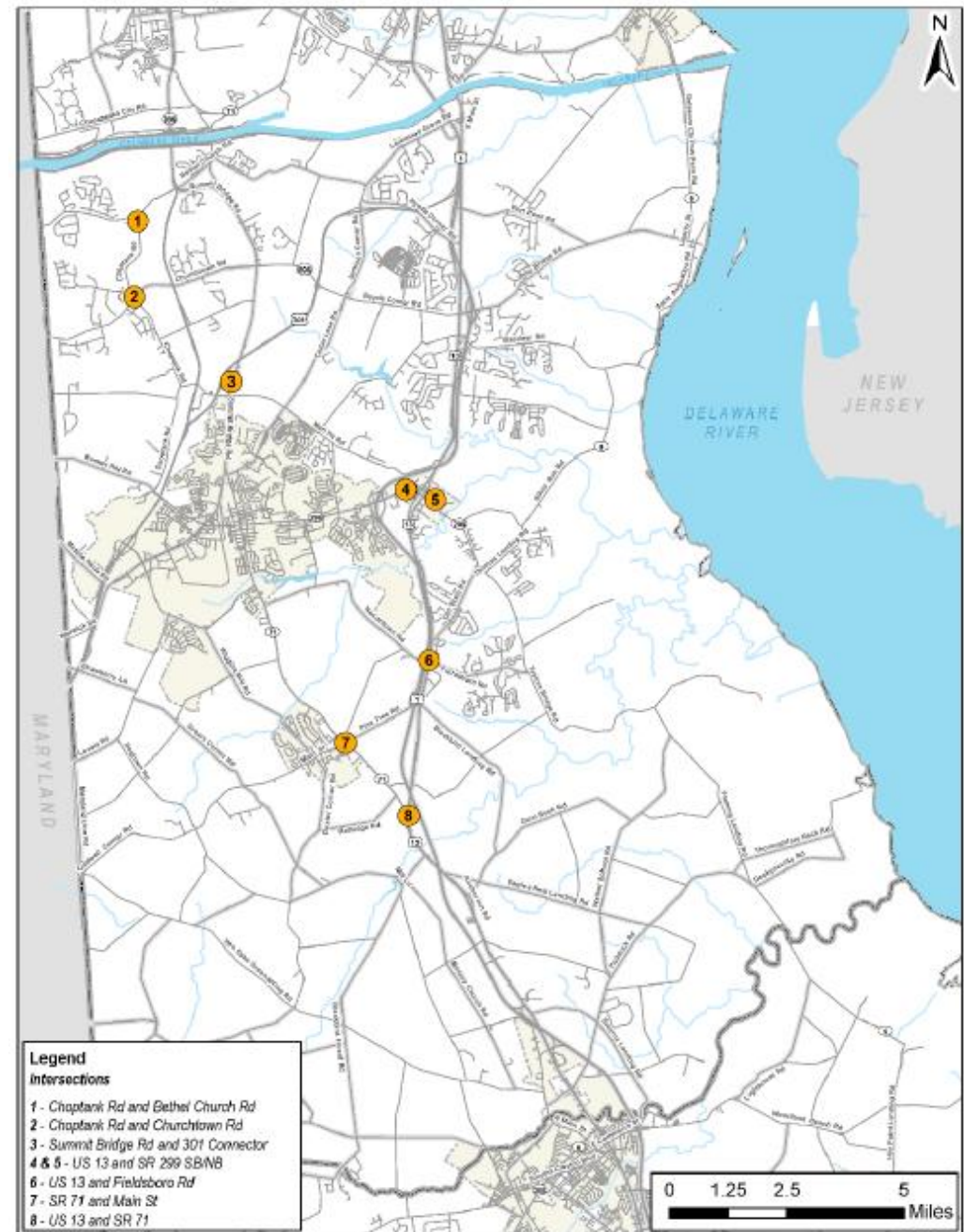


Figure 7-1: Phase 2 Study Intersections



## ***Addressing the Goals and Objectives***

To provide guidance to the community's review of the scenarios, the team provided qualitative and quantitative comparisons of how well each scenario addressed the Master Plan goals and objectives. While the scenarios are an important part of helping to form the recommendations of this plan, final recommendations and implementation strategies included in this plan extend beyond the scenarios.

The tables that follow are similar to those that were shown to the public at the October 7, 2019, public workshop, with updated Goal language to reflect the future or desired result. Plus signs (+) indicate when a scenario is expected to have a positive impact on the objective. Two plus signs (++) indicate a scenario is expected to have the greatest positive impact on the objective. For many of the objectives, scenarios do not provide noticeable differences at this scale. For these objectives, community input at workshops indicated how stakeholders would like to see goals and objectives addressed. Suggestions were considered for incorporation into the plan and are reflected in the refinement and development of objectives and strategies.

### **QUALITY OF LIFE/HEALTH**

GOAL: Residents of Southern New Castle County have access to the amenities and services that help them to maintain a high quality of life.				
Objective	Scenario 1	Scenario 2	Scenario 3	Remarks
Achieve access to recreation for all ages, both indoor and outdoor		+	+	Scenarios 2 and 3 provide more opportunities for walkable communities, allowing access to more recreational opportunities without driving
Increase access to quality healthcare				Scenarios are not significantly different
Improve access to graduated care for aging population, including transportation				Scenarios are not significantly different
Continued improvement of emergency services; types of equipment and response time				Scenarios are not significantly different
Increase locally grown food (production and consumption)				Scenarios are not significantly different

## ENVIRONMENT

**GOAL:** Environmental protection and farmland preservation are considered a priority in Southern New Castle County, and residents and visitors alike have access to trails, parks, and other natural spaces.

Objective	Scenario 1	Scenario 2	Scenario 3	Remarks
Improve air quality				Will depend on results of detailed transportation analysis
Improve surface water and groundwater quality		+	+	Scenarios 2 and 3 reduce development footprint and rely on sewer rather than septic systems
Protect important, quality natural resources, including open space for wildlife				Scenarios are not significantly different; most natural resources are protected by existing regulations
Prepare for impacts of sea level rise		+	+	Scenarios 2 and 3 reduce development in the east wing, the area that is susceptible to sea level rise
Preserve farmland		+	+	Scenarios 2 and 3 reduce land consumption for development
Enhance landscape through street trees, reforestation, etc.				Scenarios are not significantly different

## COMMUNITY CHARACTER

**GOAL:** Development and redevelopment in Southern New Castle County are compatible with, and enhance, the existing community character, including historic properties and design features, the scale of development, and presence of farmland and open space.

Objective	Scenario 1	Scenario 2	Scenario 3	Remarks
Preservation of rural/small-town/historical character		+	++	Scenarios 2 and 3 create new development that is consistent with the mixed-use character found in towns; Scenario 3 makes towns stronger through appropriate growth
Denser, more walkable development with mixed use		+	++	Scenario 3 focuses on towns; Scenarios 2 and 3 provide mixed-use opportunities outside towns
More opportunities for family-oriented cultural attractions, entertainment, recreation (museums, YMCAs, etc.)				Scenarios are not significantly different

## TRANSPORTATION

GOAL: People in Southern New Castle County can use a variety of transportation modes (car, public transportation, walking, and bicycling) to reach their destinations in a safe, comfortable, and convenient manner.				
Objective	Scenario 1	Scenario 2	Scenario 3	Remarks
Expanded public transportation		+	+ +	Scenario 3 provides greater density to support transit service than Scenario 2, but differences are modest.
Congestion management in Middletown				Scenarios are similar; anticipated level of service deficiencies are minor and can be mitigated
Better east-west connections (in Middletown and beyond)			+	Scenario 3 provides the best opportunity to implement planned east-west connections as part of the Eastown TID
More/safer walking and biking paths/connections		+	+ +	Scenarios 2 and 3 provide more opportunities for walkable communities, with Scenario 3 focusing on existing towns

## ECONOMY/JOB

GOAL: Southern New Castle County has a strong and diversified economy.				
Objective	Scenario 1	Scenario 2	Scenario 3	Remarks
More local, diverse job centers, facilitating shorter commutes		+	+ +	Scenarios 2 and 3 focus on job centers, with Scenario 3 including greater job growth
Support small local businesses		+	+ +	Scenarios 2 and 3 focus on job centers, with Scenario 3 including greater job growth
Diversification of industries		+	+	More opportunities for business diversification with Scenarios 2 and 3
Higher income jobs				Scenarios are not significantly different
Living wage/trade/union jobs with retirement benefits				Scenarios are not significantly different
Access to more training and education opportunities			+	Critical mass of job growth in towns under Scenario 3 may justify new facilities

## FEEDBACK RECEIVED

In October 2019, the project team received extensive feedback from the public and the Advisory Committee with respect to both the refined scenarios and other recommendations that were not scenario specific. The public workshop on October 7 drew 78 participants. Comments offered at that workshop, in addition to online comments received through the project website, story map and email, as well as a follow-up conversation with the Town of Townsend on October 17, were compiled and shared with the Advisory Committee on October 23. The following is a summary of comments received; a complete list of all comments is provided in the Appendix. All of this feedback provided valuable information to the project team in the development of the draft recommendations of this plan.

There was generally no support for Scenario 1 (business as usual). While Scenarios 2 and 3 are similar there was slightly more support for Scenario 2.

- Respondents liked the following elements of Scenario 2:
  - Corridor hub areas
  - Likely less congestion in Middletown
  - Less land consumed
  - Continued build out of Whitehall and Bayberry (though not all respondents agreed)
  - Potential for enhanced community character in additional areas, not just existing towns
- Respondents liked the following elements of Scenario 3:
  - Development more focused in towns
  - Less land consumed
  - Potential to create “critical mass” in Middletown
  - Continued build out of Whitehall and Bayberry (though not all respondents agreed)
  - Potential for enhanced community character in additional areas, not just existing towns
  - Most potential for walkability

Regarding quality of life/health, the maintenance of the rural and agricultural character of the area was important to respondents. Regarding the environment, respondents emphasized the preservation of natural resources and the threat of climate change, as well as the preservation of open space and farmland. In terms of community character there was support for maintaining large-lot residential developments, while others showed support for more walkable communities. For transportation, there was concern about traffic congestion, especially in Middletown and Townsend, as well as long commute times. There was also identified a need for alternatives to driving, especially for seniors, and more accommodation for walking and biking. For economy/jobs, there's a need for the diversification of jobs away from only warehousing or retail jobs. In addition, there may be a need for more industrially zoned land.

## 8. Recommendations

### ***Overview***

The community-based goals and objectives were vital to developing and analyzing scenarios. This work helped create the recommendations for this plan. The project team took the objectives, evaluated them in the context of the plan elements, and prepared a series of preliminary recommendations, which were refined based on feedback during the phases of draft plan review.

This section identifies and explains the specific recommendations and strategies. Broader goals are followed by more specific strategies that fall under the five plan elements:

- Quality of life / health
- Environment
- Transportation & mobility
- Community character (and facilities)
- Economy and jobs

The strategies are also summarized in a tabular format with goals and objectives and timelines, at the end of this section (page 88).

### ***Development of the Recommendations***

The vision and recommendations in this plan are based on input from the community throughout the planning process, analysis of existing and estimated future conditions, and scenario analysis and feedback. (This work is explained in preceding sections and in more detail in the Appendices.) Combining findings from scenario evaluation and approaches from Scenarios 2 and 3, which include more specific directed growth and preservation, fostering corridor hubs and promoting infill in municipalities, the proposed plan was developed (see Figure 8-1).

Considering projected future growth and development in southern New Castle County, traffic volumes can be expected to increase in all scenarios and anticipated LOS deficiencies are not related to a particular scenario. Likewise, there were only small differences between scenarios 1 and 2 with regards to the proposed the proposed transportation improvement recommendations in addition to existing planned improvements already identified in WILMAPCO's Regional Transportation Plan (RTP).

It is important to note that while this document is a complete master plan for Southern New Castle County, its primary focus is on the connected issues of land use, transportation and infrastructure in an attempt to layout a more sustainable path for development. Other issues brought forth by community members in various forums are no less important but may not be fully addressed in this document beyond the scope of the above three issues. New Castle County is currently launching the ten-year update to the *Comprehensive Development Plan*, where these less addressed issues can be further explored.



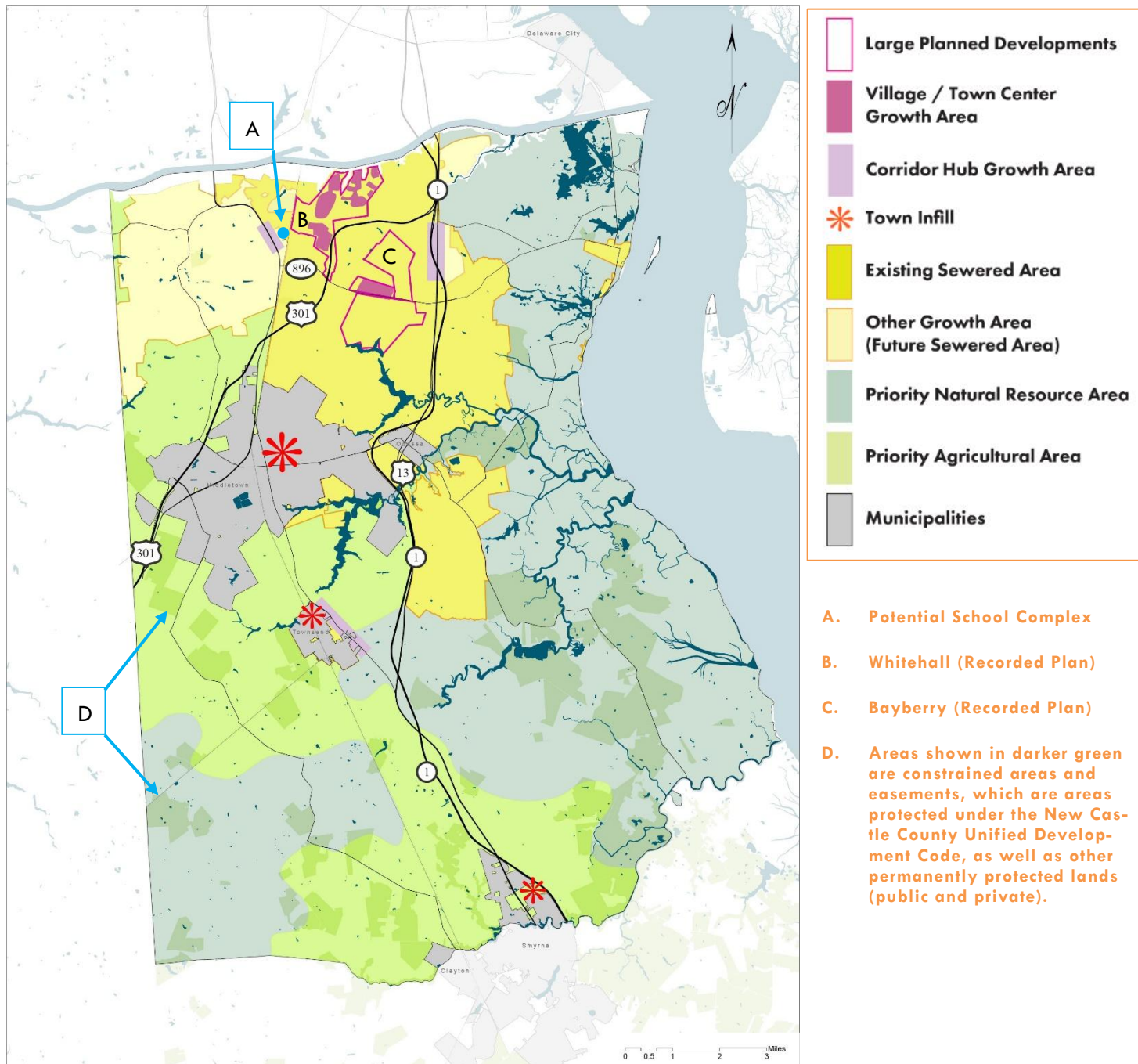


Figure 8-1: Proposed Plan

## **LAND USE & PLANNING (OVERARCHING)**

The Comprehensive Development Plan serves as the formal land use and planning policy for the County. It is through the Future Land Use Map of the Comprehensive Development Plan that the vision articulated in this plan is translated into official policy serving as the basis for all land use recommendations and decisions. The Sewer Service Area Map of the Comprehensive Development Plan is also an important graphical manifestation of the plan's recommendations and implementation. Together, the land use and sewer policies form an important foundation for sustainable growth and for achieving many of the goals of this plan.

The following are overarching land use planning recommendations, which span across the five plan goals, along with their associated strategies.

### ***Objective 0.1: Amend the New Castle County Comprehensive Development Plan for Consistency with the Goals and Objectives of this Master Plan***

Incorporation of the Southern New Castle County Master Plan into the New Castle County Comprehensive Development is essential to achieving the goals and objectives of the plan.

#### **Strategy 1: Amend the Future Land Use Map consistent with the Plan's Recommendations.**

The proposed Future Land Use Map, shown in Figure 8-3, articulates the growth policy for this plan. The Future Land Use Map in the current adopted plan from 2012 (Figure 8-2) will need adjustments to support achievement of the preferred plan. Main contrasts between the two maps include: increased area designated for "resource and rural preservation" in the east and west wings; and additional areas designated "new community growth" in the west wing.

#### **Strategy 2: Amend the Sewer Service Area Map to include areas planned and not planned for sewer service.**

This should be done in coordination with the Future Land Use Map.

#### **Strategy 3: Delineate a Growth Area Boundary consistent with the Plan and the two maps mentioned in Strategies 1 and 2.**

#### **Strategy 4: Incorporate the Southern New Castle County Master Plan into the New Castle County Comprehensive Development Plan by reference.**

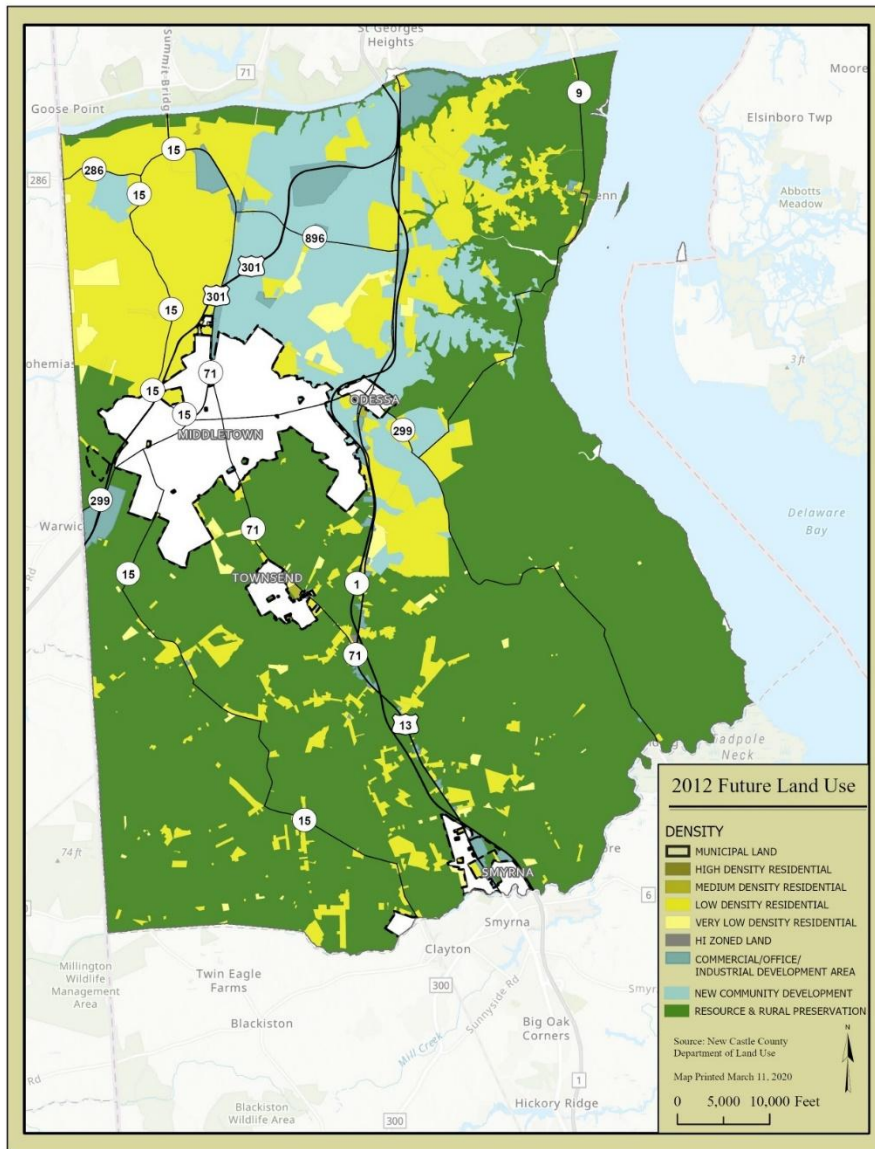


Figure 8-2: 2012 Future Land Use Map

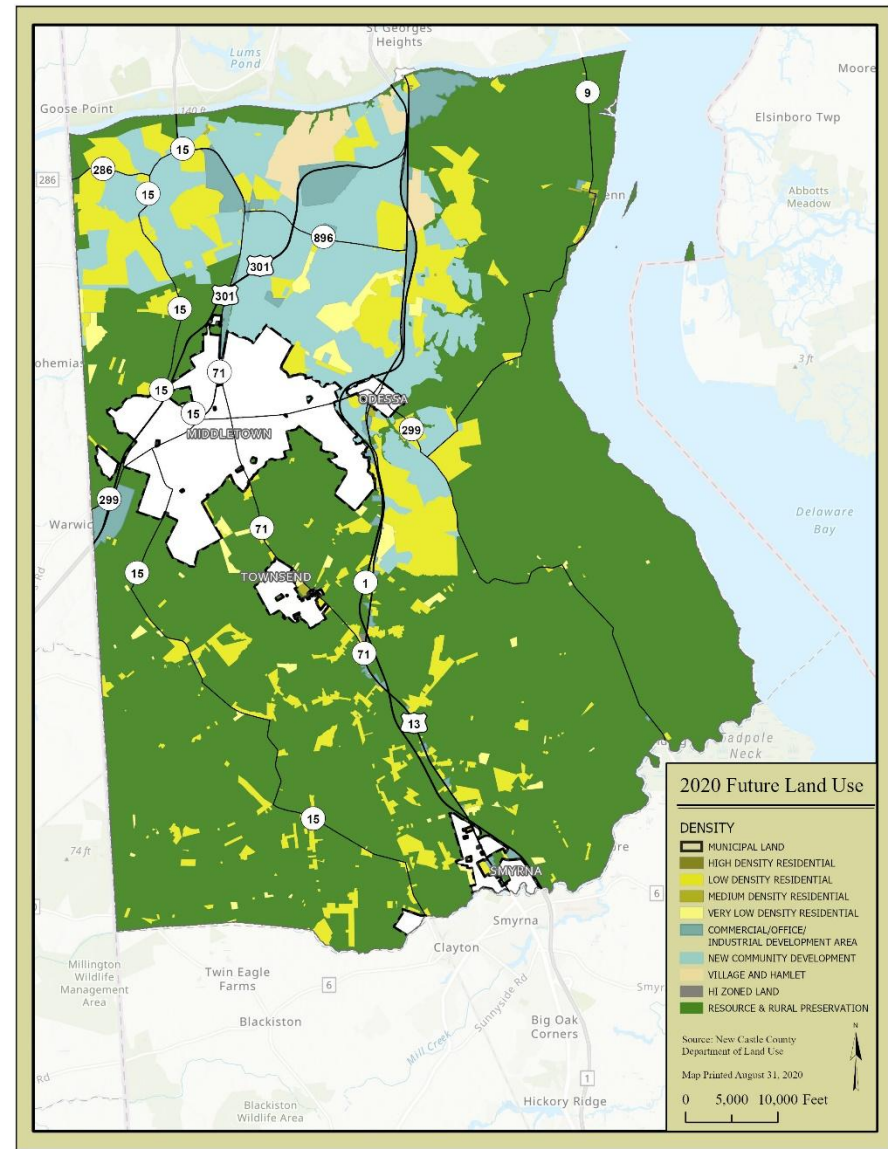


Figure 8-3: Proposed 2020 Future Land Use Map



**Objective 0.2: Adjust zoning definitions and designations for clarity, predictability, and alignment with the development goals and objectives of this Plan.**

The Suburban Zoning district, which much of the central core and west wing are zoned, allows for several development options. While this provides for a diversity of housing types, when a large property is developed, it can feel unpredictable to neighboring property owners as to what type of development they can expect. Development options in the Suburban zoning district permit up to a 133% differential between the lowest gross density option (Single-Family Conservation) and the highest gross density option (Age Restricted Open Space Planned) on sewer-served Suburban zoned lots  $\geq 50$  acres. Additionally, these developments can vary from single-family detached dwellings on large lots to diverse developments with a mixture of housing types. Refining land use regulations will better enable achievement of the goals and objectives of the plan. Figure 8-4 shows the distribution of the current differentials in density options.

**Strategy 1: Establish caps on the maximum base site area permitted for lower density single housing type development options in the Suburban zoning district.**

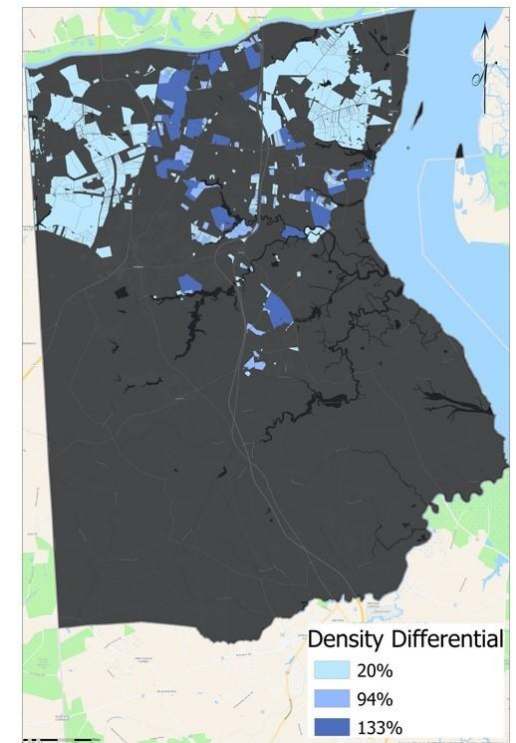
This reduces sprawl by relegating low density developments to smaller sites. Larger sites should be developed with a mix of housing types (Open Space Planned) and/or mix of uses (Hamlet/Village) at higher gross densities, more efficiently developing the site in a manner consistent with the Comprehensive Development Plan.

**Strategy 2: Consider re-evaluating what land is zoned Suburban and Suburban Reserve for larger parcels:**

- Residential land, not zoned Neighborhood Conservation, in the sewer service area should be designated “Suburban” (S);
- Residential land, not zoned Neighborhood Conservation or Suburban Estate, outside of the sewer service area should be zoned SR. The definition of SR in Article 2 of the UDC currently indicates that all SR zoned land is intended to be rezoned to S and at such time will receive sewer at some point in the future. This definition should be revised to indicate that sewer service is not currently planned for SR zoned land.
- Where appropriate, and consistent with Objective 2.3, Strategy 3 land identified as having a high agricultural value or is environmentally sensitive should be zoned in a manner that adequately protects the resource.

**Objective 0.3: Coordinate planning and implementation with other levels of government.**

The Strategies for State Policies and Spending is an initiative of the State, designed to coordinate land-use decision-making at various levels of government with the provision of infrastructure and services in a manner that makes the best use of our natural and fiscal resources. Every five years an update of the Strategies for State Policies and Spending maps is performed using spatial data analysis to balance state, county, and local policies for various kinds of residential growth, economic development, and land preservation. The State Strategies Map delineates areas most appropriate for different types of growth



**Figure 8-4: Differential in density options for 'S' zoned land**

and investment (Figure 8-5). Level 1 and 2 areas, shown in red and orange, are areas generally considered most desirable for growth and development, whereas the out of play areas (in grey) are not intended for development and the level 3 and 4 areas (in yellow and white, respectively) are intended for only very limited development activity. The Office of State Planning Coordination is currently coordinating the update to the State Strategies map, which should be completed in July 2020.

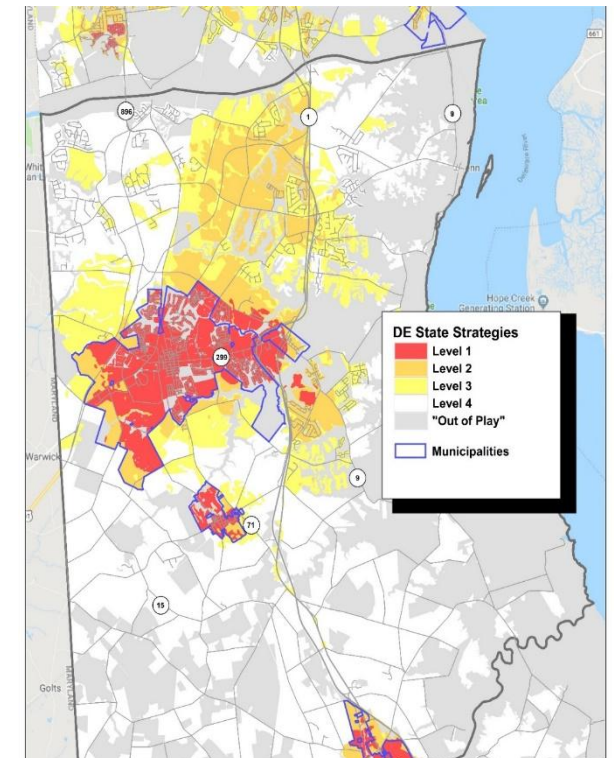
**Strategy 1: NCC and the Office of State Planning Coordination should work together to ensure the State Strategies map considers the final recommendations of this Master Plan, including designation of areas for growth and areas for preservation.**

As detailed in other sections of this plan, New Castle County coordinates with municipal governments on a range of issues, such as sewer service, recreation and open space, and other community facilities. Coordination with the five municipalities in southern NCC (Middletown, Odessa, Townsend, Smyrna and Clayton) on each element of this Master Plan is important to achieving goals for this Plan as well as supporting thriving towns that exist within southern New Castle County. In general, this plan recommends building on the existing coordination and communication with the towns toward compatible zoning, design standards, and coordinated growth and preservation.

The planning process has fostered communication with the towns both through their involvement on the Advisory Committee and through individual meetings, calls, and communication. Through this process, plan scenarios were explored, and recommendations were developed using: the official projections and requirements of the State; information and analysis gathered by the southern NCC Master Plan project team; and the information and material provided by the towns.

Figure 8-6 shows current municipal boundaries and annexation areas. Municipalities who wish to annex land are required by State law to identify proposed annexation areas on their Future Land Use Map, which is a component of the Comprehensive Plan. Annexation areas shown in Figure 8-6 are from the Future Land Use Maps in official Comprehensive Plans as of 2017 for the municipalities within the planning area.

Findings from the scenario development and analysis phases of plan development indicate that current growth areas (areas designated for annexation in current comprehensive plans) for all towns within the planning area are sufficient to accommodate the officially projected population and employment growth and more. (Additional details are found in the appendices). Figure 8-6 shows those current annexation areas which are the basis for this plan and factored into plan recommendations and strategies. The areas shown as annexation areas in the map reflect generally where municipal expansion would be expected, whereas those areas outside would be the focus of preservation and/or other development more suitable to the rural character of the unincorporated areas. Some of the municipalities are in the process of updating their comprehensive plan and some are about to start that process. The County is aware of some adjustments to the official annexation areas that are currently in progress and will continue to coordinate with the municipalities.

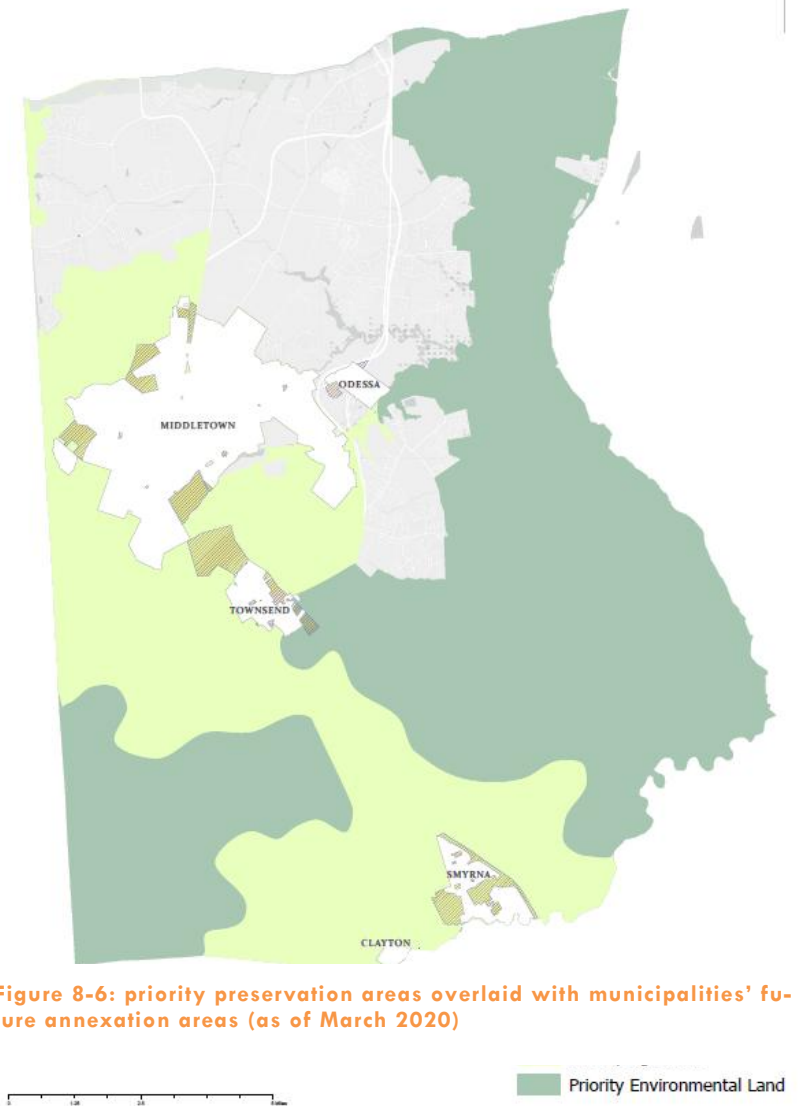


**Figure 8-5: State Strategies Map**

**Strategy 2: NCC and the incorporated towns should continue coordination and collaboration on development, infrastructure, and policies to support achievement of the goals and objectives of this plan, including using joint planning areas.**

A memorandum of understanding has been used in the past to support a coordinated approach to development and preservation; such a strategy should be considered to support successful implementation of the southern New Castle County Master Plan.

Further, coordination of resources, growth, and preservation should be approached using joint planning areas. Figure 8-6 shows the priority preservation areas (ag and open space preservation) as defined in this plan overlaid with the municipalities' current future annexation areas. The County and municipalities should work to more closely examine anticipated growth, capacity, and plans at the jurisdictional interface and devise cooperative strategies to achieve shared and synergistic goals for preservation and development. A "joint planning area" (JPA) is a tool that could be applied to implement this recommendation. Such a tool includes collaborative and proactive planning, agreements, and ongoing monitoring to achieve a range of benefits for both county and municipality including predictability, environmental benefits, service efficiencies, and cost-savings. JPAs might involve establishment of growth, transition, and preservation areas and definitions would be incorporated into jurisdictions' planning and zoning.



**Figure 8-6: priority preservation areas overlaid with municipalities' future annexation areas (as of March 2020)**



### **Objective 0.4: Establish Corridor Hub Growth Areas**

Three places within the planning area were identified for future development as Corridor Hub Growth Areas<sup>16</sup> through the planning process. These areas are located along major thoroughfares and have been identified in the plan as areas where additional non-residential growth would be desirable (outside of the municipal areas). The three areas include:

Corridor Hub 1: the land adjacent to Summit Bridge Road, north of the intersection with Boyds Corner Road;

Corridor Hub 2: the land adjacent to DuPont Parkway between the intersections with Pole Bridge Road and the intersection Port Penn Road; and

Corridor Hub 3: the unincorporated land adjacent to Summit Bridge Road extending to the northern and southern boundaries of the Town of Townsend.

Achieving the desired future development pattern for these areas will require the following general strategies:

**Strategy 1: Rezone identified properties (Figure 8-7 and Figure 8-8) and amend the Future Land Use Map to ensure that the properties are developed in accordance with the Smart Code provisions of the UDC.**

The Summit Airport, portions of Summit Bridge Road near the future school site, and parcels identified in Corridor Hub 2, should be amended to become Office/Commercial/Industrial Future Land Use category.

**Strategy 2: Create a new Future Land Use category – Hamlet and Village Areas.**

This will guide development in such designated areas to follow the Smart Code provisions in the UDC. This allows for the creation of a mixed-use corridor, a mix of housing types, and increased density in certain areas.

**Strategy 3: Remove the Hamlet and Village provisions from the Suburban Zoning District and create a Hamlet and Village zoning district.**

This provides more predictability and clarity in regard to which types of developments are permitted and where they are permitted.

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<sup>16</sup> Place type defined are: potential neighborhood centers formed around an amenity, such as a bus park-and-ride, or heavily traveled road. Could include residences as well as commercial (restaurants, shops, services), with buildings up to 2-3 stories.

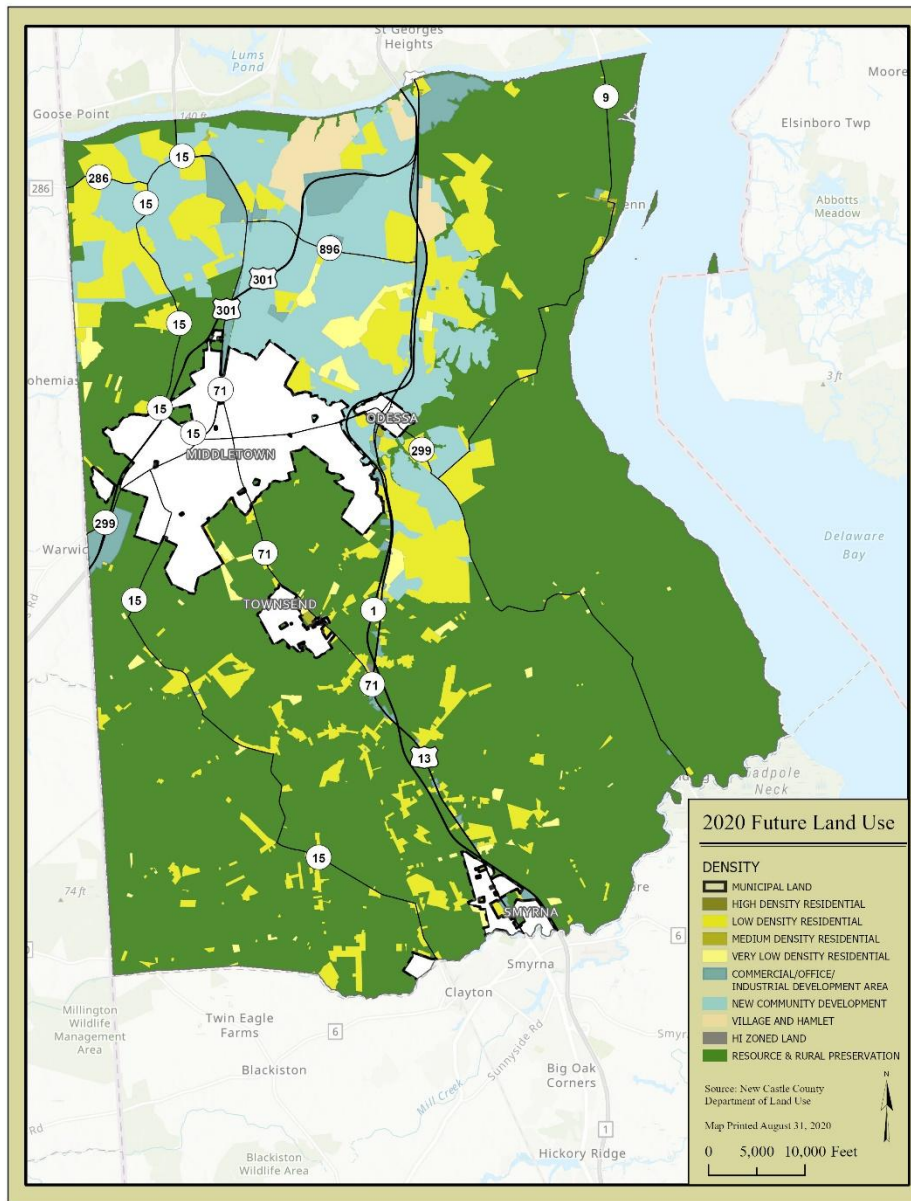


Figure 8-7: Proposed Future Land Use Map Changes

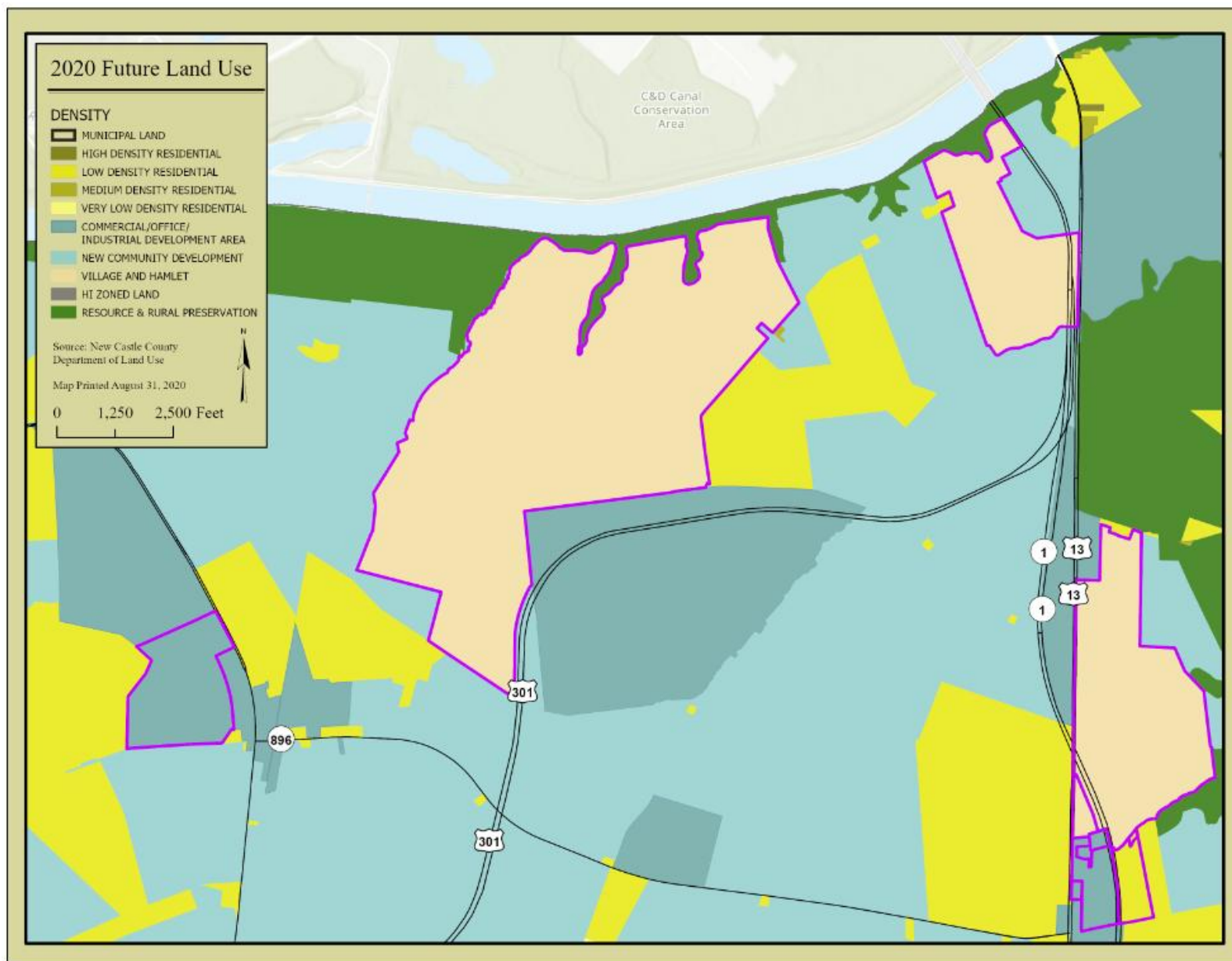


Figure 8-8: Proposed Future Land Use Map Changes

## QUALITY OF LIFE/HEALTH

Goal: Ensure that residents of southern New Castle County have access to the amenities and services that help them to maintain a high quality of life.

### *Objective 1.1: Achieve access to recreation for all ages, both indoor and outdoor*

#### **Strategy 1: Add new Neighborhood Parks and District Parks<sup>17</sup> in Southern New Castle County.**

New parks should be in accordance with standards defined by the National Recreation and Park Association and recommendations in the *New Castle County Long Range Park Acquisition and Development Plan* (2017) and in careful consideration of parks development and maintenance costs. For the MOT area (Midletown, Odessa, Townsend) there is the need for eight additional Neighborhood Parks and 1  $\frac{3}{4}$  additional District Parks.

In August 2017 the County Executive launched, the New Castle County Parks Task Force, which made recommendation for improving the County's park system. Specifically, the task force identified the area on Shallcross Lake Road as a location for a park. The County has finalized this location and begun plans for development.

Additionally, continued planning and effort should be made toward achieving:

- Park Facility in the vicinity of Shallcross Road
- 1st Phase of Wiggins Mill Park
- Continue working with Whitehall developers to explore potential for a mutually beneficial public park facility
- Develop relationships with private landowners who may be interested in future sale of Property for Park Purposes
- Consider working with the developers of the Scott Run Business Park in order to develop a park facility
- Identify other areas underserved by County Parks

#### **Strategy 2: Ensure interconnectivity of parks, open space, and other recreational resources.**

An intentionally planned and interconnected system provides a whole host of ecological and land management benefits, but also enhances accessibility by a wide range of users and will provide a more seamless means to fully implement a multi-modal pathway network. This will have an added benefit of reducing the vehicular infrastructure burdens on existing and future parks, while improving the quality of life of residents. In addition, the county should ensure, per

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<sup>17</sup> District Parks, as defined by the NRPA are based on 1.3 acres of parkland per 1000 people and within 1-2 miles of residents. These are also larger parks, usually between 25 to 75 acres.

UDC requirements, new subdivisions and land developments are interconnected where possible. In addition, the county should explore mechanism to streamline the process to make changes to open space in existing subdivisions in order to establish public access for trails.

The County should also continue to work with partners including DelDOT, DNREC, and WILMAPCO to develop and expand access to trails and improve bicycle and pedestrian infrastructure. Improving bicycle and pedestrian infrastructure provides an opportunity to increase access to recreation and improves access to parks without the need to drive. The flat topography of southern New Castle County make pathways a highly viable mode of transportation and recreation for a range of users. Creation of a regional greenway plan, such as has been done for the Brandywine-Struble Greenway in Chester County, Pennsylvania, is a recommended action to support this effort.

**Strategy 3: Develop relationships and establish partnerships for joint location of community facilities.**

Co-locating recreational facilities or establishing shared use agreements can be effective ways to increase access to recreation, leverage limited resources, and help ensure facilities are well used and also maintained in good condition. An example of a shared use agreement is opening school athletic facilities to the public during afterschool hours and summer.

**Strategy 4: Evaluate policy for accepting community open space from developers or homeowner associations to ensure sustainable maintenance of park and open space into the future.**

In some cases these open spaces can amount to large amounts of land. Consider approaches such as allowing HOAs to utilize or lease open space lands for public or private use that could generate funds toward maintenance. Examples include farming and farm stand sales, recreation-oriented leasing/rentals, and limited commercial sales and restaurant establishments that maintain the character and intended use of the landscape. Allow flexibility and move away from the single-use mindset for economic resiliency and building better community character.

**Strategy 5: Explore possible passive recreational facilities east of SR13.**

As part of the larger focus on access to trails and park interconnectedness, ways to improve access to wildlife areas east of Rt. 13 should be explored as these areas provide the opportunity for passive recreation such as walking trails or bird watching.

**Strategy 6: Work with residents and property owners adjacent to parks to identify and work on park enhancements and potential expansions.**

Establish relationships with civic associations adjacent to County-owned parks to create a dialog on improvements desired by the community. For example, working with neighbors of the County-owned Back Creek Park to identify potential improvements.

**Strategy 7: Consider Reorganizing the NCC “Parks” & “Recreation” Functions.**

The County should consider reorganizing the “parks” and “recreation” functions into a single unit (a recommendation made in the Parks Transition Report). This may include merging of those functions under an existing Department or potentially creating a new Parks and Recreation Department within New Castle County Government.



## **Objective 1.2: Increase opportunities for “aging in place”, including access to quality healthcare and graduated care for aging population**

Supporting affordable housing allows residents to “age in place”, defined by the US Centers for Disease Control and Prevention as “the ability to live in one’s own home and community safely, independently and comfortably regardless of age, income, or ability level.” Research has shown improved quality of life and health outcomes when people can maintain social connectedness and safe access to other needs as they proceed through older age.

### **Strategy 1: Evaluate existing inclusionary housing programs and consider providing additional incentives to increase production of affordable family units in high-opportunity areas.**

Prioritize county federal housing funding (CDBG, HOME) and encourage Low Income Housing Tax Credits (LIHTC) for family developments in southern New Castle County, and further incentivize LIHTC family development in areas of opportunity through county driven incentives.

### **Strategy 2: Promote access to daily needs, particularly healthcare, within growth centers by encouraging local jurisdictions and the County to waive or reduce fees for affordable housing.**

Most of the healthcare facilities in the planning area are located within existing municipalities; supporting affordable housing in these areas will allow more people to access healthcare. An area would need to offer a full continuum of housing options – apartments, townhomes, single-family homes – to allow for aging in place. Aging in place has tremendous health benefits, as residents will not be forced to change healthcare providers as they would if they had to move from the area due to lack of appropriate or affordable housing options.

### **Strategy 3: To help preserve existing rental stock for low-to-moderate income households, revise County code policies to require regular inspections to reduce displacement and fear of retaliation by landlords.**

### **Strategy 4: Expand the availability of quality rental stock for low-to-moderate income households by conducting additional outreach to landlords on the County’s Small Area Fair Market Rent program.**

This would provide additional rental subsidies for landlords willing to rent to Housing Choice Voucher Program clients.

### **Strategy 5: Expand transportation connectivity to enhance access between housing opportunities and other essential daily needs.**

Potential actions include:

- Support DART proposals to expand transit service, with continued focus on new and expanded service as more development occurs. DTC is currently planning for expanded service to Middletown and improved bus routes to better serve demand DART Service Area improvements Southern New Castle County
- Provide sidewalk connections to schools, libraries, retail establishments, and parks.

- Provide safe and comfortable bicycle routes within close proximity of important destinations by adopting New Castle County Bicycle Plan, implementing proposed network, and increasing the number of miles of shared-use trails and pathways.
- To the extent the market allows, expand rideshare and alternative ridesharing network.
- Optimize traffic signal timing on a regular basis.
- Proceed with design and construction of road improvements identified in DelDOT's Capital Transportation Program, WILMAPCO's Regional Transportation Plan, and local Transportation Improvement Districts.

### ***Objective 1.3: Continued improvement of emergency services; types of equipment and response time***

#### **Strategy 1: Work toward adequate capacity and facilities for emergency and police services.**

As the population grows in the planning area, the demand for emergency and police services will grow. Currently, there is no police station in southern New Castle County. To ensure the safety of residents and visitors, the County will monitor the need for a station on a regular basis. Once it has been determined that a police station is needed, the location should be determined based on maximized response time and visibility. Police and other emergency service stations are an integral part of a community.

#### **Strategy 2: Ensure emergency and police services capacity and funding is available as population grows in southern New Castle County.**

Impact fees are payments that developers must make to the County to cover the costs of services, such as public safety and parks and recreation, that will be more in demand due to their development. Current impact fees should be evaluated to ensure the monies levied from new development adequately address the impact of increased demand.

### ***Objective 1.4: Increase locally grown food (production and consumption)***

#### **Strategy 1: Implement forthcoming strategies from the County's Land Preservation Task Force Agriculture Committee, focusing on supporting agriculture as part of a thriving local economy.**

Delaware residents are growing increasingly interested in locally source food, including farm products, which offers benefits to local farmers and can enhance public health by making fresh fruits and vegetables more accessible. "Farm-to-table" restaurants, restaurants that feature locally grown and made produce, cheese and meats, dot the County and are often considered destinations. Farmer's Markets and produce stands are growing in popularity as residents seek healthier food choices and unique destinations. Supporting and encouraging small family farms would further support locally sourced food.

**[Also see strategies under "Environment" and "Economic Development".]**

## ENVIRONMENT

Many of the Plan's environmental goals and objectives are dependent on recommendations for focused growth areas and corresponding preservation strategies. Success is heavily dependent on planned growth with sound sewer service policies. A jurisdiction can have significant environmental policies that get applied at the site level, project by project, but if development is not directed to planned areas and correspondingly natural areas aren't broadly protected, these other environmental protections will be marginalized.

Goal: Continue to ensure that environmental protection and farmland preservation are considered a priority in southern New Castle County and residents and visitors alike have access to trails, parks and other natural spaces.

### *Objective 2.1: Improve surface water and groundwater quality*

The *New Castle County Conservation Strategy* (2002) articulates the County's environmental protection strategy and commitment to a clean environment. It contains an inventory of resources, their protection measures, and challenges and concerns of those resources.

Among the issues of concern are waters that do not meet water quality standards for their designated uses, such as recreation, fishing, or drinking. Impaired waters could be suffering from excess nutrients, low dissolved oxygen, toxins, bacteria, heat, or any combination of these problems. The most common causes are pathogens, such as bacteria, and nutrients, especially nitrogen and phosphorus. Failing septic systems, improper stormwater management and non-point source pollution are common means of introducing these pathogens to surface and groundwater. While many issues go beyond the ability of the County to intercede, they do underscore the importance of working partnerships among state, county and local agencies and environmental organizations and land-owners to address issues comprehensively.

### **Strategy 1: Clearly incorporate sewer service area maps and the update process into the Comprehensive Development Plan in order to better manage growth and infrastructure.**

Designating specific areas to be served by sewer or septic systems based on soil quality, existing infrastructure, environmental sensitivity, development patterns, population projections and other criteria can make a positive difference in the quality of surface and groundwater. The goal of the proposed map of sewer service area, its definitions, and other related policies is to manage growth, develop consistency and predictability, and avoid ambiguity. Figure 8-10 shows the proposed sewer service area map.

The map delineates three different categories: existing sewer service area, future sewer service area, and areas where no sewer is planned. These areas and their definitions have been created to better align sewer infrastructure and capacity with projected growth and demand and be clearer about where sewer will go and where it will not go in the future.

Map area designations and their definitions are as follows. These will guide further policy development and coordination:

- Existing sewer area: sewer is available for connection as of the adoption of plan. (In practice this means that the sewer main is in place and available for connection; the sewer system can accommodate additional capacity.<sup>18</sup> This does not guarantee that capacity for a specified development is available and ready.)
- Future sewer area: sewer will be in place and available for connection during the plan horizon. (For the Southern New Castle County Master Plan, this covers through the year 2050).
- No sewer planned: No sewer infrastructure is planned for the area through the plan horizon year.

Changing sewer service designation will require an amendment into the Comprehensive Plan. The Sewer Service Area Map in the current (2012) Comprehensive Development Plan, reflected in Figure 8-9, should be amended to reflect Figure 8-10 in this plan.

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<sup>18</sup> Sewer capacity is committed at record plan stage through Part II of the LDIA. sometimes a developer may need to build more sewer infrastructure in order to connect to the County's system. See Joint Policy 2 (between Departments of Land Use and Public Works) for further detail.

Figure 8-9: 2012 Comprehensive Plan Sewer Areas

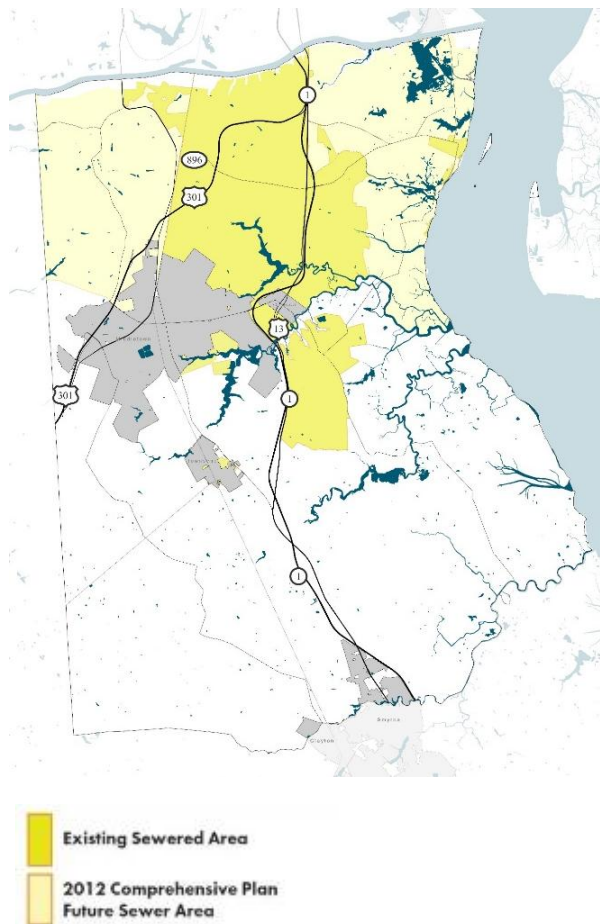
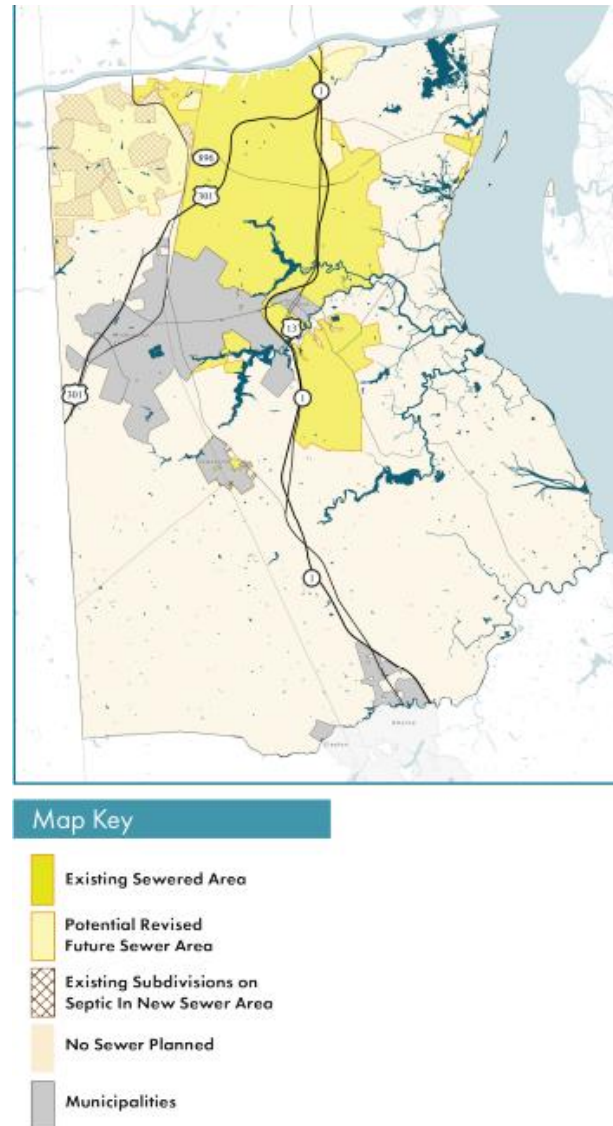


Figure 8-10: Proposed Sewer Service Area





### **Strategy 2: Finalize an updated sewer facility plan.**

The Department of Public Works will finalize an updated sewer facility plan in conjunction with amendments to the Comprehensive Development Plan that results from this plan. The updated sewer plan will identify sewer infrastructure improvements (transmission, treatment and disposal) needed to support growth and land use planning as identified in this Master Plan. In doing this, the Comprehensive Plan will clarify past inconsistencies and ensure that sewer infrastructure and land use plans compliment and support each other. The Department of Public Works will consider a number of factors in determining capacity requirements and regional system expansion needs including but not limited to: growth projections, existing topography, environmental constraints, potential future connection of existing septic communities to the County sewer system and trends in building permit/certificate of occupancy activity to confirm pace of development.

The Department of Public Works will use the following factors to determine capacity requirements and regional system expansion needs:

- Growth projections
- Existing topography
- Environmental constraints
- Existing septic communities – potential future connection to the County sewer system
- Trends in building permit/certificate of occupancy activity to confirm pace of development

Based upon the pace of development and existing treatment plan operation, the Department of Public Works will determine the timing of system expansion. A limiting factor in sewer system expansion is cost. The cost of construction of sanitary sewer infrastructure is normally higher than other utilities, as the infrastructure is larger and deeper in comparison. The County's Capital Improvement Program will need additional funding to expand the system and improve treatment and disposal capacity. Those costs can be subsidized through establishing Capital Recovery Fees (paid when new connections to the system are made) and the use of State Revolving Fund grants and loans. Public Works will pursue various ways to reduce capital improvement costs and will time the improvements as needed to ensure funds are spent only when necessary.

### **Strategy 3: Encourage new development in Sewer Service Areas and regulate septic use for low-density development consistent with County Septic Policy.**

The County has revised its septic policy to limit rural sprawl development, groundwater pollution, and future septic system failures.<sup>19</sup> Many of the inventoried natural resources of the County that provide habitat for wildlife are also particularly susceptible to pollution impacts, and several of the areas most suitable

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<sup>19</sup> Ordinance 19-078 (Substitute No.4) prevents the Department of Land Use from accepting subdivisions of Suburban zoned land into more than five (5) lots if not served by public sewer. (This restriction expires on August 26, 2021, unless amended by County Council)

for septic systems also contain some of the most productive soils for agriculture. Balancing these factors means providing suitable public sewer opportunities in growth areas while providing appropriate opportunities for septic in low density areas most suited to on-site systems.

This planning effort has led to a refinement of sewer service areas and the designation of areas most appropriate for agricultural production and natural resource protection. These policies are expected to impact less prime agricultural soils (upwards of 7,000 acres) and preserve natural areas that are most suited for low levels of development.

**Strategy 4: Consider additional safeguards for Water Resource Protection Areas (WRPAs) and the public water supply.**

While the County has been a leader in its efforts to protect water resources, evolving science should be consulted periodically in order to determine whether new and evolving techniques exist for the protection of sensitive resource areas. Pursuing this effort will likely involve the cooperation of DNREC and the Water Resources Center at the University of Delaware. While there may only be minor changes needed, the time has come to evaluate the success of the County's regulations and consider the potential for additional safeguards in the future.

As part of the sewer and water element of the Comprehensive Plan (due for countywide update in 2022), the State requires assessment of current and projected water needs and sources, ways to provide for future potable water, and ways to provide for wastewater disposal<sup>20</sup>. The Water Supply Coordinating Council's 9<sup>th</sup> Report to the Governor and General Assembly (2006) was the most recent report on potable water supply that specifically addressed southern New Castle County. That report has been updated and is currently under review. At this time, it indicates that sufficient water supply is anticipated to 2050 and beyond through private water providers, municipal sources, and other individual private wells. Additional recommendations suggested in the draft 2019 report include:

- To protect the quantity and quality of aquifers that provide sole source drinking water and to manage water supplies by the principles of contiguity and compactness, subdivisions should be served by public water systems rather than by individual wells. The New Castle County Unified Development Code (Section 40.12.115) requires that subdivisions with more than 25 lots should be served by public water systems. New Castle County should work with public water suppliers to hook up public water systems to neighborhoods with more than 25 lots that are presently served by individual wells to bring these areas in to compliance with the UDC.
- Maintain continued sufficient groundwater availability to meet peak demands from public water supply uses (13.5 mgd) by ensuring:
  - public water supply and irrigation wells are pumped in accordance with Delaware Department of Natural Resources and Environmental Control (DNREC) water allocation limits. DNREC should continue to monitor demands and water levels from allocated public water supply wells

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<sup>20</sup> Must include assessment of fiscal consideration and consistency with approved areawide wastewater treatment plans.

and irrigation wells so as not to diminish the capacity of irrigation wells for producers that wish to sustain farming in southern New Castle County.

- Water purveyors interconnect between and within systems, add new finished water storage and aquifer storage and recovery, and transport water from aquifers with excess availability south of Townsend to growth areas between Middletown/Odessa and the Chesapeake & Delaware Canal.

**Strategy 5: Ensure consistency between proposed sewer service areas and other growth management maps and policy.**

In addition to the Future Land Use Map of the current 2012 Comprehensive Plan (see Figure 8-2), the map(s) for State Strategies for Policy and Spending (see Figure 8-5) will need to be updated to reflect the finalized sewer service area policy. See overarching Land Use and Planning recommendations on page 59.

**Strategy 6: Update Chapters 38 and 40 of the County Code for consistency and coordinated processes.**

Update zoning district definitions to be consistent with proposed sewer service area map and definitions regarding what areas are to be served by sewer and what areas are not to be served by sewer. Currently, Suburban (S) zone is an area will have sewer in the future and Suburban Reserve (SR) could have sewer service in the future. Update Chapter 38 (which covers sewers and sewage disposal) and Public Works policies to achieve consistency with the UDC and Comprehensive Development Plan updates.

***Objective 2.2: Improve air quality***

While air quality testing and mitigation are the responsibility of the state and federal governments, New Castle County acknowledges its role in establishing relevant and effective land use and transportation policies that can contribute to improving local air quality.

**Strategy 1: Collaborate with other agencies to achieve reduction in Vehicle Miles Traveled**

Land use and transportation are inextricably linked and can enhance or hinder a person's ability to choose alternatives to driving alone. In order to reduce the number of vehicle miles traveled, work with DelDOT and federal agencies to:

- Making non-motorized travel safer and more appealing;
- Monitoring and planning for potential new vehicle technology and the “door-to-door”/delivery-based economy; and
- Developing in ways that place people in closer access to the places they need to go.

**Strategy 2: Encourage energy efficiency and renewable energy in design of communities and buildings.**

Energy efficiency and use of renewable energy, such as solar and wind, are growing in importance as the use of fossil fuels grows increasingly problematic, as evidenced by deteriorating air quality, climate change, increased public health issues, among other things. Promoting energy efficiency and renewable energy in the design and construction of new buildings and communities is one approach that can be taken at the local level. The County should make efforts to incentivize, encourage and regulate for LEED (Leadership in Energy and Environmental Design) based design, strengthen building codes to encourage

energy efficiency and provide energy efficiency resource materials to homeowners and landlords. In addition, promote the use of the Property Assessed Clean Energy (PACE) Program, which is an economic development strategy with environmental benefits for commercial properties.

**Strategy 3: Form a Task Force to evaluate air quality and related issues and develop an action plan.**

Many communities undertake a sustainability plan process to address these kinds of issues, such as recently done by Newark, Delaware, through a grant from DNREC. Focus should include engagement with the local farming community to explore opportunities to lead the adoption of sustainable practices that improve air quality while at the same time supporting their continued contributions to the local economy and their livelihoods. This may best be accomplished as a countywide initiative with a committee focused on issues specific to southern NCC, such as farming.

***Objective 2.3: Protect important, quality natural resources, including open space for wildlife***

In 2019, the County established the Land Preservation Task Force to examine key questions and shape a plan for enhancing the County's land preservation strategy. The task force will also look at ways to improve collaboration with other entities to increase resources for the purchase and maintenance of land. This plan should be updated to include and coordinate with recommendations of the task force, which are expected in late Summer 2020. Also of importance to natural resources, open space, and wildlife is the mitigation of invasive plant species, which are a threat to the native ecosystem including not only native plant species, but animal life which relies on native species to survive.

**Strategy 1: Establish a strategy for Priority Protection Areas, including incentives, financing, and regulations.<sup>21</sup>**

Priority Protection Areas are concentrations of significant natural resources and/or environmentally sensitive lands that are partially protected through ownership, easements, or by county, state, and federal law. The County anticipates limited development in Priority Protection Areas and policies and actions are intended to further protect these areas in the future. For example, the protection of, and buffering around, public and eased lands and other sensitive natural features should be strongly encouraged. The identification of Priority Natural Resource Areas (and Agricultural Areas, described further below) necessitates the creation of tools and techniques, including funding strategies, which preserve such areas while promoting their productive use (see Figure 8-11).

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<sup>21</sup> Coordinate with the Land Preservation Task Force recommendations due summer 2020.

State and County preservation programs should identify the most appropriate lands for preservation. Given the extent of the areas identified, priority should be placed on securing lands that contribute to a larger ecosystem or habitat area (contiguity, providing interconnections and biodiversity corridors), and lands that could provide a suitable buffer to eased and public properties that would otherwise be at risk. Purchase programs and TDR will be critical to success. Low-density rural development should continue to be permitted, consistent with septic policies and zoning. Consideration should also be given other alternatives to fee-simple purchase or PDR, including but not limited to direct grant programs, tax abatement strategies, impact fees, and donations.

Potential Funding sources to leverage include: Federal Transportation Enhancement Funds, the Delaware Agricultural Lands Preservation Program, DNREC and the Delaware Open Space Council funding programs for park development and acquisition of key Natural Areas and State Resource Area lands, Community Development Block Grant (CDBG) program funds, real estate transfer tax revenues, and trust/foundation/institutional support (philanthropic support such as through the Welfare Foundation or Fair Play Foundation) and institutional support through the private sector.

Further, the County should consider reinstating its Community Planning Assistance Grant Program in support of local planning and preservation initiatives.

While the acquisition of key parcels or development rights to key parcels offers perhaps the ultimate protection for resources, limited funds are generally available for such purposes. It is therefore imperative that acquisition be used in combination with other preservation techniques to achieve the greatest success. For example, it may be possible to use easements to protect buffer areas around fee simple purchases (this may even be achievable through the County's open space development options which require 50% open space set-aside and easement execution). Consideration should be given to securing funds that can be used for several open space related purposes, such as using open space grant funds for spray irrigation and parkland.

Working with large landowners to develop preservation strategies has the potential to pay dividends. For example, combining the purchase of options or development rights with voluntary preservation can save the County money and reduce the "windfall/wipeout" many landowners experience when they are assessed capital gains on the fee-simple sale of land.

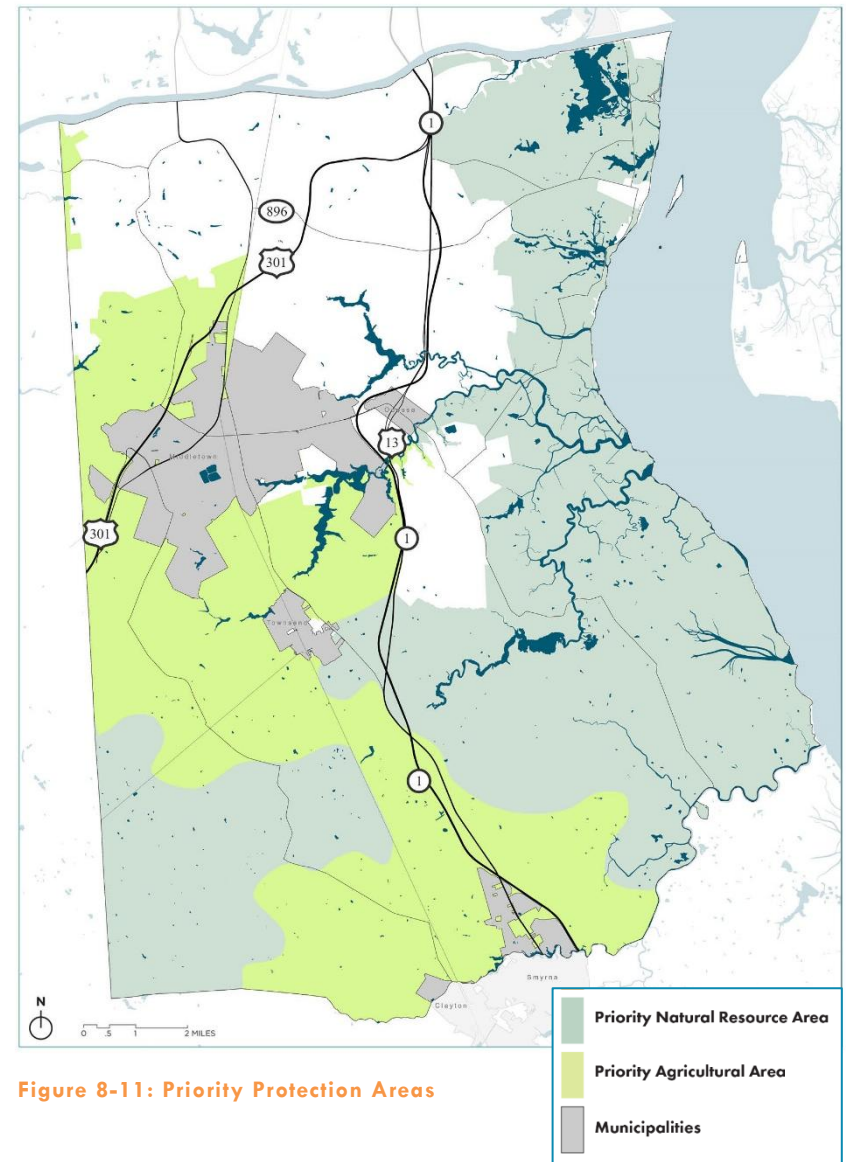


Figure 8-11: Priority Protection Areas



**Strategy 2: Update natural areas inventory and conservation strategy; track natural resources and progress.**

The County has implemented many of the recommendations of the *New Castle County Conservation Strategy* (2002). However, after 18 years, the strategy needs to be updated and expanded to reflect new and emerging laws and regulations, changing technologies, and evolving thinking regarding such issues as climate change and sustainability. A new Natural Areas Inventory and Conservation Strategy should be prepared. A computer-based inventory tied to GIS mapping will allow the County to track progress, select enhancement activities (increased tree canopy, increased habitat, etc.) and monitor losses. Coordinate with the Office of Nature Preserves as they update their Natural Areas Inventory and Conservation Strategy.

**Strategy 3: Create Agricultural or Resource Preservation zoning district(s) that foster the preservation of environmentally sensitive and valuable land through larger minimum lots sizes and use regulations (Objective 2.5, Strategy 3).**

Where applicable, land that is not to be served by sewer by the plan horizon date should receive such a designation.

**Strategy 4: Establish land use regulations that strike a better balance of usable and passive open space that are integrated between developments and the regional park plan.**

**Strategy 5: Collaborate with DNREC and other organizations to further protect Critical Natural Areas and State Resource Areas.**

While the UDC provides some level of protection to Critical Natural Areas (CNAs), regulation alone cannot adequately protect these important natural areas. Coordination with DNREC will allow additional consideration for these areas and help the Land Preservation Task Force prioritize such areas for purchase and easement options.

***Objective 2.4: Prepare for impacts of sea level rise***

**Strategy 1: Reduce the amount of development in areas at risk for sea level rise impacts through downzoning, transfer of development rights or purchase of development rights.**

As discussed above, zoning, TDR and PDR can be effective tools to reduce development in sensitive environmental areas or where it is desirable to preserve a viable agricultural economy. While the extent of sea level rise is difficult to determine, the state's planning efforts have evaluated a rise of between 1 and 5 feet. Mapping undertaken as part of this effort clearly demonstrates the extent to which inundation is likely given the scenarios considered.

Most of the areas expected to experience sea level rise in New Castle County are adjacent to streams and rivers associated with drainage to the Delaware River. Some of these areas lie immediately adjacent to floodplains and floodways, and as such are areas appropriate as buffers to preserve habitat and protect water quality. Given this, considerations regarding zoning densities in these areas should be further evaluated and structures placed outside areas of risk. In addition, TDR and PDR should be considered as tools to prevent development in area at risk for future inundation.

**Strategy 2: Educate property owners who are within areas at risk for sea level rise.**

## **Objective 2.5: Preserve farmland**

### **Strategy 1: Establish a strategy for Priority Protection Areas, including incentives, financing, and regulations.**

The retention of prime agricultural soils and related farming practices should be pursued and coordinated with other organizations, particularly the County's Land Preservation Task Force, whose recommendations are expected in late summer 2020. As with Priority Natural Resource Areas (Objective 2.3, strategy 1), the designation of Priority Agricultural Areas necessitates the creation of tools and techniques, including funding strategies, which preserve such target areas while promoting their productive use.

Specific actions include enhancing purchase of development rights (PDR) and transfer of development rights (TDR) programs and the implementation of true agricultural zoning (see Objective 2.5, strategy 3) should be considered. Additional incentives can be found in the 2018 Farm Bill which includes voluntary programs intended to help farmers and other landowners conserve their lands and their ways of life. Opportunities exist to support sustainable management of farms and forests through conservation practices, as well as provide for sustainable agriculture that also safeguards biodiversity (such as restoring wetlands and planting cover crops to increase soil health). Organizations such as the Nature Conservancy are working with farmers to leverage farm bill funds to keep farms in production rather than being sold for development.

### **Strategy 2: Support farmers by improving existing programs and adding new incentives and remove barriers to supplemental income.**

The County should work to increase partnerships and work with Delaware's agricultural preservation program to make it more effective in the county. Specific recommendations for this are anticipated from the Land Preservation Task Force.

Additional support to farmers is imperative if the County is to preserve a viable agricultural economy into the future. Purchase of Development Rights (PDR) and Transfer of Development Rights (TDR) are appropriate tools that provide farmers an alternative to selling land for development; both should be reevaluated and strengthened. Past efforts by the County to evaluate TDR should be given a fresh look and opportunities to strengthen the program (through higher transfer rights equivalents, transfer right banking, and other incentives currently not offered by the County) should be seriously considered.

Conduct a countywide market study to inform modification of the existing transfer of development rights policy to better achieve preservation goals (viable market and demand) (e.g., consider a County-municipal program, cross district transfers, TDR bank, factoring countywide market and comprehensive plan update); results should be discussed with incorporated communities (intermunicipal transfers).

In addition to land preservation, the County should consider further code revisions to remove barriers to supplemental income (reevaluate farm stand and agritourism limitations) and support value-added agricultural products. The County should incorporate agriculture into economic development strategies to support local farming and its viability as a profession and source of income, which is a crucial factor for maintaining land in agriculture. Furthermore, the County should consider providing funding to and partnering with farm organizations (granges and others) to promote farming to younger generations, 4H programs and "young farmer" programs, all of which generate interest in the future of farming and farmland preservation.

### **Strategy 3: Consider agricultural zoning as a complement to other resource and land preservation-oriented recommendations in this plan.**

The County's land use authority under state law, coupled with its delegated police power authority, permits it to protect defined resources through its regulatory processes. Given the extent to which an existing framework exists to protect resources (namely, the UDC), as well as the extent to which the County currently does protect resources, future protection efforts are more an issue of refinement and extension where necessary and appropriate.

One area in which the County can re-evaluate its zoning is in the largely residential pattern of zoning in Southern New Castle County, in particular the current Suburban (S) and Suburban Reserve (SR). While the relatively low to moderate densities first prescribed to these areas incorporated options for site design flexibility pursuant to open space design options, septic system limitations point to the need to provide alternative forms of development that respect natural resources, reduce low density sprawl and provide viable development options for landowners.

One suggestion is to reevaluate current zoning categories and consider true agricultural zoning with higher transfer of development rights equivalents. Agricultural Zoning provides opportunities for new approaches to TDR programs, such as higher transfer rights equivalents, transfer right banking, and other incentives currently not offered by the County. True agricultural zoning is a land management tool that encourages the preservation of farmland and discourages development of land uses that are incompatible with agricultural uses. This zoning technique discourages land uses that are incompatible with farming, such as those that result in excessive traffic, pollution, or consume large areas of farmland. Effective agricultural zoning is also sustainable because it promotes both the preservation of agricultural land and agriculture as an industry. Effective agricultural zoning can encourage locally grown food and agricultural products and is intended to support the entire agrarian economy. This zoning technique is appropriate in agricultural and rural landscapes, as well as in portions of natural landscapes that are being farmed.

Effective agricultural zoning districts share some common characteristics:

- Commercial agriculture is the primary permitted land use.
- Non-agricultural developments are limited to one lot for each 10-25 (or more) acres.
- Non-farm lots are often regulated by special exception or conditional use, so that new lots do not conflict with agricultural activities.
- Accessory activities that support agriculture are permitted.
- Effective agricultural zoning districts are supported by comprehensive planning policies that are based on objective physical analyses and community preferences.

Agricultural zoning districts are most effective when they are used to protect existing agricultural areas that have not experienced significant development pressure and where the local agricultural economy is still healthy. To this end, the protection of agriculture should be a goal and should be supported by studies documenting that the area contains primarily Class I, II, and III prime agricultural soils. The zoning should permit a wide variety of farm-related land uses, supplemental farm businesses, and other compatible activities.

**Strategy 4: Establish/revise land use regulations to permit farmers to not only develop their property but retain the viability of the agricultural use.**

This can take the form of revised Transfer of Development Rights regulations and/or changes to retain farmland that would have served as passive open space as a family farm subject to an agricultural preservation easement.

## ***Objective 2.6: Enhance the landscape through street trees, reforestation, and other green infrastructure best practices.***

### **Strategy 1: Partner with HOAs/maintenance corporations to enhance landscapes.**

Homeowner maintenance corporations often have high open space maintenance costs and lack the capacity to properly manage its' oversight. Partnering with a local government body to improve and enhance community amenities through landscaping could serve to lower costs while providing a more attractive and better performing open space.

New Castle County could offer lectures and seminars for residents and landscape management firms, provide site assessments and assist with small grant programs. Additional opportunities this partnership could provide include the reforestation of large passive lawn areas and stormwater management maintenance, all of which could translate into a healthier environment for everyone. The County, as part of the GreenNCC initiative, is working to incorporate provisions that will improve the maintenance of open space for new developments.

### **Strategy 2: Coordinate with DelDOT to review and revise, as necessary, design guidance for stormwater infrastructure, street trees and other amenities along roads.**

Improved coordination with DelDOT on design issues would contribute greatly to the maintenance, longevity, and attractiveness of the streetscape, including landscaping, amenities, and stormwater facilities.

The County's Storm Water Pollution Prevention and Management Program (SWPP&MP) was jointly prepared with DelDOT and incorporated towns. Further cooperation and coordination with these parties makes sense and continues affiliations that led to a successful prevention and management plan.

Forest conservation is a major concern; under a "business as usual" scenario, approximately 2,500 acres of forest will be further impacted in southern New Castle County if nothing is done to change development patterns. The County is currently evaluating its reforestation requirements and drafting potential legislation in collaboration with DNREC and a steering committee. Opportunities to reduce fragmentation and enhance the habitat and environmental value of transportation right-of-way should be explored.

Street trees and, more generally, green stormwater infrastructure can serve both to reduce environmental impacts and enhance the community. Roadway designs that factor in the multi-modal traveling public and the environmental sustainability continue to evolve. The County and DelDOT should work together to update design guidance and plan development review processes accordingly. Guidance should address elements such as street trees, roadway widths, etc. (A similar recommendation is found in the State's Blueprint for a Bicycle-Friendly Delaware).

## TRANSPORTATION

The following transportation strategies are based on community input and the results of the detailed transportation analysis that was performed in Phase II of the planning process. The full Transportation Element of this Southern New Castle County Master Plan was produced by WILMAPCO and finalized in August 2020 (link to Transportation Element: <http://www.wilmapco.org/SNCC%20Transportation%20Element%20DRAFT.pdf> )

Goal: Improve mobility options to encourage people in southern New Castle County to use a variety of transportation modes (car, public transportation, walking and bicycling) to reach their destination in a safe, comfortable, and convenient manner.

### *Objective 3.1: Expand public transportation*

#### **Strategy 1: Support DART Proposals to expand transit service.**

As development and population grows, work with DART on new and expanded service. In particular, be aware of new employment centers that may benefit from DART service and an aging population that may require DART services.

#### **Strategy 2: Investigate shared mobility services for areas where growth does not support expanded fixed-route bus service, and to the extent the market allows, expand rideshare and alternative ridesharing network.**

Shared mobility services are transportation services that are shared among users and can often fill the gap of transport when no public transportation is available. An area seeking to establish shared mobility services would have to demonstrate need for the service. Shared mobility services that could be considered in southern New Castle County include: carsharing, where users could rent a car by the hour and ridesharing, which is carpooling and vanpooling often established by employers. Ride-hailing services, such as Uber and Lyft, are currently available in the planning area.

#### **Strategy 3: Improve public transportation facilities.**

Work with DelDOT and developers to build bus pads and connecting sidewalks at new and infill commercial and large residential developments. Depending on the proposed land use, create a large bus stop footprint to include amenities such as shelters, benches, lighting, trash cans and electronic next bus information. To address the growing senior population in southern New Castle County, 55+ communities and new healthcare facilities should be sited at or near existing DART services. Encourage developers to coordinate with DART in the early planning stages.

### *Objective 3.2: Facilitate congestion reduction in southern New Castle County and develop better east-west connections in Middletown (and beyond)*

#### **Strategy 1: Optimize traffic signal timing on a regular basis.**

Traffic signal optimization is the coordination of the timing of a series of traffic lights. Signal optimization improves traffic flow by minimizing stops and delays, which in turn improves safety; reduces bottlenecks, fuel consumption and emissions; and improves air quality and driver satisfaction.

**Strategy 2: Proceed with design and construction of road improvements identified in DeIDOT's Capital Transportation Program and local Transportation improvement Districts. Incorporate the findings from Traffic analysis addendum developed by WILMAPCO in the next update of their Regional Transportation Plan (RTP).**

In Middletown, proposed road improvements include:

- Widening of DE 299
- Eastern extension of Lake Street
- Eastern extension of Green Street
- Western extension of Green Street to create a second crossing of the railroad

**Strategy 3: Monitor traffic within the Town of Townsend.**

In recent years traffic congestion within the Town of Townsend has become a concern, particularly truck traffic. Work with DeIDOT and WILMAPCO, traffic should be studied and identify any mitigation efforts to address traffic congestion. Suggested future improvements have been outlined in the Traffic Analysis Addendum and can be suggested for implementation when traffic conditions reach those thresholds.

### ***Objective 3.3: Establish more/safer walking and biking paths/connections***

**Strategy 1: Conduct a gap analysis for missing sidewalk/ pedestrian path links.**

Households within ½ mile of schools, grocery stores, pharmacies, libraries and transit stops should have safe pedestrian connections to those destinations.

**Strategy 2: Conduct gap analysis for bicycle facilities.**

Households within 2 miles of schools, grocery stores, pharmacies, libraries, parks, transit stops, and park and ride facilities should have safe bicycle connections to those destinations. Encourage these destinations to provide safe bicycle parking options, including bike racks.

**Strategy 3: Connect the towns of Townsend and Middletown with a separated pathway for bicyclists and pedestrians.**

**Strategy 4: Adopt the New Castle County Bicycle Plan once it is completed and implement the proposed network, increasing on-road and separated bike facilities.**

**Strategy 5: Include pedestrian and bicycle facilities as part of all publicly and privately funded road improvements.**

This strategy is consistent with DeIDOT's Complete Streets policy, which ensures that all transportation investments are designed to be safe, comfortable and convenient for all travelers, regardless of their age, ability, or mode of travel.



**Objective 3.4: Enhance Delaware's economic development by fostering and promoting safe and efficient aviation system for the movement of goods, services, and people and encourage and promote aviation and aviation safety.**

**Strategy 1: Develop and maintain compatible land uses in areas surrounding Summit Aviation.**

Review and refine, as necessary, the New Castle County Unified Development Code (UDC) as it relates to Airport uses, to promote development that is compatible with aviation and designed to mitigate risk to airport operations and flying public. This could include limiting new residential development in the approaches of Summit Airport runways for the benefit of the quality of life for future residents of southern New Castle County and continued operation of the airport.

**Strategy 2: Work with Summit Airport to understand its future business plans.**

As Summit continues to expand in Southern New Castle County, it is recommended that there is continued coordination with the DelDOT Office of Aeronautics, including promotion of information on Summit Airport's Economic Impact. In addition, regular contact with New Castle County personnel (i.e. County Executive, County Council Members, the Delaware Prosperity Partnership, Economic Development Department, and Department of Land Use staff) to share updates to the "Economic Impact of Delaware Airports" report which details the economic impact of the State Aviation System.

## **COMMUNITY CHARACTER (AND FACILITIES)**

Goal: Ensure that development and redevelopment in southern New Castle County are compatible with, and enhance the existing community character, including historic properties and design features, the scale of development, and presence of farmland and open space.

**Objective 4.1: Enhance/encourage the continued preservation of rural/small-town/historical character**

**Strategy 1: Foster the creation of relatively dense, walkable village centers in unincorporated areas**

This will allow centralized population that can support more cultural attractions and local business, while preserving the small-town/rural/historic character of other areas. The Southern New Castle County Master Plan has identified a number of strategic village/town center growth areas. These areas envision an integration of residential and nonresidential uses currently in short supply in Southern New Castle County, identified in the scenario maps in Section 6 including the Village of Bayberry and the Town of Whitehall. Actions to support this strategy include:

- Where appropriate, rezone land within Hubs to support mixed-use development.
- Develop a Smart Code/Transect Based zoning district. Larger sites within and adjacent to Hubs could be rezoned accordingly to support coherent cohesive development.
- Reconsider the requirement to create scenic corridors on S & SR property along arterial and collector roads south of the C&D Canal. The current provisions make it difficult to effectively encourage corridor-oriented development and can lead to fragmented "corridors."

**Strategy 2: Encourage planned growth and preservation by reducing the area planned for future sewer service and establishing a farmland preservation program.**

Preservation of open space, farmland, and rural character will require a variety of strategies including regulatory adjustments and incentives. Actions should include providing mechanisms for farm owners to make preservation economically viable as opposed to selling land for development (many farmers feel selling for development is the only option for retirement), in addition to leveraging State and Federal preservation programs. More details are presented in earlier objectives and strategies, including Objective 2.2 and 2.5.

**Strategy 3: Consider whether road segments identified in "The Southern New Castle County Scenic River and Highway Study" should be formally nominated under the State's Byways Program, and/or given further protection.**

Following on the designation of the Bayshore Byway, the County should consider whether other identified road segments identified in "The Southern New Castle County Scenic River and Highway Study" should be formally nominated under the State's Byways Program, and/or given further protection under the Unified Development Code. These roads are integral to the scenic fabric of southern New Castle County and are thus recommended for further protection.

**Strategy 4: Implement Land Preservation Task Force and Historic Preservation Working Group recommendations that enhance open space and preservation of historic resources in southern New Castle County.**

Recently formed, both groups consist of members of the public, community groups, government officials and elected officials dedicated to finding solutions to land preservation and historic preservation throughout the County.

**Strategy 5: Encourage the identification, protection and preservation of historically significant resources using Historic Overlay Zoning and the Historic Review Board process.**

Historic Overlay Zoning is an additional level of protection for historic properties and gives more authority to the County to enforce the preservation and maintenance of historic properties. Any proposed changes to a property with Historic Overlay Zoning are required to be reviewed by the Historic Review Board, an appointed body within the County government that reviews land development applications that could impact historically significant buildings, structures, landscape features and other resources to ensure their proper preservation and/or maintenance.

**Strategy 6: Encourage the continued use of historic structures through adaptive reuse.**

Adaptive reuse is the process of using older, existing buildings or structures for a new purpose, for example, converting a barn into office space. Although adaptive reuse can present engineering and cost challenges, it is an effective way to preserve older structures and ensure the continued preservation of a historic structure by ensuring the continued economic viability of historic properties, which may otherwise be lost. The County is working to expand the eligibility for adaptive reuse, making it a more attractive and feasible incentive to property owners of historic properties.

#### **Objective 4.2: Provide/facilitate development of denser, more walkable development with mixed use**

Consumers today increasingly prefer developments with a mix of uses, which offers the ability to accomplish several tasks within a single setting. Mixed use developments offer many benefits, including reduced vehicle trips, sense of community and place, and convenience for consumers and residents. Mixed use developments that contain a residential component can also enhance the ability of residents to “age-in-place”.

##### **Strategy 1: Create policies and regulations that encourage mixed-use and walkable environments in targeted locations.**

Mixed-use environments within walking distance to neighborhoods offer many benefits. Such environments reduce car travel, enhance economic and social vitality and, often, broaden housing choices. Evidence indicates that mixed-use and walkable environments increase real estate value, thus contributing to fiscal health<sup>22</sup>. Policies and regulations should target areas well-positioned for mixed-use like existing towns and subdivisions like Bayberry and Whitehall.

Encourage mixed-use development through mechanisms such as zoning, property tax abatement incentives, and bond financing for infrastructure that supports mixed use.

##### **Strategy 2: Explore changes to existing building and zoning codes to permit multifamily housing, and smaller lot sizes.**

#### **Objective 4.3: Facilitate more opportunities for family-oriented cultural attractions, entertainment, recreation (museums, YMCAs, etc.)**

As southern New Castle County grows, so will the demand for local, family-oriented amenities, generally located based on market demand, and often density. As such, guiding development to growth areas can aid in creating the demand and density needed to attract these amenities.

##### **Strategy 1: Partner with Office of Tourism, Greater Wilmington Visitors Bureau, and local chambers of commerce to identify and promote key attractions in southern NCC (bird watching, outdoor recreation, agritourism).**

Southern New Castle County offers many opportunities and attractions for tourism, such as bird watching, outdoor recreation, agritourism and historic resources. While local residents enjoy these amenities, it's important to encourage visitors from beyond the area to visit and explore.

##### **Strategy 2: Build on existing assets and features including: byways, historic districts, trails and pathways, civic spaces, and non-profits**

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<sup>22</sup> Source

The Historic Odessa Foundation is an excellent example of a local historic organization that offers a cultural destination in the planning area. The foundation manages an enclave of 18th century historic homes and offers a variety of events to bring visitors to the area, such as the Historic Odessa Brewfest in the fall and the annual Odessa Holiday Tour. Other organizations should work with The Historic Odessa Foundation, and similar organizations, to seek opportunity for collaboration and information sharing to expand the area's existing offerings.

**Strategy 3: Partner with other local governments and organizations to support the local arts community.**

Local arts communities are often small, informal networks of artists and arts organizations that operate on shoestring budgets. Supporting local arts organizations, such as the Gilbert W. Perry Center for the Arts in Middletown, has positive effects on the local economy, character and sense of community in an area. Partnerships between organizations and/or artists can lead to effective marketing campaigns, fundraising efforts and grant opportunities.

## **ECONOMY/JOB**

Goal: Continue to ensure that southern New Castle County has a strong and diversified economy.

***Objective 5.1: Encourage more local, diverse job centers, facilitating shorter commutes***

As southern New Castle County evolves from a predominantly rural, agricultural community to one that also includes bedroom communities, residents are seeking more opportunities to work closer to home. A diverse job center will have a variety of job opportunities in a range of sectors, especially beyond the service sector, which dominates the job base in the planning area.

**Strategy 1: Identify development opportunities that will attract private investment to appropriately zoned districts.**

Emphasis on building upon existing community assets, infill development, etc. Distinction between “growth” and “investment” are important for communities which may not have much projected growth. As noted throughout this document, it is important to funnel development to areas with existing development. Not only does this approach avoid contributing to sprawl, it can create a critical mass of employees which can then trigger demand for amenities such as nearby retail, services and increased transportation options such as a bus stop or vanpool.

**Strategy 2: Consider collaborative approaches to economic development focusing on growing within municipal boundaries.**

Explore the Downtown Development District as means to support smaller scale economic development in towns such as Middletown. Consider a place-based approach as described in “How Small Towns and Cities Can Use Local Assets to Rebuild Their Economies: Lessons from Successful Places” (EPA, 2015). Also consider supporting development of flex spaces.

***Objective 5.2: Support small local businesses***

Small business is the backbone of the American economy. In a small town/rural area such as southern New Castle County, support of small business is paramount to maintaining a healthy local economy.

**Strategy 1: Facilitate smaller scale support for small businesses (see EDGE Grant, SBDC).**

The County's Economic Development Office is a resource that can connect small business owners to available resources. There are funding opportunities and resources that are available to small businesses. For example, Delaware's Division of Small Business offers EDGE Grants, which are competitive grants for both STEM-based companies and non-STEM based companies.

**Strategy 2: Promote local agricultural enterprises and businesses that are consistent with southern NCC's rural character.**

Developing a local food economy protects farmland and natural resources and supports the community's environmental, social, and economic health. Agricultural economic development addresses the creation, retention, expansion, and recruitment of agricultural and food related businesses. These businesses protect farmland, support community health, provided new uses for vacant land, and contribute to the local economy. They may include:

- Farmer's Markets and produce stands
- Locally sourced food
- "Farm to table" restaurants
- Agritourism – including events such as weddings, apple picking
- Outdoor activities at state and local parks

***Objective 5.3: Support/incentivize diversification of industries, and foster opportunities for higher income jobs; living wage/trade/union jobs with retirement benefits***

As noted above, a healthy, diverse economy provides a variety of jobs, including well-paying jobs with desirable benefits.

**Strategy 1: Conduct a complete economic and industry gap analysis to identify southern NCC industry clusters and opportunities.**

Work with the County Office of Economic Development, the Delaware Prosperity Partnership and Delaware's Division of Small Business, to identify industry groups that would be appropriate employers in the planning area, being mindful of the industry's location and workforce needs. An economic and industry gap analysis is a tool that will identify strengths and weaknesses within the economic sectors. This allows for a more finetuned approach to develop programs and policies that support and encourage investment in local businesses.

**Strategy 2: Collaborate with towns to develop place-based approaches to economic development, building on community assets (e.g., local food, agritourism, strong schools, green economy, etc.) and infill.**

Place-based economic development is an approach to economic development that focuses on the industries, infrastructure and workforce that already exist in an area. This approach stands in contrast to the approach where a company comes to an area and requires extensive infrastructure construction and importing and/or creating a workforce.



**Strategy 3: Leverage NCC Innovates Program, Delaware Edge Grant, DDD program to support retention, recruitment, and expansion of businesses to southern NCC Towns and Centers.**

New Castle County and the State of Delaware offer a variety of programs to support business in the County. For example, the County offers the NCCInnovates, a program that provides seed money grants and a business portal to support entrepreneurship. The State of Delaware offers the EDGE Grant, described above, and the Downtown Development Districts (DDD) program which assists communities to strengthen downtowns and business districts.

***Objective 5.4: Facilitate access to more training and education opportunities***

In order to support the community's desire to have more jobs based in southern New Castle County, training and post-secondary education programs should be available.

**Strategy 1: Explore the potential for a Job Training Center in Middletown.**

Job Corps is a tuition-free academic and career technical training program for 16 to 24-year olds administered by the US Department of Labor, which offers a model for a job training and workforce development resource in southern New Castle County. There is a site located in Wilmington, however, potential for a location in the Middletown area should be explored.

**Strategy 2: Work with the Small Business Administration to target southern NCC businesses for credit and education programs.**

The Small Business Administration (SBA) is a program of the federal government that provides support to small businesses. Working through its Small Business Development Center, the SBA can facilitate partnerships between small businesses and mentors, provide training and business consulting, among other services. There is a Delaware Small Business Development Center located in Newark and Georgetown.

***Objective 5.5: Maintain Summit Airport as an Economic Driver in Southern New Castle County***

**Strategy 1: Review and refine, as necessary, the New Castle County Unified Development Code (UDC) as it relates to Airport uses, to promote development that is compatible with aviation and design that mitigates risk to airport operations and the flying public.**

This could include limiting new residential development in the approaches of Summit Airport for the benefit of the quality of life of future residents of southern New Castle County and continued operation of the airport.

**Strategy 2: Continue coordination with the DelDOT Office of Aeronautics, including promotion of information on Summit Airport's Economic Impact**

Coordinate on Part 77 Airspace reviews through continued enforcement of Sec. 40.03.432 of the UDC and maintain the section's reference to 2 Delaware Code § 601-603 (Obstructions in Airport Approach Areas).

The Office of Aeronautics maintains a report called, “Economic Impact of Delaware Airports,” which details the economic impact of the State Aviation System. Make this report available to the County Executive, County Council Members, the Delaware Prosperity Partnership, Economic Development Department, and Department of Land Use staff.

**Strategy 3: Work with Summit Airport to understand its future business plans as it continues to expand in southern NCC.**

Consider a public-private partnership with Summit to make runway accessible real estate, ideal for small MRO operations, available for promotion and marketing by the County Economic Development Director.

Resources to support these economic development objectives and strategies include:

- Delaware Prosperity Partnership (DPP)
- Small Business Development Center (SBDC) @ University of Delaware
- State Office of Tourism
- Greater Wilmington Visitors Bureau
- Edge Grant – Grants of up to \$50,000 for small businesses/entrepreneurs
- Downtown Development District
- Opportunity Zones (though the designation only pertains to a portion of Smyrna in Kent County, adjacent to New Castle County)

## ***Implementation Considerations***

This Southern New Castle County Master Plan touched on the full range of issues of a community. The planning process cultivated the concerns and ideas of the community and stakeholders, bringing forth a comprehensive framework of goals and objectives. Plan recommendations and strategies focus on fundamental land use and transportation<sup>23</sup> growth and coordination issues to form the necessary foundation for future growth in the area. The other important and interrelated components of the plan are also addressed, however, in some cases findings reveal the need for further study and planning. Many of these

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<sup>23</sup> The Transportation Element of this master plan was produced by WILMAPCO and is available on their website: <http://www.wilmapco.org/SNCC%20Transportation%20Element%20DRAFT.pdf>

issues arising here in the southern part of the county will benefit from further study through the countywide comprehensive planning process, which will run from June 2020 through 2022. The remainder of this section highlights key implementation considerations both related to the core land use recommendations (associated with Overarching recommendations on pages 55-62) and other plan elements.

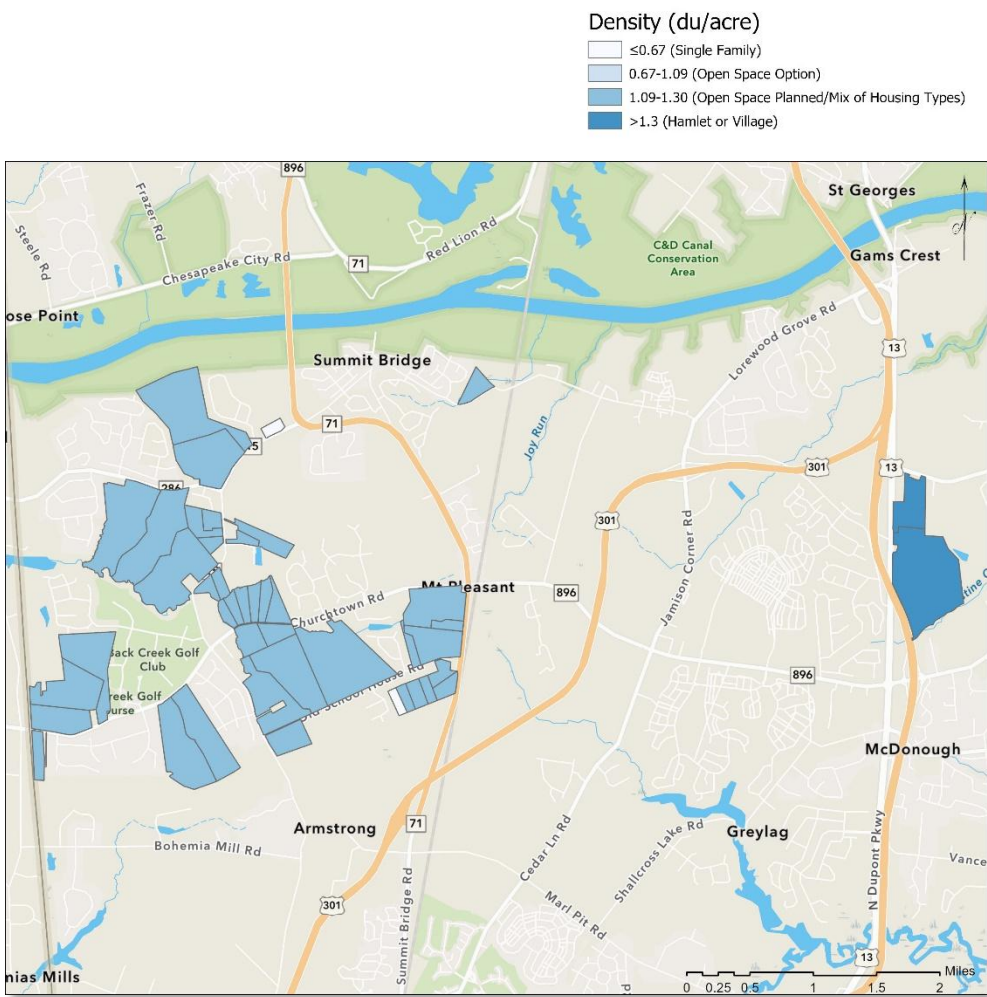
## **FUNDAMENTAL LAND USE ELEMENTS**

The fundamental land use elements of this plan form the foundation for achieving the community objectives of sustainably managing future growth and strategically preserving land and resources. Those fundamental elements include modifications to the future land use map and sewer service area maps and adjustment of zoning definitions and designations. (The elements are featured in detail with Overarching recommendations on pages 55-62).

For many, the question of “so what will this look like and how is my neighborhood likely to change?” arises. Shown in Figure 8-12, is a map of the parcels in the study area where planned future sewer and future land use could experience the most change from what is on the ground today. (Notably, the possible change to this area without implementation of this plan WOULD NOT be any different; in other words, if this plan were not to be implemented, the possibilities for development in the area shown would be the same as shown.)

The following graphics illustrate the type of development that would be possible as a result from the plan’s fundamental land use recommendations:

Figure 8-12: Development styles/densities



## **OTHER KEY ELEMENTS**

There are elements addressed by this plan that are not solely important to southern New Castle County. These larger topics; include county emergency medical services (EMS) and public safety, affordable housing, infrastructure and public services such as libraries and parks, farming and farmland preservation (specifically TDRs), and coordination with municipalities and joint planning areas should be further discussed and addressed in the county's Comprehensive Plan update, NCC@2050. The comprehensive planning process is currently underway and the plan will be completed in 2022.

### **EMS and Public Services**

Southern New Castle County's poses unique challenges regarding adequate EMS and Public Safety services. Capacity, a funding and equitable distribution of services are larger County issues that should be further discussed as part of the County Comprehensive Plan update.

### **Affordable Housing**

The moderately priced dwelling unit (MPDUs) program, addresses affordable housing units within new developments requiring a rezoning. There are 216 MPDUs in southern New Castle County, of which, 141 are built and occupied. While successful, there are many facets of housing affordability that need further exploration, including housing affordability within existing neighborhoods and developments, affordability within the rental market, and retention of existing renters and homeowners in such units, as well as exploring possible relationships between zoning and affordability. Housing affordability also includes other considerations such as access and distance to jobs and transportation costs. Affordable housing should further, in coordination with the Department of Community Services, be evaluated as part of the County Comprehensive Plan update.

### **Public Services**

Southern New Castle County has several libraries and county parks located in areas serving the largest percentage of the population. The Appoquinimink Community Library, located in downtown Middletown, is main library serving southern New Castle County. It will relocate to a larger facility, currently under construction. The Corbit-Calloway Memorial Library, located in Odessa, is the only other County library in southern New Castle County. While the vast majority of planned recreational spaces in southern New Castle County are privately maintained, resulting from the residential development of land, there are five County-maintained parks including; Wiggins Mill Park, Townsend Park, Parkside Park, Healthways and Back Creek Park. The County is continuing to evaluate and plan for new recreational opportunities for county residents. A new county park is planned to east side of Shallcross Lake Road north of Marl Pit Road will provide a much-needed amenity. The Comprehensive Plan Update should ensure that such services are equitably distributed throughout the county, including Southern New Castle County.

## Farmers/Transfer of Development Rights

Southern New Castle County has an abundance of prime soils that are highly productive for agricultural products. It is this soil that also makes the area highly sought after for development. While this plan lays the groundwork for farmland/rural preservation, the pressures that feed this tension between continuing to farm versus selling off farmland for development will limit success without further actions on strategies outlined in this plan, in the Land Preservation Task Force Report (2020), and through the countywide comprehensive plan.

One existing, yet underutilized preservation tool is the Transfer of Development Rights (TDR) provisions in the Unified Development Code (UDC). This program has been rendered largely ineffective in transferring development to areas with adequate infrastructure as a result of a limitation of the receiving site to have to be located in the same planning district as the sending site. While this specific limitation results from the Delaware State Code, there are provisions within the UDC that should be re-examined to bolster the program. Exploring this issue in a countywide context is necessary.

## Municipal Coordination

The Southern New Castle County Master Plan has been an effort that has sought to establish better relationships and coordination between the County and municipalities with the goal of crafting a plan that considers municipal planning efforts while establishing coherent, consistent planning policy for the unincorporated areas. Future efforts should continue to cultivate successful intergovernmental coordination, including collaboration at the state, county, and local level to define an approach and methods for inter-jurisdictional land use planning, such as joint planning areas.



## Implementation Matrix

LAND USE & PLANNING (Overarching)		IMPLEMENTATION	
Objectives	Strategies / Recommendations	When? (near: 1-5 years . mid: 5-10 years, long-term: >10 years)	Who?
Objective 0.1 : Amend the New Castle County Comprehensive Development Plan for Consistency with the Goals and Objectives of this Master Plan.	Amend the Future Land Use Map consistent with the Plan's Recommendations.	1-5 years	NCC
	Amend the Sewer Service Area Map to include areas planned and not planned for sewer service.	1-5 years	NCC
	Delineate a Growth Area Boundary consistent with the Plan and the two maps mentioned in Strategies 1 and 2.	1-5 years	NCC, municipalities
	Incorporate the Southern New Castle County Master Plan into the New Castle County Comprehensive Development Plan by reference.	1-5 years	NCC
Objective 0.2 :Adjust zoning definitions and designations for clarity, predictability, and alignment with the development goals and objectives of this Plan.	Establish caps on the maximum base site areas permitted for lower density single housing type development options in the Suburban (S) zoning district	1-5 years	NCC
	Residential land, not zoned Neighborhood Conservation, in the sewer service area should be designated "Suburban" (S). Residential land, not zoned Neighborhood Conservation or Suburban Estate, outside of the sewer service area should be zoned SR. The definition of SR in Article 2 of the UDC currently indicates that all SR zoned land is intended to be rezoned to S and at such time will receive sewer at some point in the future. This definition should be revised to indicate that sewer service is not currently planned for SR zoned land. Where appropriate, and consistent with Objective 2.3, Strategy 3 land identified as having a high agricultural value or is environmentally sensitive should be zoned in a manner that adequately protects the resource.	1-5 years	NCC
Objective 0.3 : Coordinate planning and implementation with other levels of government.	NCC and the Office of State Planning Coordination should work together to ensure the State Strategies map considers the final recommendations of this Master Plan, including designation of areas for growth and areas for preservation	1-5 years	NCC, Office of State Planning Coordination
	NCC and the incorporated towns should continue coordination and collaboration on development, infrastructure, and policies to support achievement of the goals and objectives of this plan, including using joint planning areas	1-5 years	NCC, municipalities

Objective 0.4: Establish Corridor Hub Growth Areas	Rezone identified parcels and amend the Future Land Use Map to ensure that the properties are developed in accordance with the Smart Code provisions of the UDC	1-5 years	NCC
	Create a new Future Land Use category - Hamlet and Village Areas	1-5 years	NCC
	Remove the Hamlet and Village provisions from the Suburban Zoning District and create a Hamlet and Village zoning district	1-5 years	NCC

GOAL 1. QUALITY OF LIFE/HEALTH: Residents of Southern New Castle County have access to the amenities and services that help		IMPLEMENTATION	
Objectives	Strategies / Recommendations	When? (near: 1-5 years . mid: 5-10)	Who?
Objective 1.1 :Achieve access to recreation for all ages--both indoor and outdoor.	Add new Neighborhood Parks and District Parks in Southern New Castle County.	5-10 years	NCC Public Works
	Ensure interconnectivity of parks, open space, and other recreational resources.	5-10 years	NCC Land Use, NCC Public Works, DelDOT
	Develop relationships and establish partnerships for joint location of community facilities.	1-5 years	NCC, School District, Community organizations
	Evaluate policy for accepting community open space from developers or homeowner associations to ensure sustainable maintenance of park and open space into the future.	1-5 years	NCC Land Use, NCC Public Works
	Explore possible passive recreational facilities east of SR13.	5-10 years	NCC, DNREC, Community organizations, Land Preservation Task Force
	Work with residents and property owners adjacent to parks to identify and work on park enhancements and potential expansions.	1-5 years	NCC, Community organizations
	Consider Reorganizing the NCC "Parks" & "Recreation" Functions.	1-5 years	NCC
Objective 1.2 : Increase opportunities for "aging in place", including access to quality healthcare and graduated care for aging population.	Evaluate existing inclusionary housing programs and consider providing additional incentives to increase production of affordable family units in high-opportunity areas.	1-5 years	NCC, State Housing Authority
	Promote access to daily needs, particularly healthcare, within growth centers by encouraging local jurisdictions and the County to waive or reduce fees for affordable housing.	5-10 years	NCC
	To help preserve existing rental stock for low-to-moderate income households, revise County code policies to require regular inspections to reduce displacement and fear of retaliation by landlords .	1-5 years	NCC, NCC Community Services
	Expand the availability of quality rental stock for low-to-moderate income households by conducting additional outreach to landlords on the County's Small Area Fair Market Rent program.	1-5 years	NCC, NCC Community Services
	Expand transportation connectivity to enhance access between housing opportunities and other essential daily needs .	5-10 years	DelDOT, DART

Objective 1.3 :Continued improvement of emergency services; types of equipment and response time.	Work to ensure there is adequate capacity and facilities for emergency and police services.	1-5 years	NCC
	Ensure emergency and police services capacity and funding is available as population grows in southern New Castle County (i.e. Impact Fees)	5-10 years	NCC
Objective 1.4 : Increase locally grown food (production and consumption).	Implement forthcoming strategies from the County's Land Preservation Task Force Agriculture Committee, focusing on supporting agriculture as part of a thriving local economy.	1-5 years	NCC

GOAL 2. ENVIRONMENT: Environmental protection and farmland preservation are considered a priority in Southern New Castle		IMPLEMENTATION	
Objectives	Strategies / Recommendations	When? (near: 1-5 years . mid: 5-10 years, long-term: >10 years)	Who?
Objective 2.1 : Improve surface water and groundwater quality.	Clearly incorporate sewer service area maps and the update process into the Comprehensive Development Plan in order to better manage growth and infrastructure.	1-5 years	NCC Land Use, NCC Public Works
	Finalize an updated sewer facility plan.	1-5 years	NCC Land Use, NCC Public Works
	Encourage new development in Sewer Service Areas and regulate septic use for low-density development consistent with County Septic Policy.	1-5 years	NCC Land Use, NCC Public Works
	Consider additional safeguards for Water Resource Protection Areas (WRPAs) and the public water supply.	1-5 years	NCC, DNREC
	Ensure consistency between proposed sewer service areas and other growth management maps and policy.	1-5 years	NCC Land Use, NCC Public Works
	Update Chapters 38 & 40 of NCCC for consistency and coordinated processes	1-5 years	NCC Land Use, NCC Public Works
Objective 2.2 : Improve air quality.	Collaborate with other agencies to achieve a reduction in Vehicle Miles Traveled (VMT)	>10 years	DelDOT
	Encourage energy efficiency and renewable energy in design of communities and buildings.	1-5 years	NCC
	Form a Task Force to evaluate air quality and related issues and develop an action plan.	1-5 years	NCC, DNREC

Objective 2.3 : Protect important, quality natural resources, including open space for wildlife	Establish a strategy for Priority Protection Areas, including incentives, financing, and regulations	1-5 years	NCC
	Update natural areas inventory and conservation strategy; track natural resources and progress.	1-5 years	NCC
	Create Agricultural or Resource Preservation zoning district(s) that foster the preservation of environmentally sensitive and valuable land through larger minimum lots sizes and use regulations (Objective 2.5, Strategy 3). Where applicable, land that is not to be served by sewer by the plan horizon date should receive such a designation.	1-5 years	NCC
	Establish land use regulations that strike a better balance of usable and passive open space that are integrated between developments and the regional park plan.	1-5 years	NCC
	Collaborate with DNREC and other organizations to further protect Critical Natural Areas and State Resource Areas .	1-5 years	NCC
Objective 2.4 : Prepare for impacts of sea level rise	Reduce the amount of development in areas at risk for sea level rise impacts through downzoning, transfer of development rights or purchase of development rights.	1-5 years	NCC
	Educate property owners who are within at-risk areas.	1-5 years	NCC, DNREC
Objective 2.5 : Preserve farmland	Establish a strategy for Priority Protection Areas, including incentives, financing, and regulations.	1-5 years	NCC, State of Delaware, NCC Land Preservation Task Force
	Support farmers by improving existing programs and adding new incentives and remove barriers to supplemental income.	1-5 years	NCC, State of Delaware
	Consider agricultural zoning as a complement to other resource and land preservation-oriented recommendations in this plan.	1-5 years	NCC
	Establish/revise land use regulations to permit farmers to not only develop their property but retain the viability of the agricultural use.	1-5 years	NCC
Objective 2.6 : Enhanced landscape through street trees, reforestation, and other green infrastructure best practices	Partner with HOAs/maintenance corporations to enhance landscapes.	5-10 years	NCC, HOAs, community organizations
	Collaborate with DelDOT to review and revise, as needed, design guidance subject to DelDOT review to foster enhanced streetscapes and public infrastructure	1-5 years	NCC, DelDOT



GOAL 3. TRANSPORTATION: People in Southern New Castle County can use a variety of transportation modes (car, public		IMPLEMENTATION	
Objectives	Strategies / Recommendations	When? (near: 1-5 years . mid: 5-10	Who?
Objective 3.1 : Expanded public transportation	Support DART Proposals to expand transit service.	1-5 years	DART, DeIDOT, WILMAPCO
	Investigate shared mobility services for areas where growth does not support expanded fixed-route bus service, and to the extent the market allows, expand rideshare and alternative ridesharing network.	1-5 years	DART, DeIDOT, WILMAPCO
	Improve public transportation facilities.	1-5 years	DART, DeIDOT, WILMAPCO
Objective 3.2: Facilitate congestion reduction in Middletown and develop better east-west connections in Middletown (and beyond).	Optimize traffic signal timing on a regular basis.	1-5 years	DeIDOT
	Proceed with design and construction of road improvements identified in DeIDOT's Capital Transportation Program, WILMAPCO's regional Transportation Program, and local Transportation improvement Districts.	>10 years	DeIDOT, WILMAPCO
	Monitor traffic within the Town of Townsend.	1-5 years	DeIDOT, WILMAPCO, Town of Townsend
Objective 3.3 : More/safer walking and biking paths/connections.	Conduct a gap analysis for missing sidewalk/ pedestrian path links.	1-5 years	DeIDOT, WILMAPCO
	Conduct gap analysis for bicycle facilities.	1-5 years	NCC, DeIDOT, WILMAPCO
	Connect the towns of Townsend and Middletown with a separated pathway for bicyclists and pedestrians.	>10 years	DeIDOT, WILMAPCO
	Adopt the New Castle County Bicycle Plan once it is completed and implement the proposed network, increasing on-road and separated bike facilities.	1-5 years	NCC, DeIDOT, WILMAPCO
	Include pedestrian and bicycle facilities as part of all publicly and privately funded road improvements.	1-5 years	DeIDOT, NCC, WILMAPCO
Objective 3.4: Enhance Delaware's economic development by fostering and promoting safe and efficient aviation system for the movement of goods, services, and people and encourage and promote aviation and aviation safety.	Develop and maintain compatible land uses in areas surrounding Summit Aviation.	1-5 years	NCC
	Work with Summit Airport to understand its future business plans	1-5 years	DeIDOT, NCC, Delaware Prosperity Partnership

GOAL 4. COMMUNITY CHARACTER (and facilities): Development and redevelopment in Southern New Castle County are compatible		IMPLEMENTATION	
Objectives	Strategies / Recommendations	When? (near: 1-5 years . mid: 5-10)	Who?
Objective 4.1 : Enhance/encourage the continued preservation of rural/small-town/historical character	Foster the creation of relatively dense, walkable village centers in unincorporated areas	5-10 years	NCC
	Encourage planned growth and preservation by reducing the area planned for future sewer service and establishing a farmland preservation program.	1-5 years	NCC, State of Delaware
	Consider whether road segments identified in "The Southern New Castle County Scenic River and Highway Study" should be formally nominated under the State's Byways Program, and/or given further protection.	1-5 years	NCC
	Implement Land Preservation Task Force and Historic Preservation Working Group recommendations that enhance open space and preservation of historic resources in southern New Castle County.	1-5 years	NCC, Land Preservation Task Force
	Encourage the identification, protection and preservation of historically significant resources using Historic Overlay Zoning and the Historic Review Board process.	1-5 years	NCC
	Encourage the continued use of historic structures through adaptive reuse.	1-5 years	NCC
Objective 4.2 : Provide/facilitate development of denser, more walkable development with mixed use	Create policies and regulations that encourage mixed-use and walkable environments in targeted locations.	1-5 years	NCC
	Explore changes to existing building and zoning codes to permit multifamily housing, and smaller lot sizes.	1-5 years	NCC
Objective 4.3 : Facilitate more opportunities for family-oriented cultural attractions, entertainment, recreation (museums, YMCAs, etc.)	Build on existing assets and features including: byways, historic districts, trails and pathways, civic spaces, and non-profits	1-5 years	NCC

GOAL 5. ECONOMY/JOB: Southern New Castle County has a strong and diversified economy.		IMPLEMENTATION	
Objectives	Strategies / Recommendations	When? (near: 1-5 years . mid: 5-10)	Who?
Objective 5.1: Encourage more local, diverse job centers, facilitating shorter commutes	Identify development opportunities that will attract private investment to appropriately zoned districts.	1-5 years	NCC, municipalities, Chambers of Commerce
	Consider collaborative approaches to economic development focusing on growing within municipal boundaries.	1-5 years	NCC, municipalities, Chambers of Commerce
Objective 5.2: Support small local businesses	Facilitate smaller scale support for small businesses (see EDGE Grant, SBDC).	1-5 years	NCC, municipalities, Chambers of Commerce
	Promote local agricultural enterprises and businesses that are consistent with southern NCC's rural character.	5-10 years	NCC, Land Preservation Task Force / NCC Farm Bureau
Objective 5.3: Support/incentivize diversification of industries, and foster opportunities for higher income jobs; living wage/trade/union jobs with retirement benefits	Conduct a complete economic and industry gap analysis to identify southern NCC industry clusters and opportunities.	1-5 years	NCC
	Collaborate with towns to develop place-based approaches to economic development, building on community assets (e.g., local food, agritourism, strong schools, green economy, etc.) and infill.	1-5 years	NCC, municipalities, Chambers of Commerce
	Leverage NCC Innovates Program, Delaware Edge Grant, DDD program to support retention, recruitment, and expansion of businesses to southern NCC Towns and Centers.	1-5 years	NCC, municipalities, Chambers of Commerce
Objective 5.4: Facilitate access to more training and education opportunities	Explore the potential for a Job Training Center in Middletown.	5-10 years	NCC
	Work with the Small Business Administration to target southern NCC businesses for credit and education programs.	1-5 years	NCC, SBA

Objective 5.5: Maintain Summit Airport as an Economic Driver in Southern New Castle County	Review and refine, as necessary, the New Castle County Unified Development Code (UDC) as it relates to Airport uses, to promote development that is compatible with aviation and design that mitigates risk to airport operations and the flying public.	1-5 years	NCC, DelDOT
	Continue coordination with the DelDOT Office of Aeronautics.	1-5 years	NCC, DelDOT
	Work with Summit Airport to understand its future business plans as it continues to expand in southern NCC.	1-5 years	NCC, DelDOT, Summit Airport

## 9. References / Resources

- 2006. Ninth Report to the Governor and the General Assembly Regarding the Progress of the Delaware Water Supply Coordinating Council (Estimates of Water Supply and Demand in Southern New Castle County through 2050) (<http://www.dnrec.delaware.gov/Admin/Documents/WSCC/WSCC%20Ninth%20Report%20To%20The%20Governor%20And%20The%20General%20Assembly.pdf>)
- 2008. Southern New Castle County Scenic River and Highway Study (<https://www.nccde.org/DocumentCenter/View/757/Southern-NCC-Scenic-River-and-Highway-Study>)
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- 2013. Delaware's Bayshore Byway (<https://deldot.gov/Programs/byways/index.shtml?dc=route9>)
- 2015. US EPA. How Small Towns and Cities Can Use Local Assets to Rebuild Their Economies: Lessons from Successful Places. ([https://www.epa.gov/sites/production/files/2015-05/documents/competitive\\_advantage\\_051215\\_508\\_final.pdf](https://www.epa.gov/sites/production/files/2015-05/documents/competitive_advantage_051215_508_final.pdf))
- 2016. Wastewater Facilities Evaluation for the Southern Sewer Service Area
- 2017. Recommendations of the New Castle County Parks Task Force report
- 2019. Use of On-Site Wastewater Treatment Systems in Southern New Castle County (<https://www.nccde.org/DocumentCenter/View/34268/NCC-On-Site-Septic-SystemRPT-Rev-1-July-2019pdf?bidId=>)
- 2019 (draft). Water Supply and Demand in Southern New Castle County through 2050 (<http://www.wrc.udel.edu/wp-content/uploads/2019/09/WaterSupplyandDemandinSouthernNewCastleCountythrough2050draftSep2019.pdf>)
- 2019. White Paper: Southern New Castle County Wastewater Plan. (<https://www.nccde.org/DocumentCenter/View/34269>)

Appendix/Supporting Information

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## ***Sea Level Rise Impacts on Transportation***

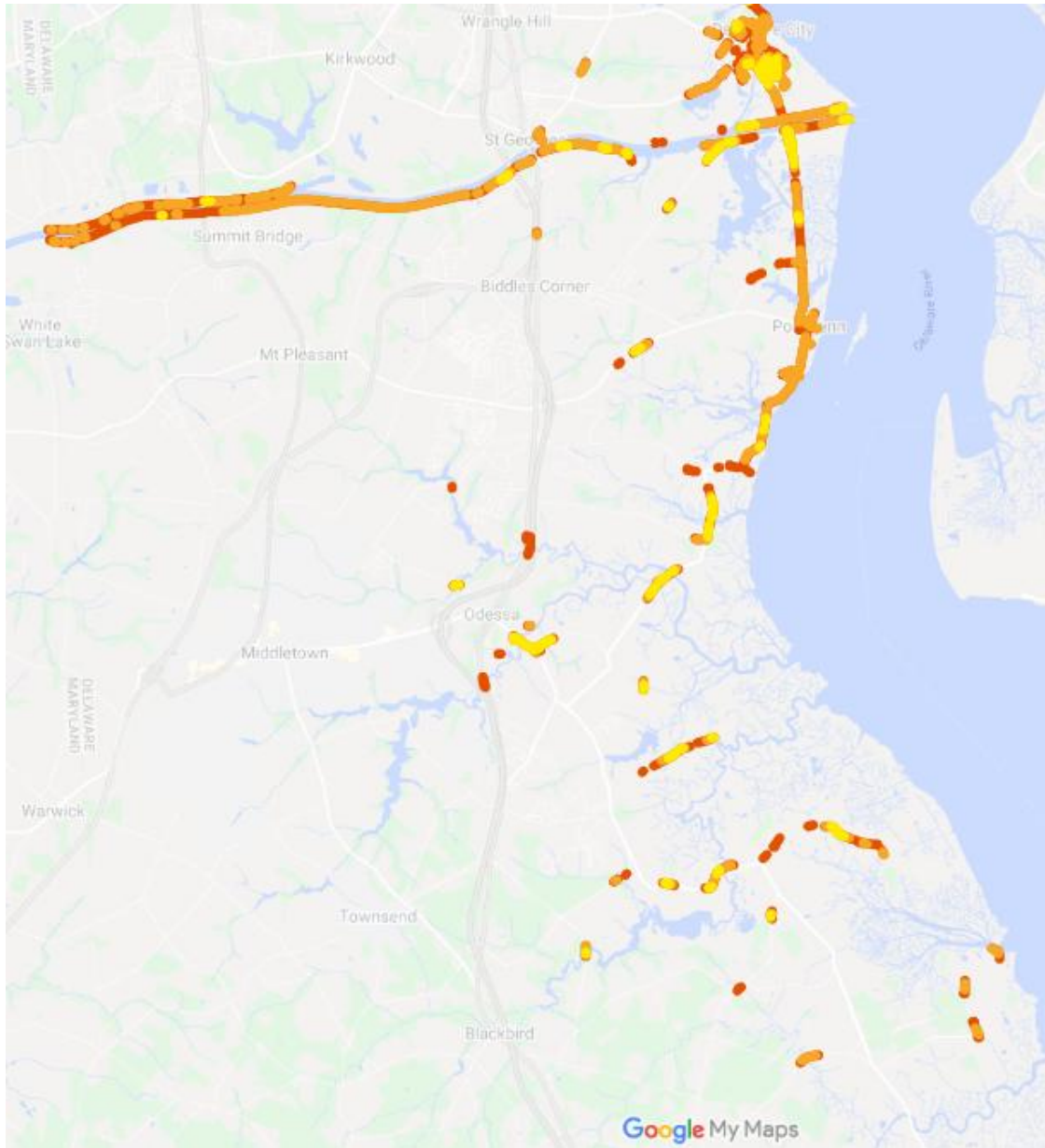


Figure 0-1

## ***Existing and Future Land Use***

The total land area of southern New Castle County is approximately 122,000 acres, nearly 40% of the 316,000 acres countywide. Although some overlap exists, according to the 2012 land use/land cover data from the State<sup>24</sup>, agricultural land use and wetlands account for approximately 70% of the land area, and approximately 18% of the area is developed (Figure 0-2).

Figure 0-2 shows the geographic distribution of development (in red) and the other major categories of land use/land cover. Notably, development is most concentrated along the Route 1 corridor, in and around the incorporated municipalities, and dispersed in the central and northwestern portions of the planning area. The map and numbers represent a snapshot in time.

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<sup>24</sup> The 2012 land use/land cover dataset from the State is the most recent; figures of developed land are likely to be higher as of 2019 than what is shown, given additional development of land that has occurred during the intervening years. Updated land use/land cover data is expected to be available in the next 6 months to 1 year and should be used going forward to evaluate and better understand land use change over time.

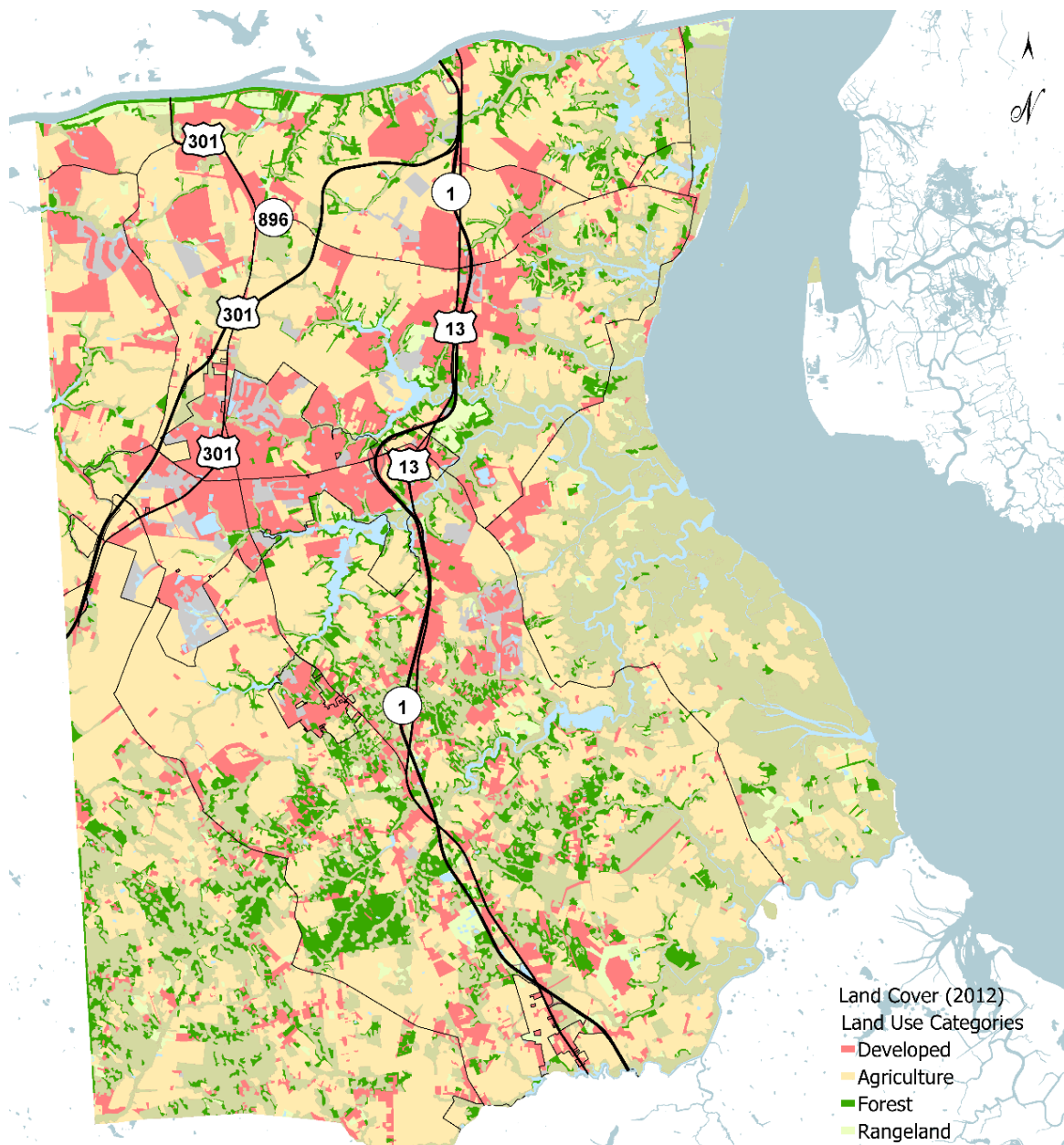
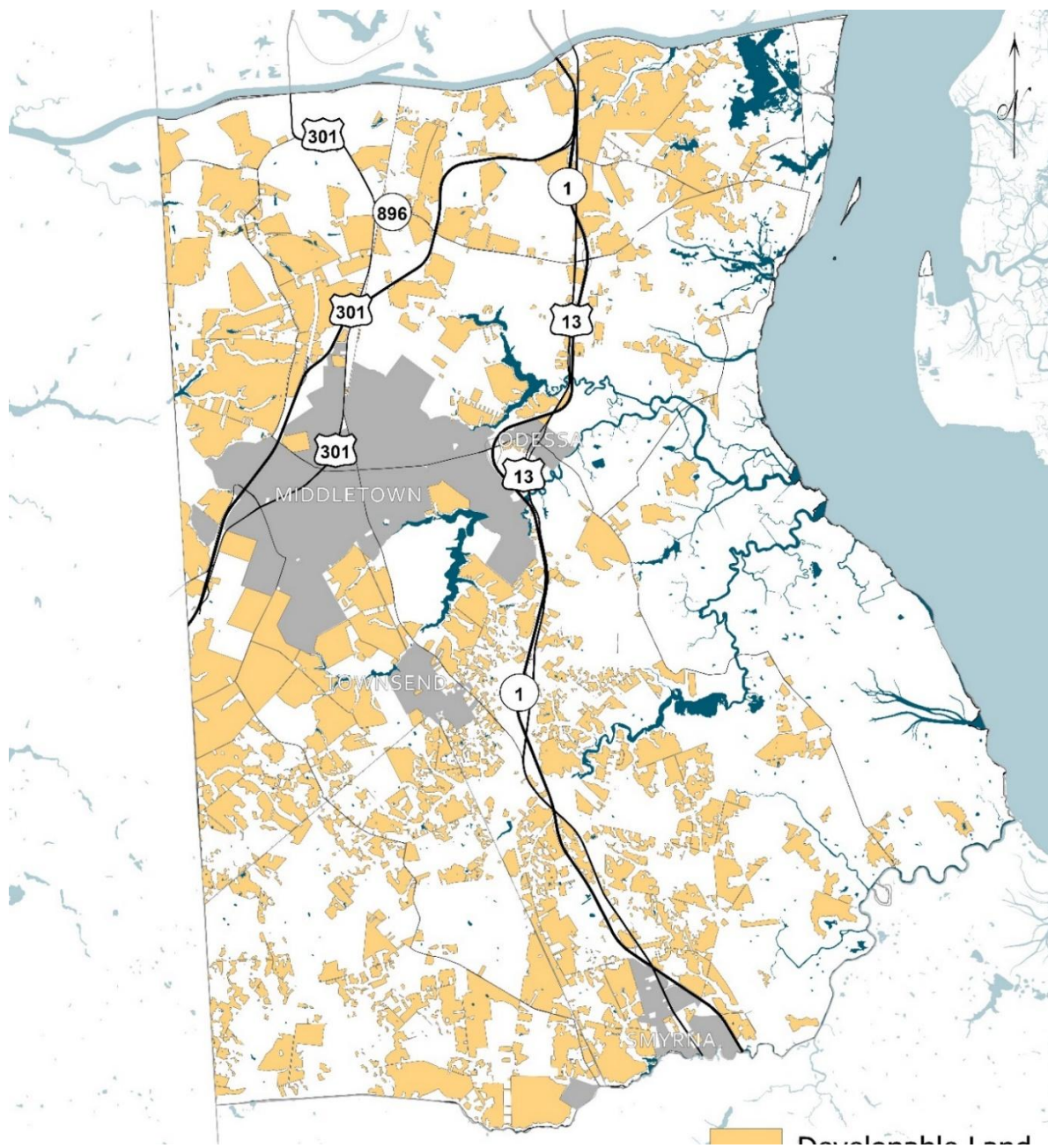


Figure 0-2: 2012 Land Use/Land Cover (Source: 2012 Land Use/Land Cover Map, State of Delaware)



**Figure 0-3: Developable Lands, Includes land that may be constrained by less than 100%; WRPA, CNA, Forest, and Steep Slopes (Source: New Castle County Department of Land Use)**

Of the total 122,000 acres in southern New Castle County, there are approximately 29,440 acres of unprotected, undeveloped, and unconstrained lands, the majority of which are developable (Figure 0-3)<sup>25</sup>. Of these acres, approximately 25,707 (87%) are in agriculture, 3,020 (10%) are forest, and approximately 713 (3%) are rangeland. There are approximately 37,358 acres of protected lands, including easements, parks, and other land permanently preserved as resource land preservation in the planning area. These areas are expected to remain constant, given their protections. However, the percentage of agricultural land is anticipated to go down while developed land increases as farms are converted to residential and other development. The exact degree of change will be contingent upon growth management and preservation strategies going forward.

The transition of agricultural land to subdivisions and development has generally occurred in and around Middletown, the central core, and the north and west portions of the planning area.

## **FUTURE LAND USE**

The current Future Land Use Map designates more than 65% of the Southern New Castle County Master Plan planning area as Resource and Rural Preservation (Figure 0-4 ). About 30% of the area is designated for New Community Development (Suburban zoning) and Low Density Residential (mostly Suburban zoning). Land classified as high, medium, and very low density makes up just under 2% of the planning area. The remaining 3% of land is classified for non-residential development.

The Current Future Land Use map (Figure 0-4) is both overly general in some designations and overly specific in others (e.g. Low Density Residential applied to individual parcels across the Rural Resource and Preservation areas). Consequently, it is not as effectively guiding land use decisions in a way that will achieve the community's vision. Updates will help better coordinate the community's vision and guide growth and development through 2050 in southern New Castle County.

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<sup>25</sup> Includes land that may be constrained by less than 100%; WRPA, CNA, Forest, and Steep Slopes



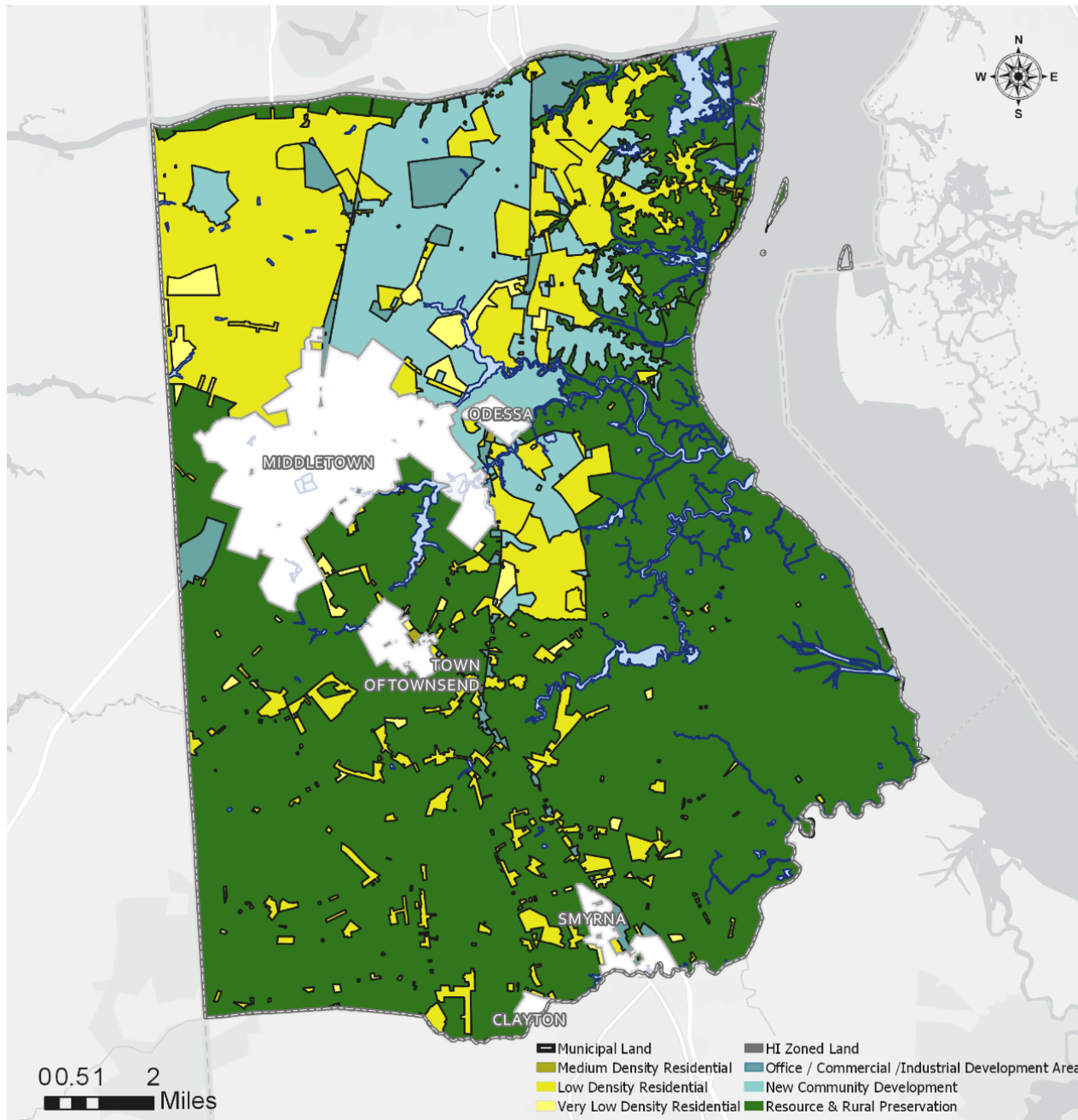


Figure 0-4: Future Land Use Map (Source: Comprehensive Plan for New Castle County, 2012)



# Development Activity

## Historical

Since the adoption of the Unified Development Code in 1998, New Castle County has recorded 33 residential subdivision plans within the Southern New Castle County Master Plan planning area, totaling 8,904 residential dwellings (Figure 0-5). Since the 2012 Comprehensive Development Plan was adopted, 3,396 residential units and 3,484,561 square feet of nonresidential gross floor area has been recorded. That amounts to not quite 400 residential units and 500,000 square feet of non-residential gross floor area per year, which does not include the incorporated portions of the planning area.

Patterns of single-family residential development in the planning area have changed over time (Figure 0-6). Between 1954 and 1970, most single-family development happened north of the C&D Canal; development in southern New Castle County was largely centered in Middletown. As single-family residential development shifted from north of the Canal to south, more intense concentrations of single-family development were seen in the northern part of the Southern New Castle County Master Plan planning area, and within/around Middletown, Odessa, and Townsend.

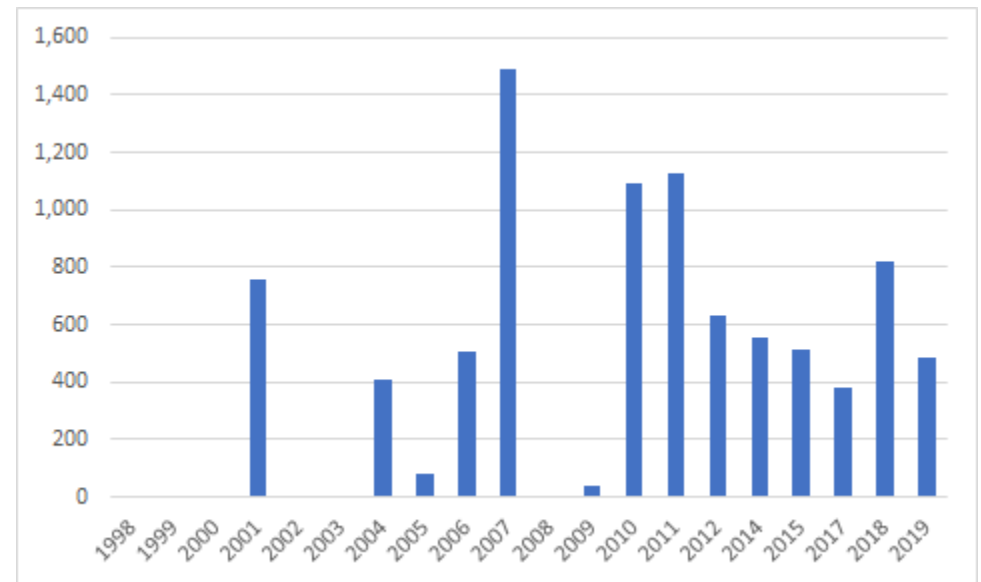
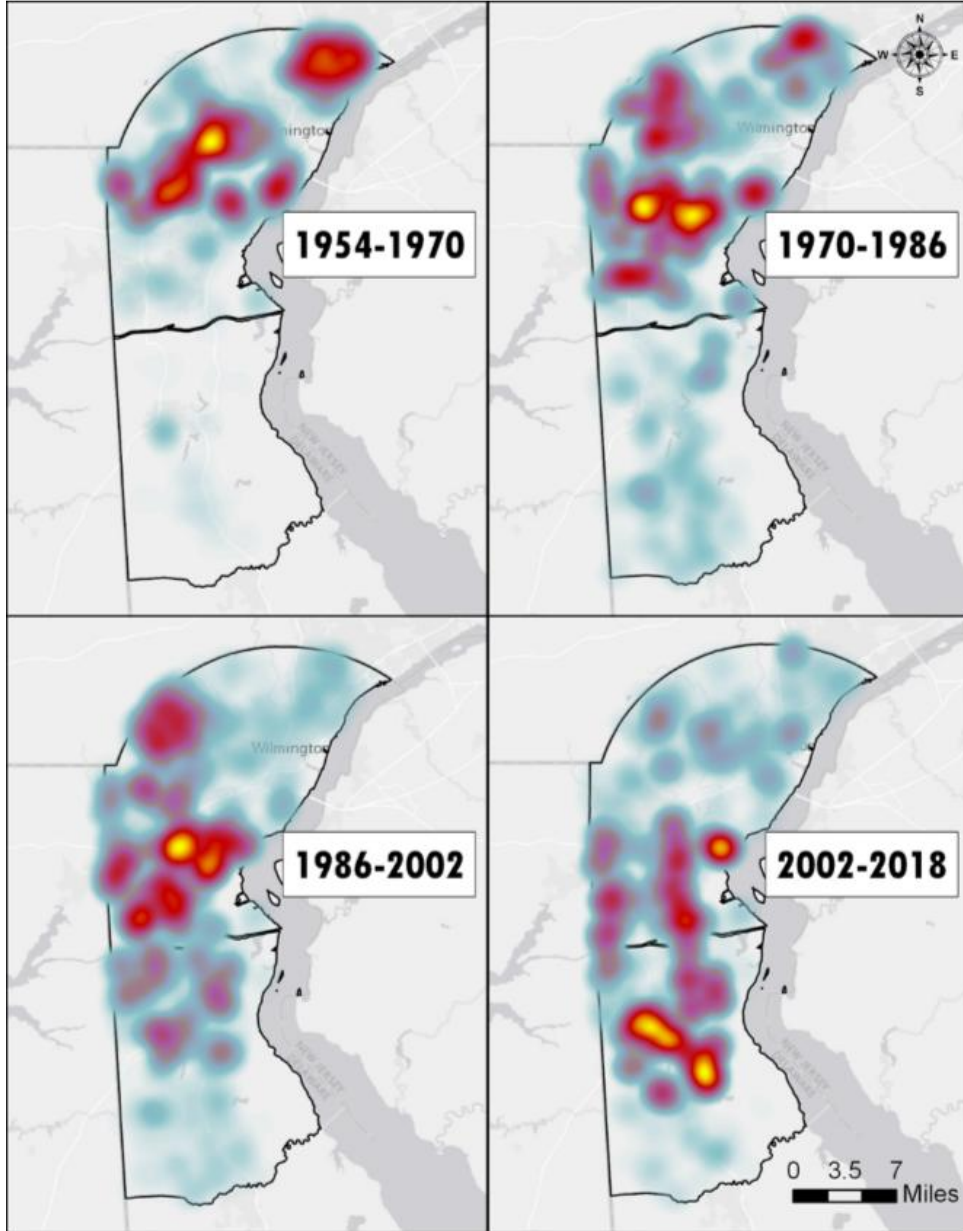


Figure 0-5: Total Residential Units Recorded by Year in southern NCC (Source: New Castle County)

Figure 0-6: Heat Maps of Development of Single-Family Residential Dwellings in New Castle County (1954-2018)



### Active Plans

The New Castle County Department of Land Use is currently processing 13 plans within the Southern New Castle County Master Plan planning area (

Figure 0-7). Four of these plans are non-residential Land Development Plans proposing: a 10-bedroom group home, a 127-unit senior living facility, a mini-warehouse facility and a place of worship. The nine residential developments include one Minor Land Development and eight Major Land Developments consisting of 1,152 lots.

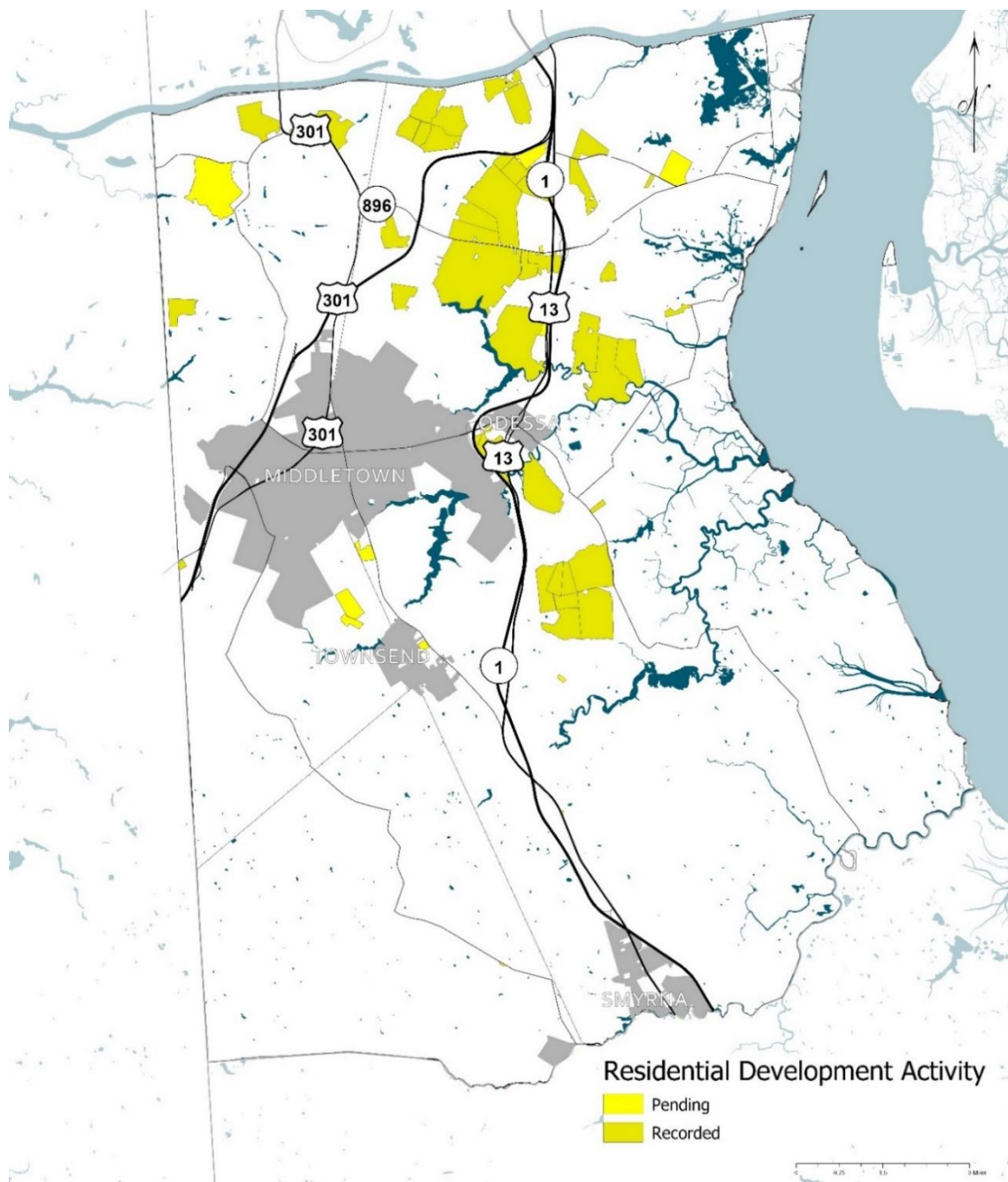


Figure 0-7: Residential Development Activity in the Planning area from 1998 to Present Day

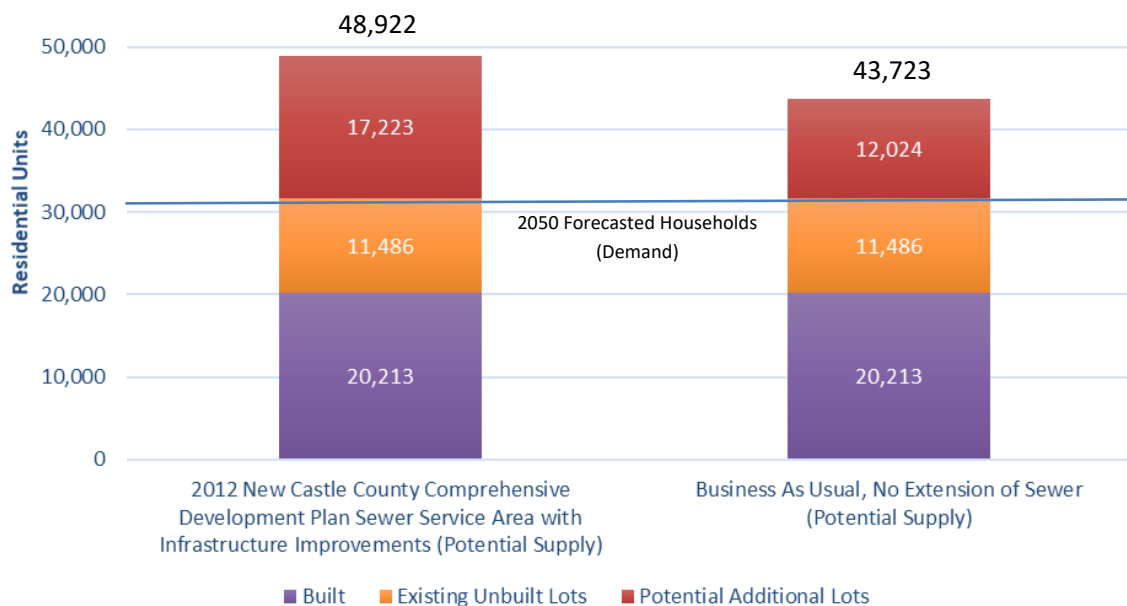
## Development Capacity (Potential Supply) & Forecasts (Projected Demand)

When evaluating the current development capacity, the plan evaluates zoning and subdivision regulations as well as existing sewer infrastructure. Protected resources are evaluated based on protections provided by the Unified Development Code. Additional information as to the analytical processes can be found the Appendix. It is important to note that this analysis is only performed within unincorporated areas of southern New Castle County.

Assuming no change in sewer availability, a development capacity analysis of the unincorporated areas shows a yield of 12,024 new households. Should sewer service be extended to the East and West Wings, as depicted in the Sewer Service Map in the 2012 New Castle County Comprehensive Development Plan, the analysis yields 17,223 new households within the unincorporated areas.

It is essential to differentiate development capacity from the numbers of households forecasted by the Population Consortium. Forecasts & projections examine demographic and economic trends to provide an assessment of where residential and nonresidential growth will occur within a fixed period of time. Development capacity, as described above, is a measurement of the potential for development, as opposed to the likelihood that it will occur. Although a property owner may subdivide their property, a household would not be established if demand does not exist. Good land use planning balances projected growth with development capacity. As such, it is imperative to compare housing supply (existing households), development potential (development capacity analysis), and household demand (projected households, provided here by the Population Consortium).

Figure 0-8: Potential Housing Supply Compared to Forecasted Household Demand Across Southern New Castle County



# ***Affordable Housing: Existing Conditions and Programs***

## **AFFORDABILITY**

As provided in Delaware Housing Needs Assessment 2015-2020 (September 2014)<sup>26</sup> the following excerpts help describe the affordable housing challenges in New Castle County and, where noted, specifically southern New Castle County.

Of Delaware's three counties, New Castle County exhibits the greatest disparity between wealth and poverty, with 42% of households earning more than \$100,000 in South New Castle, while more than half of all households in Wilmington earn less than \$50,000 per year.

HUD uses the Area Median Income (AMI) categories to provide a baseline definition of household income to support housing policy and analysis. The primary tool to assess housing need is the Comprehensive Housing Affordability Strategy (CHAS), a tool used to demonstrate who is living with *housing conditions*.

Low income renter- and owner-occupied households face greater cost burdens in the state than moderate- and middle-income households. The greatest need is among renters earning less than 50% AMI and among homeowners earning less than 30% AMI. Additionally, there is a notably high percentage of moderate-income homeowners who are cost burdened.

HUD explicitly defines *housing conditions* as the following:

- Cost Burden – A household is paying more than 30% of their income on housing, including taxes and insurance (for owners) and utilities (for renters). Households are considered extremely cost burdened if they pay more than 50% of their income in housing.
- Overcrowding – A household is living in overcrowded conditions if there are more people than rooms (including living room, dining room and kitchen, but not bathrooms). A household is living in extremely overcrowded conditions if there are more than 1.5 persons per room.
- Inadequate conditions – A household is living in inadequate conditions if they do not have complete kitchen facilities (consisting of a sink, kitchen and stove) or complete bathroom facilities (consisting of a sink, toilet, and tub or shower). This is not a complete assessment of inadequate conditions. Many homes may be lacking a complete roof, heat, insulation or electricity, but are not included in the assessment.

The following information is noted to be true for all counties in the state, but are more striking in New Castle and Sussex counties (Table 1):

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<sup>26</sup> [http://www.destatehousing.com/FormsAndInformation/Publications/2014\\_housing\\_needs\\_full\\_web.pdf](http://www.destatehousing.com/FormsAndInformation/Publications/2014_housing_needs_full_web.pdf).

- 3 in 4 renters earning between 30% and 50% AMI are cost burdened, paying more than 30% of their income on housing. These are households that earn roughly between \$15,000 and \$30,000 per year. 1 in 3 of these renters are extremely cost burdened, paying more than 50% of their income on housing.
- 3 in 4 households (renters and owners) earning less than 30% AMI are cost burdened. These households generally earn less than \$20,000 per year. Alarmingly, 63% of these households are extremely cost burdened.
- Approximately 50% of households earning between 50% and 80% AMI are cost burdened, and less than 20% are extremely cost burdened.
- Approximately 1 in 3 moderate- and middle-income homeowners are cost burdened. These families earn between 80% and 120% AMI, are cost burdened. Renters within this income range have limited issues with cost burden.

Table 1: Income Ranges for HUD Income Categories

County	30% AMI	50% AMI	80% AMI
New Castle	\$19,020	\$31,700	\$50,720
Kent	\$15,930	\$26,550	\$42,480
Sussex	\$14,280	\$23,800	\$38,080

Source: Delaware Housing Needs Assessment 2015-2020/Department of Housing and Urban Development, 2014

The CHAS figures indicate that the household types with the greatest housing problems, in terms of numbers, are small families and individuals, with 44,248 small families and 28,281 individuals who are cost burdened. Southern New Castle has the greatest concentration of families, large and small.

The largest concentration of very low income senior renters are found in northern New Castle and Wilmington. Wilmington also has the highest number of senior rental households that make under 30% AMI. While northern Delaware has a very high concentration of very-low income senior renters, 20% of very low income seniors over 75 years old live in southern New Castle County and western Sussex County.

Projected housing demand over the next five years is greatest in New Castle County. Household growth will be high in New Castle County and East Sussex County. However, an extensive inventory of developed lots and planned subdivisions in East Sussex means that new housing demand is projected to be higher in New Castle County, comprising more than half of all demand for new units through 2020.

The greatest rental housing demand is among renters earning less than 50% AMI and market rate units; the greatest homeownership demand is from moderate and middle income homeowners (Table 2). This follows state trends, where very low income households tend to be renters, while households moving into Delaware are seeking a home to purchase. Among the very low income renters, roughly half earn less than 30% AMI.

While seniors will comprise a large portion of future demand, they are predominantly homeowners (84%) and are far more likely to enter the homeownership market than the rental market. Based on projections, 16% of future rental demand will be for senior rental housing, whereas 32% of future home sales will be from seniors.



Table 2: Rental and Homeownership Demand by Income, Southern New Castle County 2015-2020

Area Median Income (AMI)	<30% AMI	30% to 50% AMI	50% to 80% AMI	80% + AMI	Total
Rental Housing Demand by Income	95	165	70	170	500
Homeownership Demand by Income	410	470	1,265	1,830	3,975

Source: Delaware Housing Needs Assessment 2015-2020, September 2014; page 9

## NEW CASTLE COUNTY AFFORDABLE HOUSING PROGRAMS

### New Castle County Workforce Housing Program

[www.newcastlede.gov/workforcehousing](http://www.newcastlede.gov/workforcehousing)

The Workforce Housing Program is an initiative designed to provide an opportunity for middle income households to purchase or rent affordable new construction housing units in New Castle County. It is a series of requirements and incentives for developers who include at least 20% workforce housing in a subdivision. This initiative does not use federal, state, or county funding to accomplish the goal of affordable housing for county residents.

### **Affordability**

Workforce housing is designed for people who make less than 120% of area median income as determined by the U.S. Department of Housing and Urban Development (HUD) for New Castle County (Table 3). Applicants must income qualify based on household size to participate in the program.

**Table 3: New Castle County Community Services Workforce Housing Income Guidelines, Effective June 28, 2019<sup>27</sup>**

Number in Household	Less Than 50% of Median Income VERY LOW	Less than 80% of Median Income LOW	Less than 100% of Median Income	Less than 120% of Median Income MODERATE
1	\$31,550	\$50,500	\$63,100	\$75,700
2	\$36,050	\$57,700	\$72,100	\$86,500
3	\$40,550	\$64,900	\$81,100	\$97,300
4	45,050	\$72,100	\$90,100	\$108,100
5	\$48,700	\$77,900	\$97,400	\$116,750
6	\$52,300	\$83,650	\$104,600	\$125,400
7	\$55,900	\$89,450	\$111,800	\$134,050
8	\$59,500	\$95,200	\$119,000	\$142,700

Rents and purchase prices are based on Area Median Income (AMI) and other housing costs. Monthly rents can start at \$1,300+ for a 1BR apartment to \$1,600+ for a 3 BR apartment or house. Purchase prices start at \$200k+ for town homes and \$300k+ for single family detached. *PRICES are subject to Change and income eligibility is as of April 24, 2019.*

### **Purchasing a Workforce Housing Unit**

There are deed restrictions and a buyer's agreement that impose restrictions on the home in order to ensure continued affordability during the affordability term. Those restrictions and agreements include but are not limited to:

- Restricting the use of the home to owner occupancy during affordability period
- Authorizing annual monitoring for compliance
- Limiting future sale prices of the home during affordability period to income eligible, qualified buyers

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<sup>27</sup> For each person in excess of eight, 8.00 percent for the four-person base should be added to the eight person income limits. All limits should be rounded to the nearest \$50. \$90,100 Median Income (FY 2019), family of four—New Castle County (Philadelphia-Camden-Wilmington, PA-NJ-DE-MD Metropolitan Statistical Area) <http://www.huduser.org/portal/datasets>

- Restricting refinancing of the home during affordability period
- Defining default conditions and legal remedies to cure defaults

Because the applicant agrees to these restrictions, the builder offers additional incentives for participating in the program. These incentives are only for income qualified households. They vary from builder to builder and from person to person.

Housing Counseling is a requirement and must be completed prior to settlement. New Castle County Community Services Department provides applicants with a list of approved Housing Counseling agencies.

Workforce housing units have been approved in several subdivisions in Southern New Castle County including but not limited to: Bayberry North, Goldsborough Farm, High Hook Farm, Ponds of Odessa, Preserve at Robinson and Spring Oaks.

### New Castle County Traditional Neighborhood Housing Program - Moderately Priced Dwelling Units (MPDUs)

[www.newcastlede.gov/mpdu](http://www.newcastlede.gov/mpdu)

Traditional Neighborhood Housing is an inclusionary zoning program with a mandatory and voluntary component. Moderately Price Dwelling Units (MPDUs) are required for all residential rezonings or variance applications with density increases proposing twenty-five (25) or more dwelling units except for mixed-use developments. This initiative does not use Federal, State or County funding to accomplish the goal of providing

### **Affordability**

MPDU housing is designed for people who make less than 90% of area median income, as determined by the U.S. Department of Housing and Urban Development (HUD) for New Castle County. Applicants must income qualify based on household size to participate in the program (Table 4: New Castle County Community Services MPDU Income Guidelines, Effective April 24, 2019Table 4).

**Table 4: New Castle County Community Services MPDU Income Guidelines, Effective April 24, 2019**

Number in Household	Less than 75% of Median Income	Less than 90% of Median Income
1	\$47,325	\$56,790
2	\$54,075	\$64,890
3	\$60,825	\$72,990
4	\$68,670	\$81,090
5	\$74,130	\$87,660
6	\$78,450	\$94,140

## **Purchasing an MPDU**

To be income qualified, you must complete an Inclusionary Housing Application. Every household member over the age of 18 must sign the application and provide some required qualification documents (e.g., tax returns, pay stubs, bank statements). Buyers must sign a declaration at settlement agreeing the property will remain owner-occupied during the affordability period. There will be annual monitoring occurring throughout the affordability period. Property may be sold before the affordability period expires, however, all reasonable efforts must be made to sell the MPDU to another qualified applicant. If the MPDU has been actively marketed for 180 continuous days and the seller has not received an offer for Resale Maximum Sales Price (RMSP), the MPDU can be sold to any purchaser. In this case, a portion of any resale profit must be paid to the Housing Trust Fund depending on the amount of months the property was originally occupied out of the requirement. For more information, please review the “MPDU Resale Profit” document on the website: [newcas-tlede.gov/mpdu](http://newcas-tlede.gov/mpdu)

Buyers are required to attend 8-hours of HUD certified housing counseling in Delaware. Buyers must receive mortgage financing. Financing can be secured individually or through the builder. Debt-to-Income ratio must be below 52% and there is a liquid asset disqualifier of over 20% of purchase price (some exceptions and will be determined on a case by case basis).

## **Down Payment Settlement Program (First Time Buyer Program)**

This program enables low- and moderate-income households to purchase their first home by providing a 0% low interest loan of \$1,000 - \$5,000 for eight years to aid in covering the cost of down payment and/or settlement charges.

This is a first-time buyer program for income qualified borrowers who have not owned a principal residence (mobile homes excluded) for the last three years. Total household income may not exceed 80% of median income for New Castle County and is adjusted for family size per Department of Housing and Urban Development Guidelines ranging from \$50,500 for a one-person household up to \$95,200 for an 8 person household. The borrower must occupy the home as their principal residence throughout the duration of the loan. All borrowers are required to complete a Homeownership Education Program with a New Castle County recognized HUD approved housing counseling agency.

The residence must be in New Castle County, outside of Wilmington; the program has a current maximum selling price limit of \$379,500 and the property must be inspected by home inspectors with specific profession home inspection certifications (ASHI, NAHI or InterNACHI) as a condition of sale. All homes built prior to 1978 must have a lead visual inspection. Repairs must be completed according to HUD guidelines.

## Home Repair Programs

These are affordable housing home repair programs designed to enable qualified homeowners to have repairs made which are necessary to free their homes of health and safety hazards. Funding is limited and awarded on a first come first serve basis and there are established waiting lists. These programs include: Emergency Home Repair, Senior Repair Loan Program, Architectural Accessibility Program, Homeowner Rehabilitation Direct Loan Program and the Innovative Development Empowerment Area (IDEA) Homeowner Rehabilitation Program.

## **NEW CASTLE COUNTY FEDERAL FUNDING – CDBG, ESG, AND HOME PROGRAMS**

New Castle County Administers its Federal Funding through the Community Development Block Grant Program, the Emergency Solutions Grant (ESG) Program and the HOME Investment Partnerships Program (HOME) through the New Castle County – HUD Consolidated Plan with these goals:

- To Provide Decent Housing
- To Provide a Suitable Living Environment
- To Expand Economic Opportunities

The 2015-2020 Consolidated approach is provided through these priorities:

- Expand the Supply of Housing for Affordable Homeownership
- Rehabilitate Homes for LMI Homeowners and Seniors
- Increase Homeownership Opportunities for LMI Families
- Expand the Availability of Rental Stock for LMI Households
- Support Housing for Persons with Disabilities
- Assist Homeless Populations
- Assist Those at Risk of Becoming Homeless
- Strengthen Communities by Providing Public and Social Services
- Support Programs that Provide Economic Opportunities and Empower LMI Persons to Achieve Self Sufficiency

## Community Development Block Grant Program

CDBG funds are available for a variety of Housing, Public Facility, Public Service, and Economic Development Activities that meet one of these three national objectives:

- A. Benefit low- and moderate-income persons (at least 70% of grant amount)
- B. Prevent or eliminate slum or blight  
(not more than 30% of grant amount)

- C. Meet urgent needs when health and welfare are threatened

### Emergency Shelter Grant (ESG) Program

The Emergency Solutions Grants (ESG) program, (renamed and reorganized the Emergency Shelter Grants Program, in 2012) objective is to assist people to quickly regain stability in permanent housing after experiencing a housing crisis and/or homelessness.

The ESG program provides funding to:

1. Engage homeless individuals and families living on the street;
2. Improve the number and quality of emergency shelters for homeless individuals and families;
3. Help operate these shelters;
4. Provide essential services to shelter residents;
5. Rapidly re-house homeless individuals and families; and
6. Prevent families and individuals from becoming homeless.

ESG funds may be used for five program components: street outreach, emergency shelter, homelessness prevention, rapid re-housing assistance, and Homeless Management Information System (HMIS). HMIS is a 2009 Federal Requirement that all communities have an HMIS with the capacity to collect unduplicated counts of individuals and families experiencing homelessness.

### *NCC's ESG Program and population approach*

- Rapid Re-Housing ESG Allocation is solely designated to Family Promise of Northern New Castle County, Inc. for housing relocation and stabilization services; and/or rental assistance
- Data Collection (Community Management Information System)
- Shelter Operations or Essential Services (no more than \$60,000 total will be available to award)

Target homeless populations **include** families, veterans, recently released persons incarcerated (90 days or less) and disabled individuals.

### HOME Investment Partnerships Program

The Home Investment Partnership Program provides grants to states and units of general local government to implement local housing strategies designed to increase homeownership and affordable housing opportunities for low and very low-income Americans. HOME funds can be used for a variety of housing activities, according to local housing needs.

The HOME program is implemented to:

- Provide decent affordable housing to lower-income households,



- Expand the capacity of nonprofit housing providers,
- Strengthen the ability of state and local governments to provide housing, and
- Leverage private-sector participation.

### **Housing Activities**

Unlike CDBG, HOME may be used for new housing construction. Fifteen percent (15%) of HOME Funds are set aside for HUD-approved NCC Community Housing Development Organizations (CHDOs).

Eligible activities/costs:

- New construction
- Rehabilitation
- Reconstruction
- Conversion
- Site improvements
- Acquisition of property
- Acquisition of vacant land
- Demolition
- Relocation costs
- Refinancing
- Capitalization of project reserves
- Project-related soft costs

HOME program subsidies are available as:

- Interest bearing loans or advances
- Deferred loans (forgivable or repayable)
- Non-interest-bearing loans or advances
- Grants
- Interest subsidies
- Equity investments
- Loan guarantees & loan guarantee accounts

## Housing Choice Voucher (HCV) Program

The Housing Choice Voucher Program (formerly known as Section 8 Vouchers) is a federally funded, locally administered rental assistance program for assisting very low-income families, the elderly, and the disabled to afford decent, safe, and sanitary housing in the private market. Funded by the U.S. Department of Housing and Urban Development, HCV is administered locally by the New Castle County Housing Authority (NCCHA). NCCHA currently helps to house over 1,700 families throughout New Castle County, Delaware, except within the city limits of Wilmington and Newark, which are served by their own public housing authorities. These Public Housing Authorities receive federal funds from the U.S. Department of Housing and Urban Development (HUD) to administer the voucher program.

A family that is issued a housing voucher is responsible for finding a suitable housing unit of the family's choice where the owner agrees to rent under the program. This unit may include the family's present residence. Rental units must meet minimum standards of health and safety as determined by the PHA.

A housing subsidy is paid directly to the landlord on behalf of the participating family. The family then pays the difference between the actual rent charged by the landlord and the amount subsidized by the program. Under certain circumstances, if authorized by the PHA, a family may use its voucher to purchase a modest home.

There are currently 65 Housing Choice Voucher program clients residing in southern New Castle County broken down as follows: 1 family in Delaware City; 62 families in Middletown and 3 in Clayton. Middletown, Odessa, Clayton and Townsend are areas that are eligible for the Housing Choice Voucher Program Small Area Fair Market Rents. Landlords with units in these areas would be eligible for higher rental reimbursement if willing to rent to a Housing Choice Voucher program client.

# ***Methodology & Technical Approach for Scenario Development & Analysis***

## **SCENARIO DEVELOPMENT AND ASSUMPTIONS<sup>28</sup>**

### Development Capacity Calculation Process

Resilient planning requires the examination of the potential long-term impacts of planning initiatives. Forecasting and projections do not account for anomalies, permitted by the Comprehensive Development Plan and the Unified Development Code, which would be inconsistent with demographic and economic trends. It is also important to understand the potential impacts of land use policies beyond the plan's horizon year. A development capacity analysis for the Southern New Castle County Master Plan planning area can help to address those limitations by evaluating development capacity based on current zoning and subdivision regulations, including protected resources and by incorporating an analysis of the impact of providing infrastructure spending to the east and west wing on overall development capacity. (See Figure 1-1 in the main body of the report for a map delineating the east and west wings and central core.)

Most of the undeveloped land in the Central Core as well as the East and West Wings is zoned Suburban (S), offering a variety of development options that are slightly nuanced and within a DU/acre yield difference. Modest density increase is determined by sewer service availability, parcel size and protected resources. Currently sewer is only provided for new development in the Core area. The east and west wings are in the Sewer Service Area but no timing of availability has been established. Unincorporated land located south of Middletown is unsewered, and generally zoned Suburban Reserve (SR). Development of this land is permitted at a significantly lower density than Suburban zoned land.

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<sup>28</sup> When evaluating the plan scenarios, projections of total households in the southern New Castle County study area through 2050 have remained consistent/constant with the official totals forecasted by the Delaware Population Consortium (DPC). Additionally, to be consistent with planning activities north of the canal, none of these scenarios consider redistribution of households from Northern New Castle County to Southern New Castle County.

Another important consideration when evaluating these scenarios is that there is an important difference between households and houses. Households are a function of population changes based on birth, death and migration rates. The DPC thoroughly considers these factors, and State Law requires that comprehensive plans be consistent with the formally adopted projections. This plan is a New Castle County comprehensive planning effort and focuses on the unincorporated areas while taking into account the interrelationships with municipalities within the study area. The plan proposes potential amendments to the County's Comprehensive Development Plan, however does not recommend changes to planning efforts within municipal boundaries, as the plan will have no jurisdictional authority over such areas. Population projections and households within municipal boundaries are assumed to, at a minimum match those established by the Population Consortium as further allocated within TAZ boundaries by WILMAPCO.

## Southern NCC Analysis Methodology

The following sections describe land use scenario development assumptions and analysis methodologies. The New Castle County Department of Land Use has developed a series of GIS-based models that estimate residential development build-out. These models allow the Department to evaluate impacts of growth-related scenarios. The models were built in ESRI's "Model Builder" interface within ArcGIS Pro.

### Building the Master Parcel Database

The first step in completing scenario analysis is constructing a parcel-based database that identifies parcels that could have capacity for future development. We do this by first identifying parcels that are considered to be unbuildable based on parcel records. Examples of unbuildable parcels include: road beds, stormwater management areas, publicly owned lands, and schools. These parcels are eliminated from the dataset so that the analysis is focused to only parcels that may have capacity for future growth. For the purpose of this analysis, any parcel with a commercial structure on it was also eliminated from the possibility of having future growth potential.

Next, the parcel polygon data is run through an "Identity" operation in GIS, where each parcel or portion of a parcel is tagged with various attributes including:

- Land use
- Future land use
- Zoning
- Town Zoning
- Existing Sewer Service
- Potential future sewer service areas (for scenarios)
- Protected lands, including parks, agricultural and conservation easements, and other public lands.
- TAZ
- Existing Subdivisions
- Wetlands
- WRPA (water resource protection areas)

The next step narrows the universe of parcels where development capacity calculations are performed based on the attributes attached to the parcels in the previous step. In this step, protected lands and several land use categories (based on 2012 land use) are erased from the parcel dataset.

Constrained lands are also summarized. Based on County Code, areas are identified as 50% constrained or 100% constrained. For example, wetlands and some water resource protection areas (WRPA) are considered 100% constrained for the purposes of new development. Other WRPA areas, such as Class B and Class C Wellheads, are considered 50% constrained. Once they are identified, these areas can be factored into the development capacity calculations.

Finally, the data are summarized by parcel, zoning district, and sewer service area. For each category, the area of each that are within 100% constrained, 50% constrained, overlap between 50% and 100%, or not constrained are calculated. This dataset then gets run through development capacity calculations, which vary by scenario.

### Development Capacity Models

The parcels are then run through a site capacity analysis, which follows the calculations in Article 5 of the UDC. The calculations are run for different development options, considering the area of each parcel within the constrained areas as described above. Allowable density within zoning districts is adjusted based on whether or not a parcel has access to sewer service which varies by scenario. The development option with the highest number of units possible is reported for each parcel/zoning combination.

The following development options are evaluated for each land use scenario:

1. Suburban Reserve (SR):
  - Single-family
  - Open space subdivision
2. Suburban (S):
  - Single-family
  - Single-family, conservation design
  - Open space subdivision - Option 1
  - Open space subdivision - Option 1, conservation design
  - Open space subdivision - Option 2
  - Open space planned
3. Suburban Transition (ST):
  - Single-family
  - Single-family attached
  - Open space planned
  - Apartments

Neighborhood Conservation are districts not included in this analysis for the following reasons:

- Most NC zoned parcels are part of Former Code subdivisions (presenting substantial challenges to subdivision).
- Most NC zoned parcels not part of an existing development are not be eligible for a Major Subdivision based on site capacity.
- The Department has seen very few subdivision requests for NC zoned parcels South of the Canal since the adoption of the UDC (December 31, 1997).

The following procedure is performed in ArcGIS using Model Builder for each of the above development option in each zoning district.

### **Step 1: Calculate the Base Site Area**

Base Site Area = Gross Site Area – Rights-of-Ways – Waterbodies > 1 acre – Previously Dedicated Open Space – Land cut off from use by railroad, highway, or waterbody

- Since we do not have survey level data for each parcel, the **gross site area** is assumed to be equal to the acreage of the parcel polygons maintained by New Castle County.
- Waterbodies will be accounted for in Step 2 calculation and therefore are not accounted for in this step.
- All previously dedicated Open Space parcels are queried out as are previously approved Major land Development Plans (accounting for on lot open space under the Former Code)

### **Step 2: Calculate Total Resource Land**

- The following resources are accounted for based on their respective GIS polygons:
  - Floodplain/floodway (100% protected)
- Wetlands (National and State designated) (100% protected)
- Riparian buffer (50 feet adjacent to delineated floodplains and wetlands greater than 20,000 square feet in size) (100% protected)
- Water Resource Protection Areas:
  - Class A Wellhead (100% protected)
  - Class B & C Wellhead (50% protected)
  - Recharge areas (50% protected)
  - Cockeysville Formation (50% protected)
  - Cockeysville Formation Drainage Area (50% protected)
- D. The Following resources require onsite evaluations to determine their extent and classification as such are not included in this calculation:
  - Drainageways
- Sinkholes
- Steep Slopes (Surveyor or Engineer topography)
  - Precautionary Steep Slopes (15-25%)
  - Prohibitive Steep Slopes (> 25%)
- Forests as Classified by UDC (Delineated by Arborist or Landscape Architect)
  - Young Forests
  - Mature Forests
- Critical Natural Areas (on site evaluation performed by DNREC)
  - Slope or geologic sites



- Rare species site
- Forests, mature
- Forests, young
- Other CNA

### **Step 3: Calculate Protected Resource Land**

- Calculate the summation of the values in Step 1 and account for overlapping resources by deferring to the higher protection level

### **Step 4: Calculate Total Unrestricted Land**

- Total Unrestricted Land = Base Site Area - Total Resource Land

### **Step 5: Calculate Usable Land**

- Usable Land = Total Unrestricted Land X Usability Factor
- Usability Factors:
  - Suburban Reserve - 0.015
  - Suburban Estate& NC2a - 0.022
  - Suburban, NC40, NC21 and NC15 - 0.049
  - Suburban Transition & all other NC districts - 0.154
  - Traditional Neighborhood - 0.150
  - Manufactured Homes - 0.136

### **Step 6: Calculate Site Protected Land**

- Site Protected Land = Usable Land + Protected Resource Land

### **Step 7: Calculate Minimum District Required Open Space**

- Minimum District Required Open Space = Base Site Area X Minimum Open Space (UDC Table 40.04.110)

### **Step 8: Calculate Net Buildable Site Area**

- Net Buildable Site Area = Base Site Area – (Site Protected Land or Minimum District Required Open Space whichever is greater)

### **Step 9: Calculate Site Specific Maximum Density Yield**

- Site Specific Maximum Density Yield = Net Buildable Site Area X Maximum Net Density (UDC Table 40.04.110)

### **Step 10: Calculate District Maximum Density Yield**

- District Maximum Density Yield = Base Site Area X Maximum Gross Density (UDC Table 40.04.110)

### **Step 11: Calculate Maximum Yield for Site**

- Maximum Yield for Site = Site Specific Maximum Density Yield or District Maximum Density Yield (whichever is less)

### **Step 12: Repeat for each Development Option**

### **Step 13: Calculate Build Out Capacity**

- Build Out Capacity = The option with the greatest yield

### **Aggregating Data to Traffic Analysis Zones (TAZs)**

In order to evaluate the build-out data with respect to transportation models, the output of the development capacity analysis needs to be aggregated to the TAZs. This is done using a Model Builder in ArcGIS Pro. This model summarizes the development capacity data by TAZ. Where parcels are split by more than one TAZ, the model allocates the percentage of the capacity based on the percentage of buildable land in each TAZ within an individual parcel.

### **Reallocating Projected Growth in Scenarios**

It is necessary to reallocate projected growth in Scenarios 2 and 3, as shown in Figure 0-9 and Figure 0-10. In both Scenarios 2 and 3, there is a reallocation of households from the East Wing to the West Wing. Since Scenarios 2 and 3 remove capacity for future growth in the East Wing, it makes sense to remove some of the projected growth from this area and shift it to the West Wing. Future growth in the West Wing is assumed to be on sewer in these scenarios, which allows more density and different development. The following methodologies were used to complete the re-allocation.

- Removing projected growth from the East Wing
  - Calculate supply/demand difference for each TAZ based on the reduced development capacity in the East Wing.
  - Total the projected growth that won't "fit" within each TAZ in the East Wing based on the reduction in development capacity in the scenarios and subtract from the total projection of that TAZ.
- Adding projected growth to the West Wing
  - Begin with the total from the "Removing projected Growth from the East Wing" section.
  - Evaluate "oversupply" of each TAZ in the Upper West Wing (capacity minus allocation)
  - Calculate percent of total "oversupply" in each TAZ

- Reallocate new demand based on percentage of oversupply.
- Results in 345 units being reallocated from East Wing to Upper West Wing

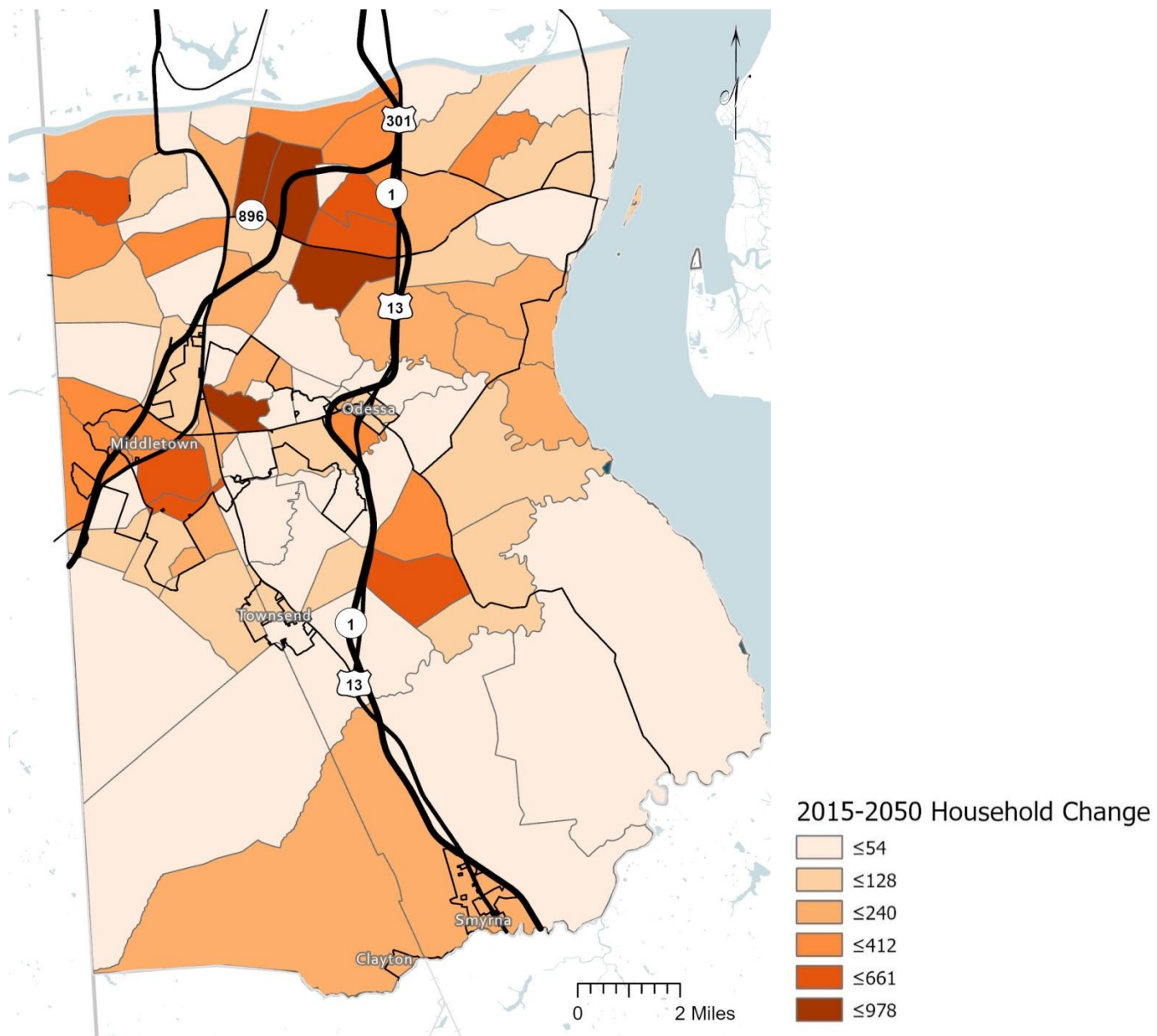


Figure 0-9: Scenario 1—Household Allocation

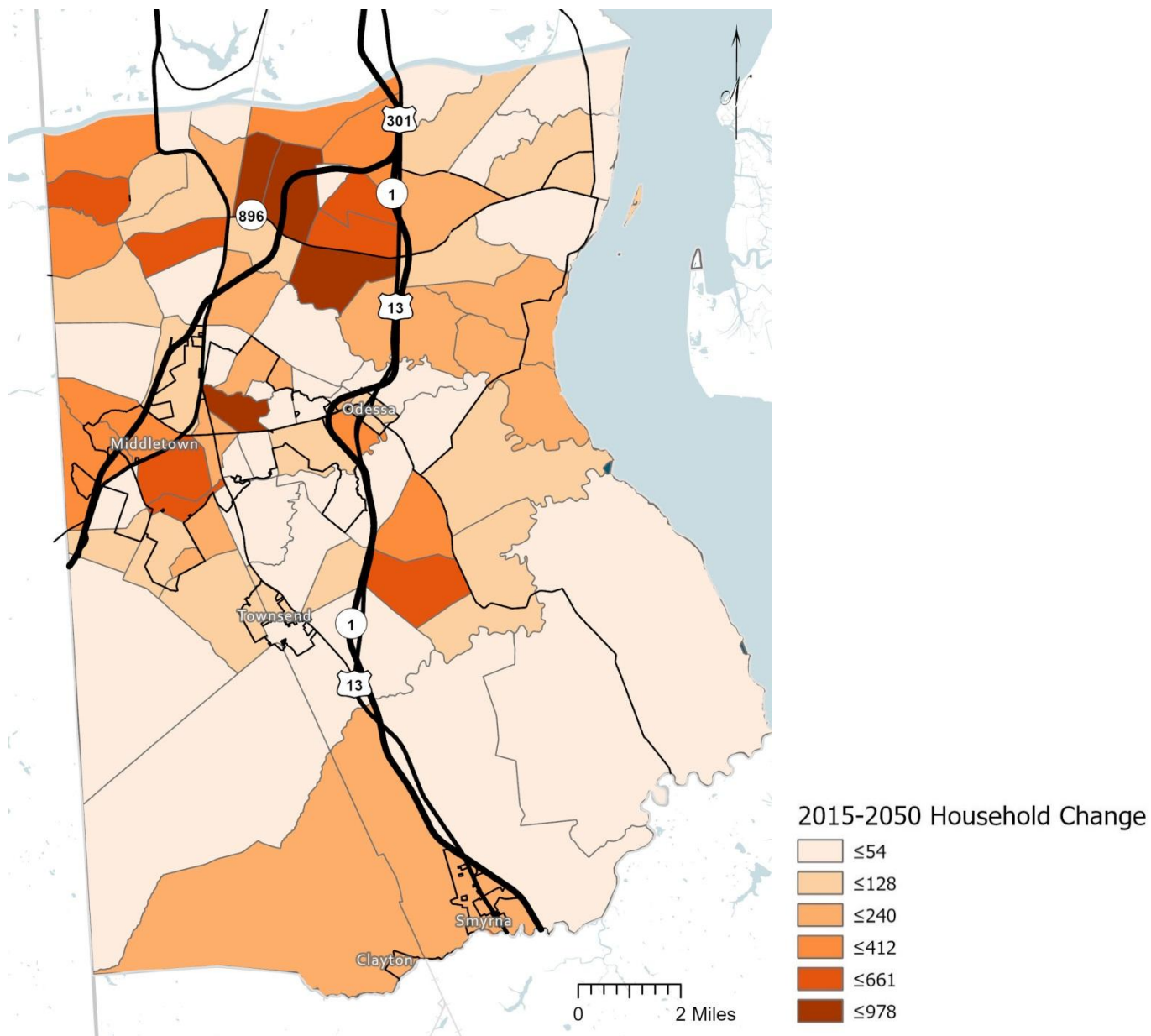


Figure 0-10: Scenario 2—Planned Growth and Preservation—Household Allocation

For Scenario 3, it is necessary to reallocate household and job growth from rural parts of southern NCC to the municipalities of Middletown, Odessa, Townsend, and Smyrna. To accommodate potential additional residential growth in Townsend, Scenario 3 reallocates one hundred and fifty (150) forecasted households to TAZ 338, all of which is assumed to be within Townsend municipal boundaries (452 forecasted households to 602 households). This increase in households would result in as many as 430 residents (assuming population per household within TAZ 338 is consistent with current allocations for 2050) more within Townsend boundaries than the 2,220 new residents projected by the Population Consortium (2015-2050). To accommodate potential additional growth in Townsend, Scenario 3 reallocates two hundred and fifty (250) forecasted households to TAZ 339, all of which is assumed to be within Smyrna municipal boundaries. This increase in households would result in as many as 654 residents (assuming population per household within TAZ 339 is consistent with current allocations for 2050) more within Smyrna boundaries than the 6,240 new residents projected by the Population Consortium (2015-2050).

In Scenario 3, the Town of Middletown would experience significant job growth through 2050, assuming fulfillment of the Transportation Improvement District (TID). Based on the TID's anticipated future development, this scenario assumes an additional roughly 2,400 jobs in Middletown, totaling roughly 3,500 jobs within the town. This additional assumed amount of jobs in Middletown for this results in the total amount of jobs in the planning area is approximately double the number of jobs that are currently projected for southern NCC.

### ***Town of Townsend***

To accommodate potential additional growth in Townsend, Scenario 3 reallocates 150 forecasted households to be within Townsend municipal boundaries (452 forecasted households to 602 households). This increase in households would result in as many as 430 residents more within Townsend boundaries than the 2,220 new residents projected by the Population Consortium (2015-2050).

### ***Town of Smyrna***

To accommodate potential additional growth in Townsend, Scenario 3 reallocates two hundred and fifty (250) forecasted households to the portion of Smyrna that falls within southern New Castle County. This increase in households would result in as many as 654 residents more within Smyrna boundaries than the 6,240 new residents projected by the Population Consortium (2015-2050).

## **Comparison of Scenarios**

Calculations for land use impact metrics for each scenario include:

### ***Number of residential units on sewer vs. septic***

- Calculate the number of projected households on sewer vs. septic based on the location of future planned sewer service areas and reallocation of growth from the East Wing (Scenarios 2 and 3).
- In Scenario 1, all growth in the Upper West Wing is assumed to be on septic. For Scenarios 2 and 3, that same growth is projected to be on sewer.
- This metric does not include the municipalities.



### Acres of resource lands consumed

This is a measure of the amount of land that could be consumed by future residential growth between now and 2050. It uses the gross allowable density for each zoning districts, depending on whether or not the projected growth can be built on sewer or septic. The following assumptions should be considered when looking at the acres consumed statistics:

- Assumes a gross density of 1.3 du/acre for sewer and 0.67 du/acre for septic within the Suburban Zoning District.
- Assumes a gross density of 0.3 du/acre for septic within the Suburban Reserve Zoning District.
- Does not include future non-residential growth.
- Does not include projected growth within municipalities.

### Nitrogen loading from wastewater sources

- Used loading rates supplied by UD research paper and applied to the increment of new growth between 2015 – 2050
- Result is total pounds of nitrogen entering the environment per year by Scenario

Table 5: Land Use Impact Metric Results – Comparison of Scenarios

	Scenario 1	Scenario 2	Scenario 3
Additional Lots that Could be Developed (build-out, excludes municipalities)	~12,000	~10,000	~10,000
Percentage of Projected Growth on Sewer (excluding municipalities)	60%	84%	86%
Projected Nitrogen Loading from Wastewater (lbs/year of TN entering environment, not including municipalities)	~40,576lbs/year	~17,668lbs/year	~16,140lbs/year
Acres of Land Consumed (based on gross density of 1.3du/acre on sewer and 0.67du/acre on septic, 0.33 du/acre in SR)	~ 9,574acres	~7,683acres	~7,482 acres

# ***Sewer & Water***

## **OVERVIEW**

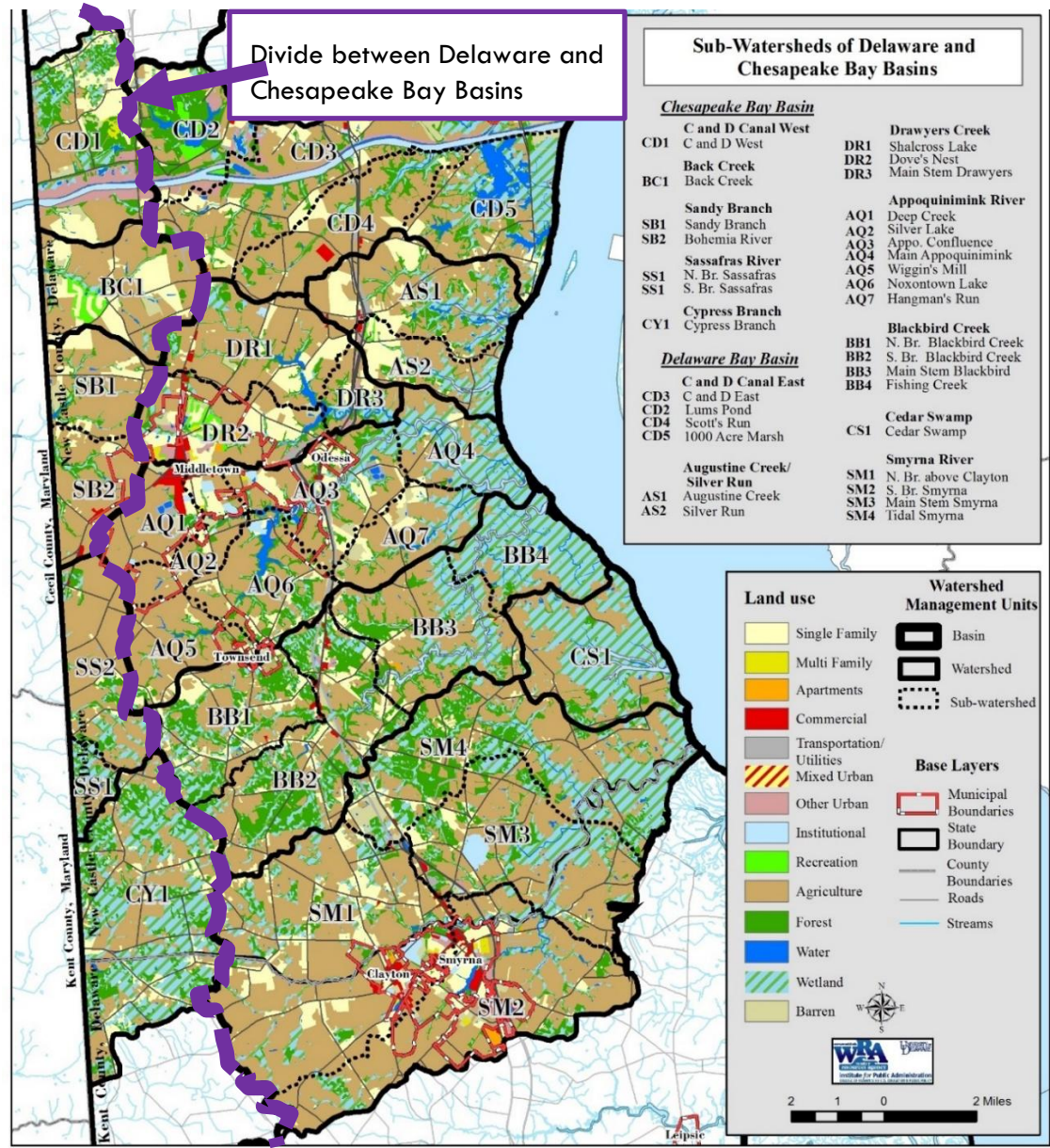
Located in the Atlantic Coastal Plain, southern New Castle County is topographically flat, with low elevation<sup>29</sup> and abundant waterbodies, marshes, and wetlands. Southern New Castle County is bordered by the Delaware River to the east with the Chesapeake and Delaware Canal to the north. The basic geographic units for water resources planning and management are watersheds. The planning area is divided into the two main drainage basins with the Chesapeake Bay to the west and the Delaware River to the east (Figure 0-11). Southern New Castle County's waterways and groundwater are a vital part of the environment and supporting livable communities.

In contrast to northern NCC, where many dwellings are connected to a central sewer system, southern NCC is primarily served by sanitary sewer only within the core planning area. The core planning area represents the first major expansion of the original Water Farm 1 (aka MOT) Treatment Plant service area. This distinction is further exaggerated through southern NCC's reliance on ground supplies (e.g wells or clusters of wells) for domestic water, whereas northern NCC receives their drinking water from surface sources (e.g. lakes, rivers and streams). With a significant increase in population projected in areas currently not served by sanitary sewer, extreme measures need to be taken to protect groundwater resources essential to healthy communities.

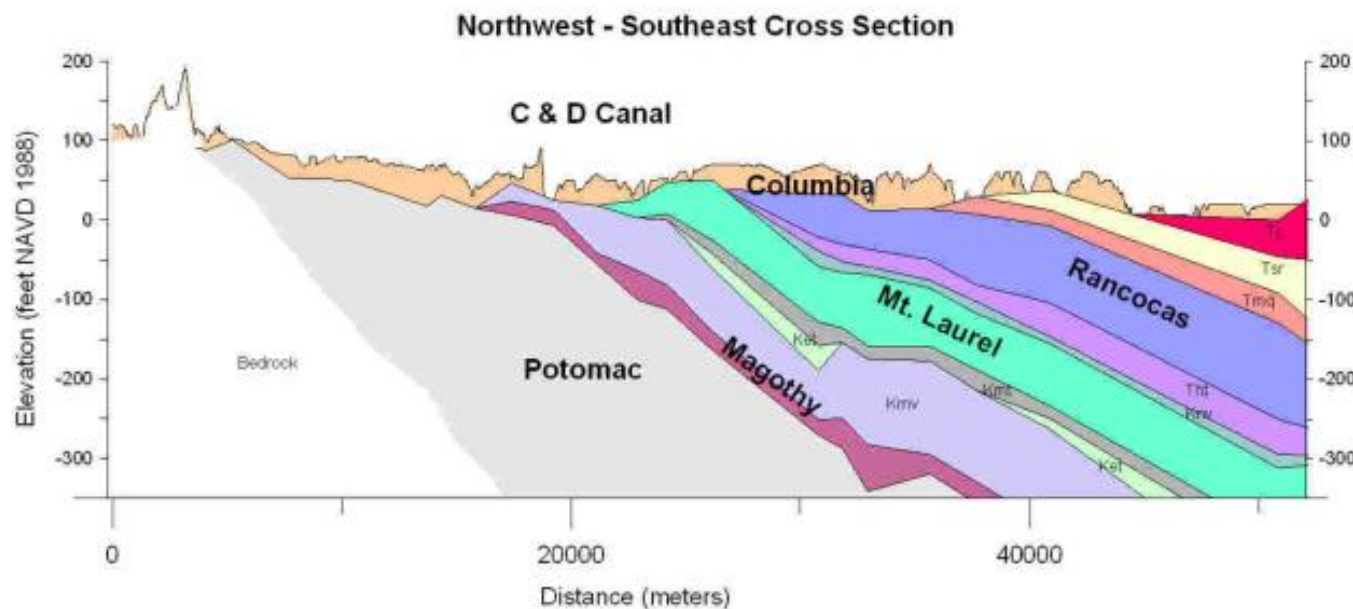
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<sup>29</sup> Delaware has the lowest mean elevation of all the states in the U.S., at 60 feet.

Figure 0-11: Sub-Watersheds of the Delaware and Chesapeake Bay Basins (Source: Water Supply and Demand in Southern New Castle County through 2050 Draft Report. Water Supply Coordinating Council / U of D WRA, 2019)



The hydrology of southern NCC is in part a product of its geographic and geologic characteristics, which influence how the water supply is sourced and how it can best be protected. Figure 0-12 illustrates the ground water aquifers as they are located through the planning area. Groundwater in the Columbia formation is the source of all fair-weather flow in streams and a majority of total stream flow in this area. The aquifers that yield this water and the intervening non-water bearing confining beds occur within a southeasterly dipping and thickening section or wedge of unconsolidated to weakly consolidated sediments of the Atlantic Coastal Plain. The shallowest aquifer (Columbia) occurs within a sheet-like body of sandy sediment that overlies the sediments of the wedge. Notably, significant quantities of effluent from septic systems are discharged into the Columbia aquifer which then migrates to streams or deeper aquifers. The unconfined aquifer is the most susceptible to human influence. In general, these hydrologic characteristics would indicate that what happens on the landscape ends up in ground and surface water usually faster and more directly than areas in northern New Castle County.



Major aquifer names are shown (Potomac, Magothy, Mt. Laurel, Rancocas, and Columbia). Geologic units forming confining beds are Merchantville Formation (Kmv), Englishtown Formation (Ket), Marshalltown Formation (Kmt), Navesink Formation (Kns), Hornerstown Formation (Kst), Manasquan Formation (Tmq), Shark River Formation (Tsr), and Calvert Formation (Tc).

Figure 0-12: Generalized Cross-section of Aquifers in Southern New Castle County, from Northwest to Southeast (Source: Water Supply and Demand in Southern New Castle County through 2050. Water Supply Coordinating Council / U of D WRA, 2019)

## Groundwater

At present, all sources of potable water in the planning area are from groundwater aquifers. These sources not only supply existing demand but are projected to supply planned growth through 2050.

A DNREC database (Delaware Department of Natural Resources and Environmental Control, 2006) indicates over 4,600 individual wells are dispersed throughout southern New Castle County that provide 1.5 mgd of drinking water. Over 3,100 individual wells are distributed north of the MOT area. In addition, public water suppliers provide significant community water service to much of the northern portion of the planning area (in much of west wing and core). Providers include Artesian Water Company, Tidewater Utilities, and the governments of Delaware City, Middletown and New Castle County. Peak daily demand for these suppliers is approximately 8.2 mgd. Finally, self-supplied non-community wells (for restaurants, stores, hotels, offices, etc.) and irrigation water supplies (for farms and golf courses) consume approximately 0.4 mgd.

Based on anticipated population growth, demand on public water purveyors is expected to grow. In 2010, public water suppliers had existing supplies (15.7 mgd) that exceeded peak daily demands (8.2 mgd), thus accounting for a healthy surplus (+7.5 mgd). By 2050, the public water purveyors are expected to see peak daily demands reach 13.6 mgd, which will still result in a surplus of 2.1 mgd.

A recent study commissioned by the County from the University of Delaware Water Resources Center (UCWRC)(September 23, 2019), concluded that based on population growth estimates, there will be sufficient groundwater availability to meet peak demands from public water supply uses provided that:

- Public water supply and irrigation wells are pumped in accordance with Delaware Department of Natural Resources and Environmental Control (DNREC) water allocation limits. DNREC should continue to monitor demands and water levels from allocated public water supply wells and irrigation wells so as not to diminish the capacity of irrigation wells for producers that wish to sustain farming in southern New Castle County.
- Water purveyors interconnect between and within systems, add new finished water storage and aquifer storage and recovery, and transport water from aquifers with excess availability south of Townsend to growth areas between Middletown/Odessa and the Chesapeake & Delaware Canal.

While supply would seem to be sufficient for the duration of the planning period, quality of groundwater sources has been the subject of interest among governmental authorities in recent decades. In southern New Castle County the conversion of agricultural lands has given rise to the desire to monitor groundwater quality. In 1996, the Delaware Geologic Survey began a study entitled "Design, Development and Implementation of a Ground-Water Quality Monitoring Network for Southern New Castle County, Delaware".

The DGS study initially identified the location of existing wellheads in the planning area and established monitoring criteria. The planning area included the more than 200 square miles of New Castle County south of the C & D Canal. Past research documented elevated nitrate concentrations in the unconfined aquifer system. The DGS study indeed found higher levels of nitrate-nitrogen, evidence of two herbicides, atrazine and triazine, and higher than desirable pH levels, all of which are likely the result of human activity.

These issues existed prior to the County taking steps to protect wellhead areas, and as such it is anticipated that the Water Resource Protection Area regulations the County put in place and subsequently revised (as discussed below) are adequately addressing water quality problems.



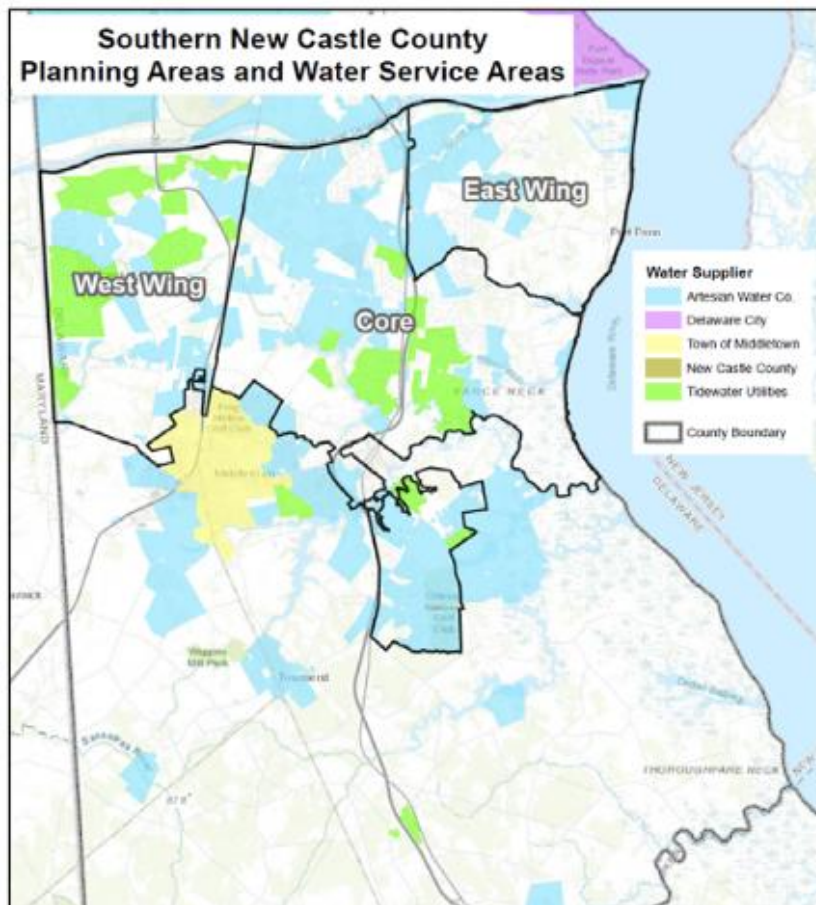


Figure 0-13: Public Water Supply Franchise Areas, Southern New Castle County (Source: “Water Supply and Demand in Southern New Castle County through 2050” Draft White Paper. Water Supply Coordinating Council / U of D WRA, 2019)

## WATER SUPPLY

### Availability

At present, all sources of potable water in the planning area are from groundwater aquifers. The hydrologic characteristics of southern NCC, such as the shallow, unconfined Columbia aquifer and higher water table, on average relative to northern NCC, make it likely that groundwater is more exposed and sensitive to what happens on the landscape. That is, surface contaminants generally would be more likely to reach ground and surface water faster and more directly than areas in northern New Castle County.

In the planning area, two private companies—Artesian Water Company and Tidewater Utilities – as well as the Town of Middletown are the main public water suppliers (Figure 0-13). According to DNREC records, there are over 4,600 individual wells in southern New Castle County, with the majority located in the areas north of Middletown, Odessa, and Townsend. Other public community wells in the area are the Mount Pleasant Trailer Park and Cantwell Water Company. Roughly 50 non-community wells also exist to serve area businesses, farms, golf courses, and nurseries.<sup>30</sup>

The anticipated demand for individual wells is low; development is trending toward larger subdivisions (greater than 25 units), which are required by the UDC to be served by public water. The number of individual wells is anticipated to only increase by 0.5 percent through 2050. The anticipated increase in demand for public water corresponds with the projected increase in population over time. The demand for public water is anticipated to peak in 2020 and decrease into 2050, and based on the population projections there is adequate groundwater available to service the increase in population and associated households.<sup>31</sup>

<sup>30</sup> “Water Supply and Demand in Southern New Castle County through 2050” draft white paper. Water Supply Coordinating Council / U of D WRA, 2019

<sup>31</sup> Ibid.

Sufficient availability of groundwater is expected to meet peak demands from public water supply uses provided that:

Public water supply and irrigation wells are pumped in accordance with Delaware Department of Natural Resources and Environmental Control (DNREC) water allocation limits. DNREC should continue to monitor demands and water levels from allocated public water supply wells and irrigation wells so as not to diminish the capacity of irrigation wells for producers that wish to sustain farming in southern New Castle County; and

Water purveyors interconnect between and within systems, add new finished water storage and aquifer storage and recovery, and transport water from aquifers with excess availability south of Townsend to growth areas between Middletown/Odessa and the Chesapeake & Delaware Canal.

### Quality

While supply would seem to be sufficient for the duration of the planning period, quality of groundwater sources has been the subject of interest among governmental authorities in recent decades. In southern New Castle County the conversion of agricultural lands has given rise to the desire to monitor groundwater quality. In 1996, the Delaware Geologic Survey began a study entitled "Design, Development and Implementation of a Ground-Water Quality Monitoring Network for Southern New Castle County, Delaware".

The DGS study initially identified the location of existing wellheads in the planning area and established monitoring criteria. The planning area included the more than 200 square miles of New Castle County south of the C & D Canal. Past research documented elevated nitrate concentrations in the unconfined aquifer system. The DGS study indeed found higher levels of nitrate-nitrogen, evidence of two herbicides, atrazine and triazine, and higher than desirable pH levels, all of which are likely the result of human activity.

These issues existed prior to the County taking steps to protect wellhead areas, and as such it is anticipated that the Water Resource Protection Area regulations the County put in place and subsequently revised (as discussed below) are adequately addressing water quality problems.

Delaware has established targeted reductions for watersheds that are impaired by contaminants and that do not meet water quality standards set to protect waterways for designated uses such as recreational contact, drinking water or to support aquatic life. These targets, or Total Maximum Daily Loads (TMDLs), have also been established for the Chesapeake Bay and its tributaries through the Chesapeake Bay Program under EPA, in cooperation with member states and for tributaries of the Delaware Estuary (Figure 0-14). All major watersheds within southern NCC experience impairment due to excess nitrogen and phosphorous.



<b>Watershed</b>	<b>TMDL Criteria</b>
Appoquinimink River	60% reduction in Nitrogen and Phosphorus loading ; bacteria reduction of between 11-15% in freshwater areas and 72-73% in marine areas
Blackbird Creek	40% reduction in Nitrogen and Phosphorus loading ; 80% reduction in bacteria loads
Bohemia River	24% reduction in Nitrogen; 20% reduction in Phosphorus; Sediment loads from Delaware's portion of the Chesapeake must remain at 2009 levels under this TMDL.
C&D Canal	24% reduction in Nitrogen ; 20% reduction in Phosphorus ; Sediment loads from Delaware's portion of the Chesapeake must remain at 2009 levels under this TMDL.
Sassafras River	24% reduction in Nitrogen ; 20% reduction in Phosphorus ; Sediment loads from Delaware's portion of the Chesapeake must remain at 2009 levels under this TMDL.
Chester River	24% reduction in Nitrogen ; 20% reduction in Phosphorus ; Sediment loads from Delaware's portion of the Chesapeake must remain at 2009 levels under this TMDL.

**Figure 0-14: TMDL Criteria for Southern New Castle County (Source: Use of On-site Wastewater Treatment Systems in Southern New Castle County, Duffield 2019)**

The DNREC program with a goal for improving surface water quality is regulated/implemented through/by the Surface Water Discharges Section (SWDS). The SWDS regulates point sources of pollution including municipal and industrial wastewater treatment systems and their construction, biosolids applications, and stormwater discharges associated with industrial activities. The SWDS is also responsible for issuing regulatory permits under the National Pollutant Discharge Elimination System (NPDES), which require permittees to establish Water Quality Improvement Plans to achieve TMDL's.

The DNREC program tasked with protecting groundwater is the Groundwater Discharges Section (GWDS). The GWDS oversees all aspects of the siting, design and installation of onsite wastewater treatment and disposal systems (known as septic systems).

Despite the recharge of stormwater and on-site wastewater treatment systems to the Columbia aquifer which provides base flow to surface water, there is currently no regulatory connection between the GWDS and the NPDES TMDL requirements.

## SEWER PLANNING AND EXPANSION

Prior to the adoption of the Unified Development Code (UDC) in December 1997, County sanitary sewer service below the Chesapeake and Delaware (C&D) Canal was limited to Port Penn and the M-O-T treatment facility, which serviced the area around Odessa and Townsend. With the adoption of the UDC and the 1996 Comprehensive Development Plan (“Comprehensive Plan/Comp Plan”), the County increased emphasis on centralized sewer service by expanding the sewer service area and by limiting septic systems to a minimum of two-acre lots. These decisions were based on studies indicating concerns with nitrogen in the groundwater, the high cost of County septic elimination projects and the anticipated growth in this area. The Southern Sewer Service Area (SSSA) was then created, which encompassed all Suburban-zoned land below the C&D Canal. The SSSA was bounded by the C&D Canal to the north, Maryland to the west, the Delaware River to the east and Middletown to the south.

In the early 2000s, the County designed a centralized sewer system for the SSSA, which included an extensive collection system and a new spray irrigation treatment facility on over 900 acres of land north of Middletown. The plan was to build the spray irrigation facility and the central core infrastructure first, moving next to the western wing and finally to the eastern wing. It would have taken 5-10 years to fully build-out all of this planned infrastructure. At this time, the UDC allowed development plans to continue through the record plan process anywhere in the SSSA, regardless of the timing of the County’s sewer infrastructure.

In 2006, the County hired a consultant to evaluate and update its plans for the SSSA. This study was initiated in large part due to the concern with the high upfront costs of the original plan and a reduction in the growth rate projections due to an economic downturn. The study resulted in a decision to purchase treatment capacity from Middletown rather than construct a new spray irrigation facility, to limit sewer infrastructure to the central core and to coordinate infrastructure investments with other governments. This plan was anticipated to meet the projected growth of the area until approximately 2025. To effectuate this plan, it was recognized that the County would have to settle claims from a handful of developers who had development plans outside of the central core. The 2007 Comp Plan generally reflected this plan.

The County completed construction of the central core collection system in 2009 and development progressed in this area until present day. In 2012, the County completed an updated Comprehensive Plan. This plan did not adequately reflect the County’s intent to limit sewer infrastructure and growth to the central core for the next ten years. Around this time the UDC was amended to eliminate NCC septic requirements such as two-acres lot sizes and the installation of dry sewer lines. The County now defers to DNREC for septic standards.

In 2018, the County received numerous proposals for major development plans to be serviced by septic systems in the western wing of the SSSA. This was likely due to the construction of Route 301, an upturn in the economy, inconsistent sewer/growth policies and the decreased County regulation of septic systems. A majority of the western wing is located within the Chesapeake Bay Watershed, where efforts to limit the number of future septic systems and even reduce the number of existing septic systems are expected by the Delaware Chesapeake Bay Watershed Implementation Plan.

Managing and coordinating growth and development, as well as preservation, is closely related to planning, policies, and installation of sewer infrastructure. The approach to planning and development of sewer infrastructure in the past has had limited success in achieving intended results of sustainable growth and preserving important environmental and agricultural resources.

## SEPTIC SYSTEMS AND PACKAGE PLANTS

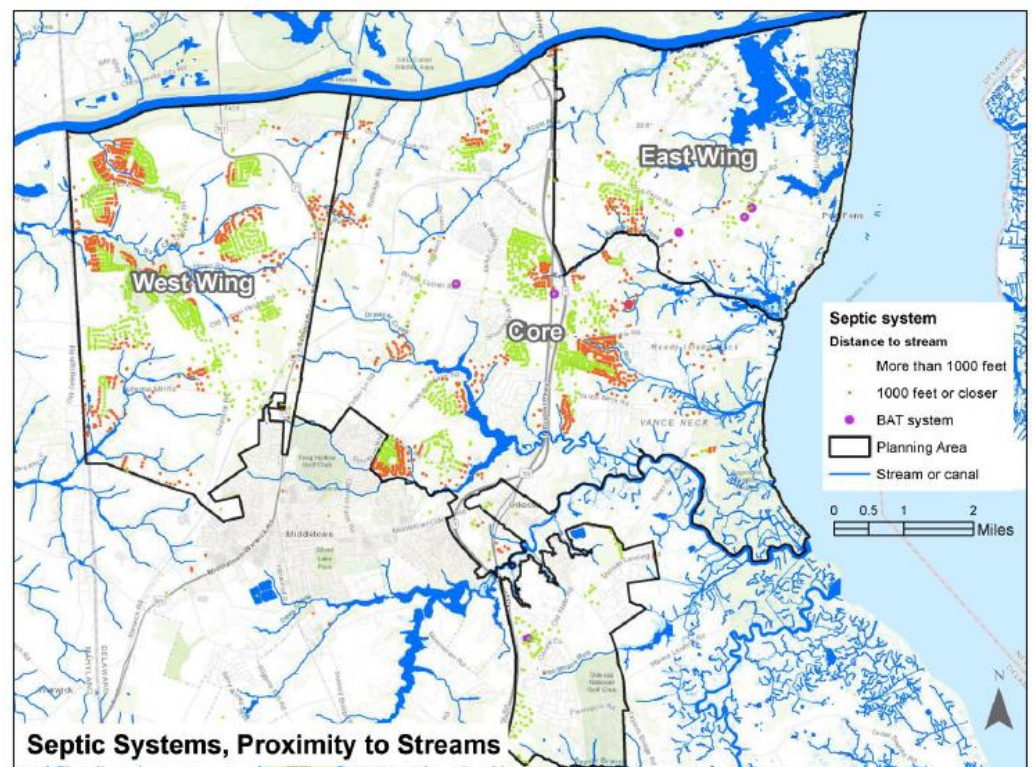
The University of Delaware completed a comparison of the effect on groundwater infiltration of total nitrogen (TN) from on-site septic systems versus sewer parcels between two hypothetical scenarios for residential development within the planning areas: (1) a development of 500 single-family residential ½ acre parcels with new on-site septic disposal, and (2) the same new development connected to the central sewer service. Using the conceptual model developed in the 2016 Tetra Tech report (D'Amato et al. 2016) to estimate the delivery of nutrients (TN) to the environment, the following conclusions were reached:

- The average lot on septic will deliver 12.1lb/yr. of TN to the environment
- The average lot on sanitary sewer will deliver 0.55lb/yr. of TN to the environment

These results indicate that a typical lot with a septic system can potentially deliver 95% more nitrogen to groundwater than that same lot on sewer.

Delaware's revised Septic System Regulations (2014) require that new and replaced septic systems, called BAT, or Best Available Technology, be installed within 1,000 feet from streams draining to

Figure 0-15: Septic System Proximity to Streams. (Source: White Paper, Southern New Castle County Wastewater Plan, 2019.)



Chesapeake Bay tidal waters.<sup>32</sup> However, because this technology is not required for all Delaware streams, there exist nearly 1,800 septic systems located within 1,000 feet of streams in the east wing, central core, and west wing of the planning area and only a very few meet these higher standards (Figure 0-15). Nearly 1/3 of septic systems in these planning areas are 20 years or older with the greatest total number located in the West Wing (Figure 0-16). The useful life of septic systems is usually around 20 years old and then these systems require replacement or renovation. These are important factors to consider in planning for growth and infrastructure.

The potential for environmental pollution associated with septic systems, along with the current level of development pressure seen in southern New Castle County, led to the passing of a moratorium prohibiting no major developments (more than 5 lots) to be on septic systems. This moratorium went into effect in early 2019 and will be in place for one year from the date of signing.

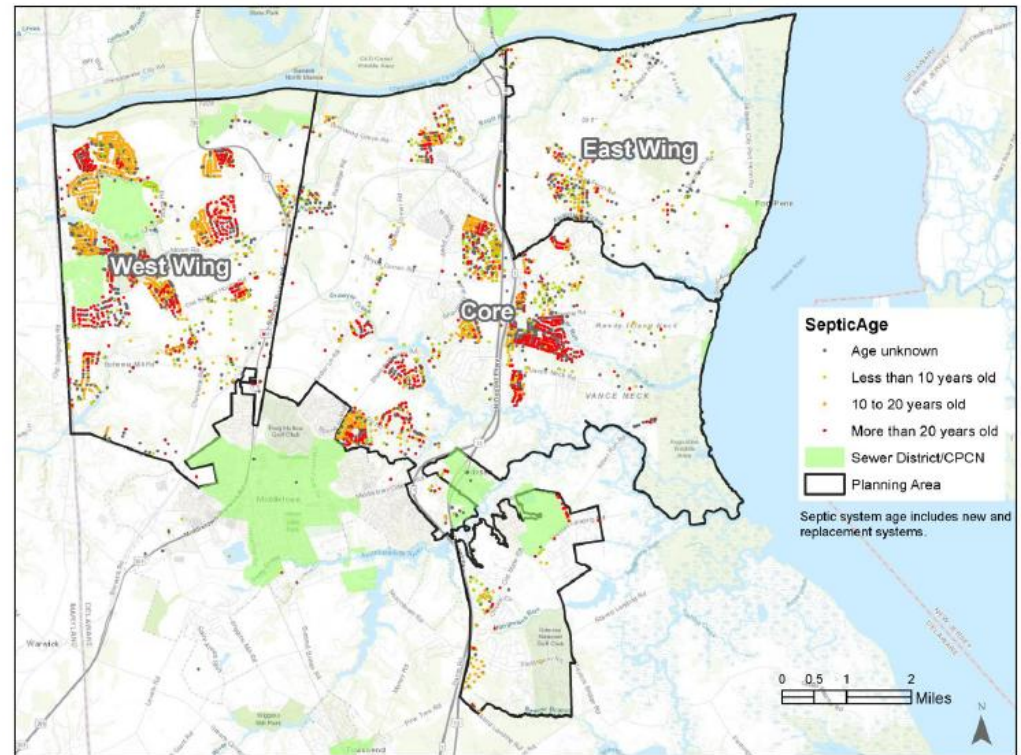
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<sup>32</sup> Section 3.30 indicates that new and replacement systems within 1,000-feet of Chesapeake Bay tidal water shall meet performance standards for N and P. Enforcement ostensibly occurs through DNREC during property transfer processes when application is made to install or replace an existing system.

A septic elimination program exists for developments that wish to connect to the public sewer system. The process is voluntary and initiated by homeowners, typically when their system is at the point of failure. Since the program was revised in the mid-2000s, Public Works has not completed a septic elimination project, mostly due to high costs. In 1992 the cost of septic system relief was \$10,000 per home. The 2012 Comprehensive Plan lists the septic relief cost at \$25,000 per dwelling.<sup>33</sup> Public Works is currently revising the existing septic elimination program. (Source: White Paper, Southern New Castle County Wastewater Plan, 2019.)

New Castle County estimates that there could be an additional 4,932 lots on septic in the East and West Wing planning areas if the current regulations governing on-lot wastewater treatment are not revised. Based upon the University of Delaware findings, the potential reduction in TN delivered to groundwater if these lots were connected to a sewer system is nearly 57,000 lb./yr.

Figure 0-16: Age of Septic Systems in Southern NCC (Source: White Paper, Southern New Castle County Wastewater Plan, 2019)



<sup>33</sup> This estimate was generated in 2012; NCC has not completed a project under the current septic elimination program. That estimate is for collection system construction, does not include on-lot work (lateral, septic system abandonment).



# ***Transportation: Existing Conditions and Programs***

## **ROAD NETWORK**

The road network provides functions of land access and mobility. Roadways are grouped into classes or systems according to the character of service they are intended to provide (Figure 0-17). As specified by the Federal Highway Administration, the role that a particular roadway should play in serving the flow of trips through the network is defined by its functional classification. The classifications include the following, listed order of increasing importance of land access and in order of decreasing emphasis on travel speed: Freeway, Expressway, Principal or Major Arterial, Minor Arterial, Collector, Local.

Arterials provide a high level of mobility and a greater degree of access control, while local facilities provide a high level of access to adjacent properties but a low level of mobility. Collector roadways provide a balance between mobility and land access and connect the arterial roads to local roads and destinations.

In southern New Castle County, several of the collector roads are in areas that have experienced (or will experience) significant amounts of residential development, mainly in the area to the north of Middletown. Nearly half of all roads in the planning area are classified as local roads, most of which consist of subdivision streets.

US Route 301 in Delaware (DE) is a new limited-access toll highway that opened to traffic in January 2019. US 301 has a partial interchange with DE 1 providing for movements to and from the north on DE 1. US Route 301 in DE runs southwest to the Maryland border southeast of Warwick, with interchanges in DE at Jamison Corner Road, DE 71, and DE 299. The roadway is tolled in DE with all-electronic tolling. At the time of opening, the toll for vehicles travelling through all four interchanges is \$4.00 for passenger vehicles and \$12.00 for trucks.

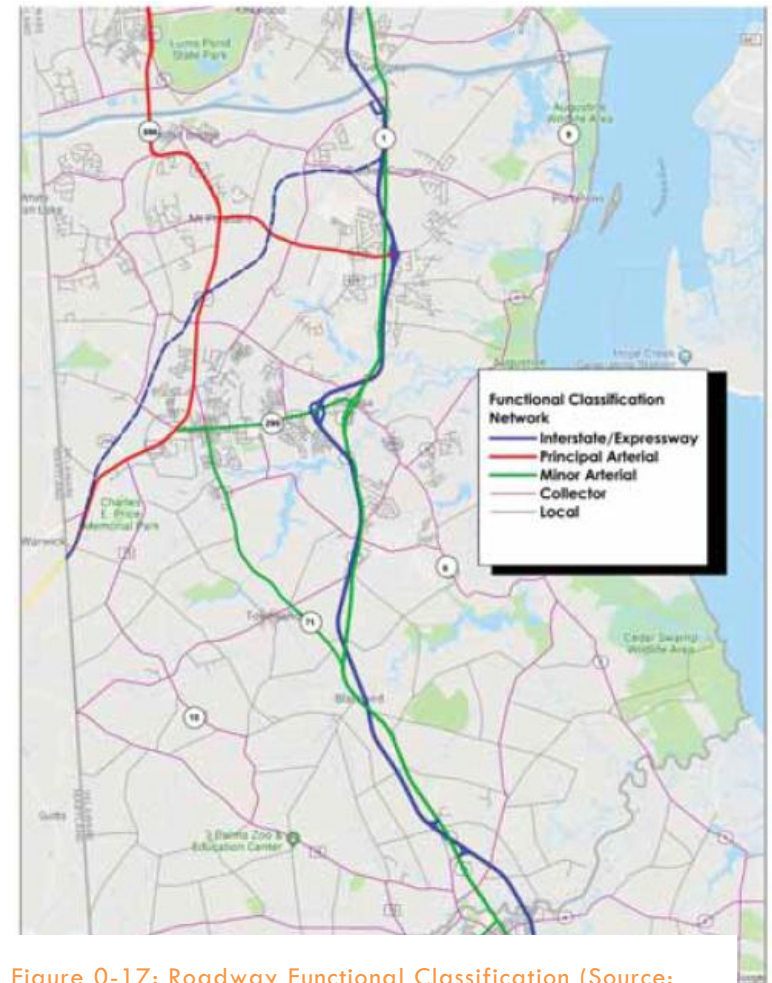


Figure 0-17: Roadway Functional Classification (Source: DeIDOT, FHWA)



## EXISTING TRAFFIC VOLUMES

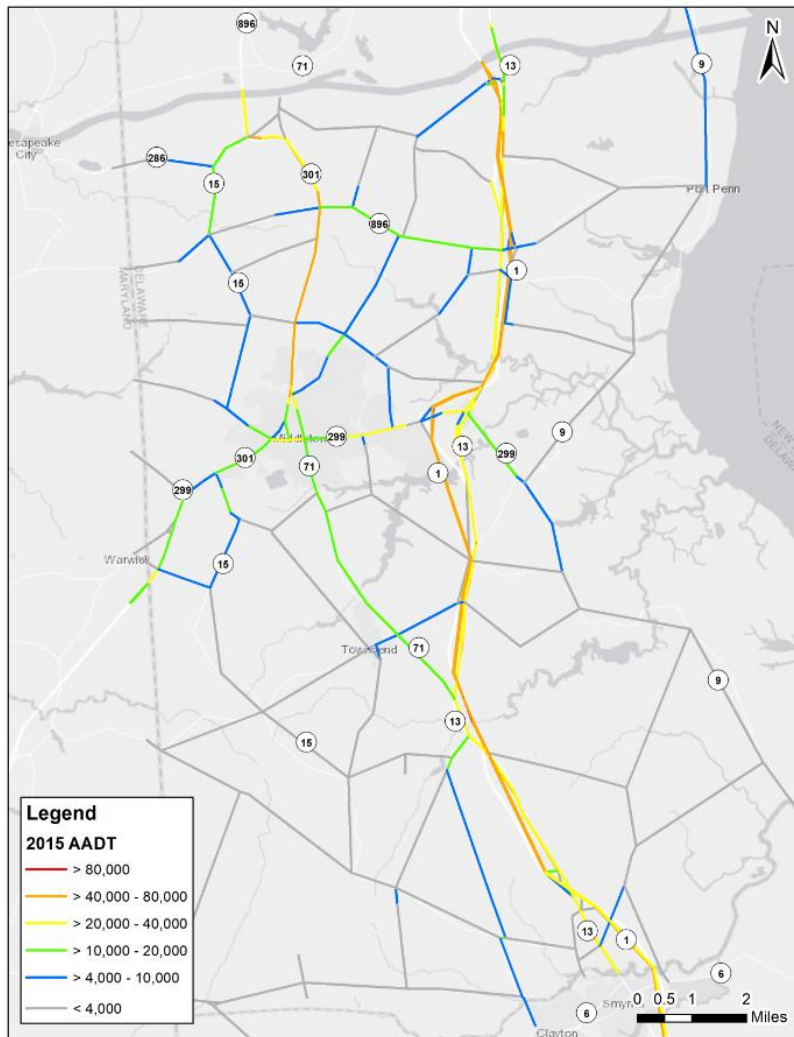


Figure 0-18: Year 2015 Average Annual Daily Traffic Volumes (Source: DelDOT)

The major roads in southern New Castle County carry an Average Annual Daily Traffic volume (AADT) in excess of 10,000 vehicles per day. However, many planning area roadways carry very low daily volume, less than 4,000 AADT (Figure 0-18).<sup>34</sup>

## PLANNED ROAD IMPROVEMENT PROJECTS

WILMAPCO's Regional Transportation Plan (RTP) serves as the County's transportation plan. The plan identifies regional challenges, goals, and transportation investments to meet mobility, accessibility, and safety needs. The 2050 RTP is a fiscally constrained plan with Financially Reasonable (based on anticipated revenues) Projects for New Castle County planned for 2020-2050. Additionally, the County partners with DelDOT to evaluate transportation facilities and ensure a safe, efficient, and environmentally-sound transportation network to move people and goods throughout the County. DelDOT prepares both a Long-Range Transportation Plan (LRTP) and a six-year Capital Transportation Program (CTP) to implement the LRTP and is responsible for road construction in line with the LRTP and the CTP.

In addition, Three Transportation Improvement Districts (TID) exist in the SNCC area (Southern New Castle County TID, Hyett's Corner TID and the Westtown TID) and a fourth TID is under development. TIDs are created for the purpose of comprehensively coordinating land use and transportation within the specific geographical area of each TID and to secure required improvements to transportation facilities within the TID area. TIDs are created by agreement between DelDOT and the relevant local government or governments. WILMAPCO is also a party to each agreement. DelDOT performs the traffic study that identifies transportation improvements based on development within the TID area.

<sup>34</sup> These volumes pre-date the construction of the new US 301 limited access road.

There are 23 road improvement projects that are in the pipeline as a result of all of these planning processes (Figure 0-19). These identified improvements are expected to be in place by 2050. Many of the projects include pedestrian and bicycle facilities adjacent to the roadway.

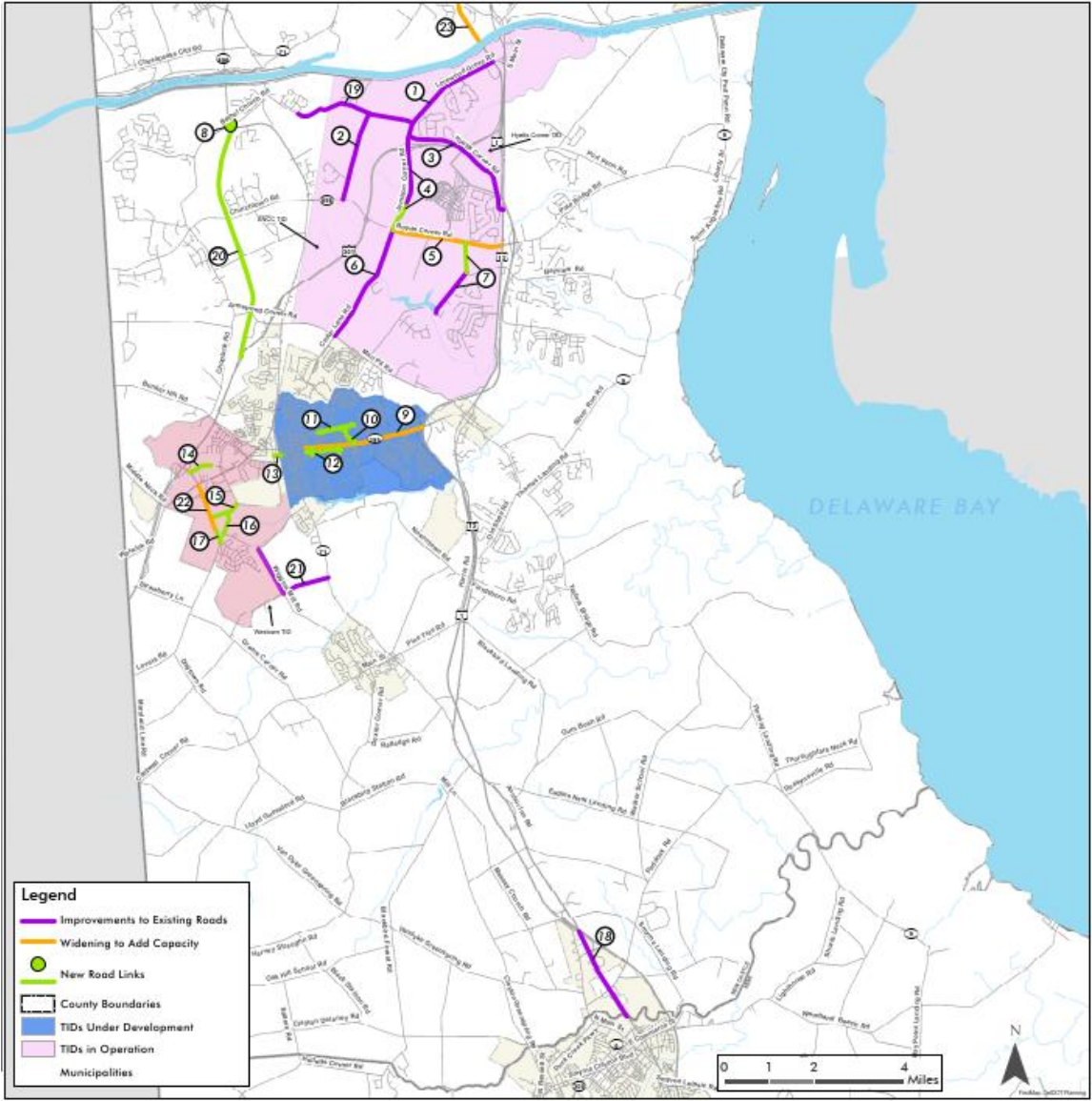


Figure 0-19: Road Improvement Projects Anticipated to be Completed by Year 2050

## PLANNED ROAD IMPROVEMENT PROJECTS

Table 6: Planned Road Improvement Projects

#	Project	WILMAPCO 2019-2022 TIP	WIL- MAPCO 2050 RTP	DELDOT 2020- 2025 CTP	SNCC TID	EASTOWN TID	WESTOWN TID
1	Lorewood Grove Road East: Hyetts Corner (Rd 412A) - SR 1 - Improve to two 11-foot lanes with 8-foot shoulders and a 10-foot multi-use path on one side of the roadway	✓	✓	✓	✓		
2	Ratledge Road - Widen to 2-12' lanes, shoulders and 10' bike path				✓		
3	Hyetts Corner Road - Widen to 2-12' lanes, 8' shoulders and 10' bike path				✓		
4	Jamison Corner Road - Widen to 2-12' lanes, 8' shoulders and 10' bike path, with relocation at Boyds Corner Road	✓		✓	✓		
5	Boyds Corner Road - Cedar Lane Road to US 13 - Improve to four 12-foot lanes with 10-foot shoulders and a 10-foot multi-use path on both sides	✓		✓	✓		
6	Cedar Lane Road: Marl Pit Road to Boyd's Corner Road - Improve to two 12-foot lanes with 8-foot shoulders, 10-foot multi-use path on west side of the roadway, and construction of a roundabout at the intersection of Cedar Lane Road and Marl Pit Road	✓	✓	✓	✓		
7	Shallcross Lake Road: Improve to two 11-foot lanes with 5-foot shoulders and a 10-foot path south of Greylag Road; relocate between Greylag Road and Boyds Corner Road	✓		✓	✓		
8	SR 896/Bethel Church Interchange - Improve highway safety by removing thru traffic from local roads, while minimizing environmental impacts and accommodating existing and planned development	✓	✓	✓			

#	Project	WILMAPCO 2019-2022 TIP	WIL- MAPCO 2050 RTP	DELDOT 2020- 2025 CTP	SNCC TID	EASTOWN TID	WESTOWN TID
9	SR 299: SR 1 to Catherine Street - Widen to two lanes in each direction from SR 1 to Cleaver Farm Road, and a two-way center turn lane will be added from Cleaver Farm Road to Catherine Street along with pedestrian and bicycle improvements	✓		✓			
10	Silver Lake Road - Eastown TID					✓	
11	East Lake Street - Eastown TID					✓	
12	East Green Street - Eastown TID					✓	
13	West Green Street - Eastown TID					✓	
14	Connector from Levels Rd east of US 301 Bypass interchange to Merrimac Ave.						✓
15	Connector from Merrimac Ave./ Industrial Rd west to Levels Rd						✓
16	Road from #15 Connector to Levels Road roundabout						✓
17	Right turn bypass lane at Levels Road roundabout						✓
18	US 13: Duck Creek - SR 1 - controlled access, sidewalk, bike access, and other amenities	✓	✓				
19	Lorewood Grove Road West: Breakwater Drive - Rd 412A - Improve to two 11-foot lanes with 5-foot shoulders and 10-foot bike path		✓		✓		
20	US 301 Spur - New limited access highway		✓				
21	Wiggins Mill Road - Improve roadway, improve non-motorized access		✓				
22	Levels Road - Widen roadway from Middletown-Warwick Road/Old US 301 to where project #17 begins, adding turn lanes and widening to two travel lanes in each direction.						✓
23	SR 1 - Expand and reconstruct roadway from Tybouts Corner to the Roth Bridge		✓				

## TRANSIT

At this time, DART planners are working on proposals to modify and/or enhance some of the routes serving southern New Castle County. DART's planners attended the Master Plan public workshop on October 7, 2019 to share these ideas with residents and record their comments. A more detailed presentation has been planned as part of a Community Conversation at the Appoquinimink Library on October 30, after which DART will solidify their service proposal for their next service change, which will occur in May 2020. Another public hearing will be held in early 2020 to present the final proposal.

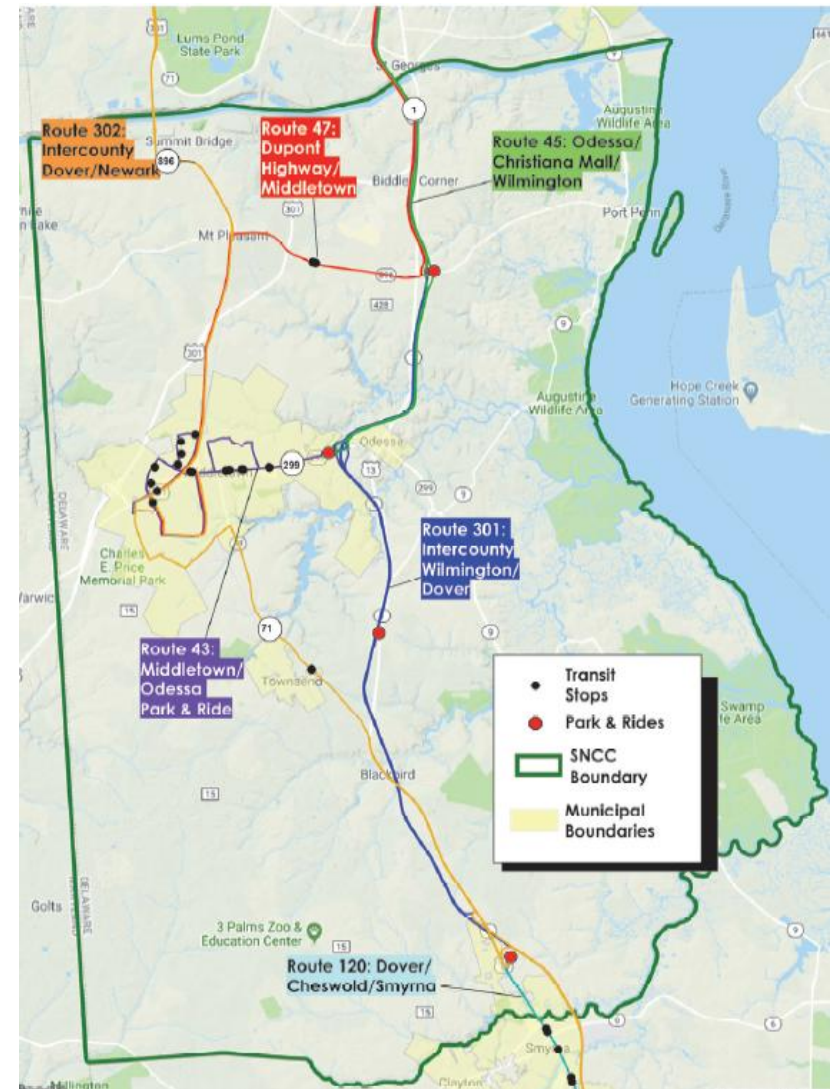


Figure 0-20: DTC Fixed Routes

## NEW CASTLE COUNTY BICYCLE PLAN

As noted in the body of the report, in summer 2018, WILMAPCO launched development of the New Castle County Bicycle Plan, with the goals of:

- improved safety, access and comfort of bicycling
- prioritization of infrastructure improvements including pathways, on-street routes, and end of trip needs such as bike parking.
- identification of programs and policies for education, enforcement and encouragement

LTS Level	Description
LTS Level 1	Most children can feel safe on these streets
LTS Level 2	The mainstream “interested but concerned” adult population will feel safe on these streets
LTS Level 3	Streets that are acceptable to the “enthused and confident” riders who still prefer having their own dedicated space
LTS Level 4	High stress streets with high speed limits, multiple travel lanes, limited or non-existent bikeways and long intersection crossing distances

Table 7: Level of Traffic Stress Definitions

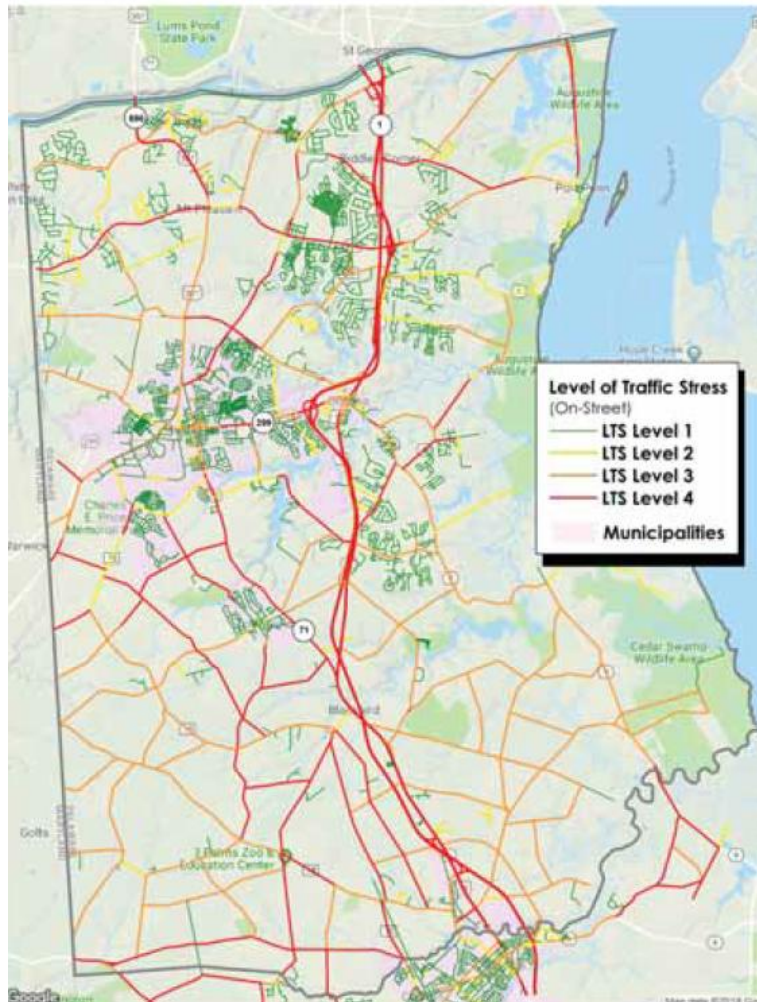
WILMAPCO has worked with DelDOT to map existing bicycle routes and score their “level of traffic stress” (LTS) to show places that are and aren’t comfortable for most cyclists. LTS is used to categorize roads by the type of riders who are willing to use them based on conditions such as traffic volume and speed, presence of bike lanes, bike lane width, and presence of a physical barrier between the bike lane and traffic (**Error! Reference source not found.**). Ideally, a person will eventually be able to comfortably ride a bike to most of their daily destinations on a network of low-stress streets and trails.

#### Key Points:

- While almost half of existing roads are classified as LTS Level 1, nearly all of these are limited to subdivision streets
- Of the remaining network, roughly 44% fall into levels 3 and 4, which are suitable only for experienced riders or not suitable at all.
- As a result, connectivity between neighborhoods and other destinations can be difficult.

Two bicycle plan workshops were held in southern New Castle County: in Townsend on June 6, 2018 and at the Southern New Castle County Master Plan Information Session in Odessa on October 17, 2018. In addition to those workshops, an online survey was launched in early 2019 that provided feedback from 289 respondents.

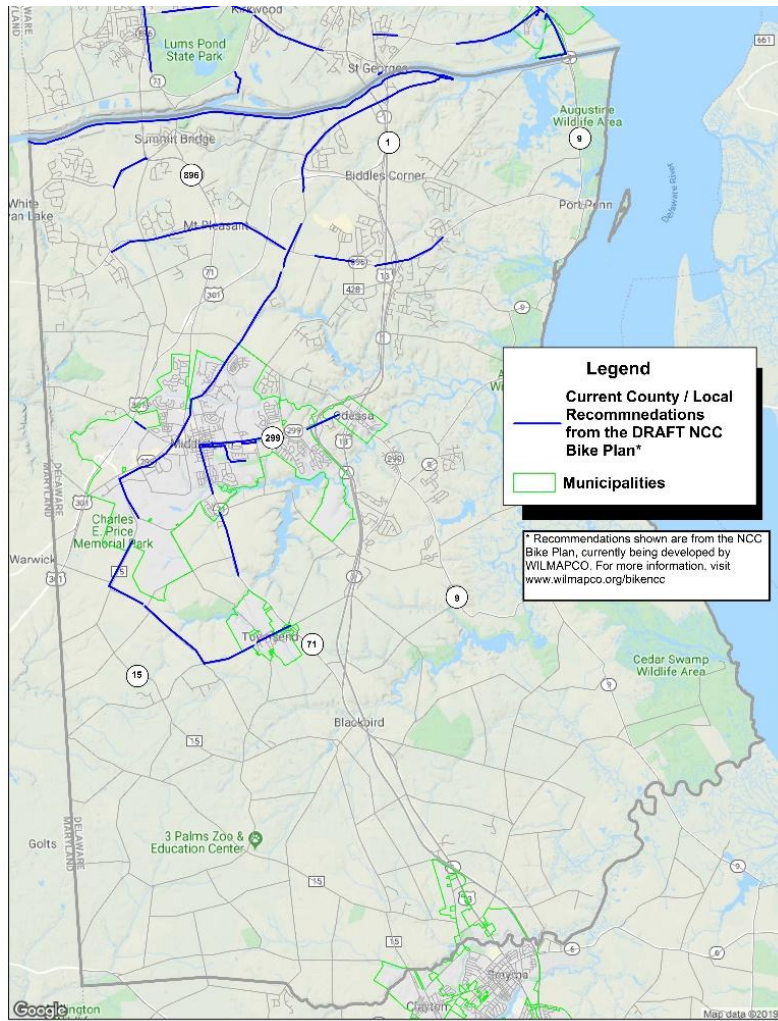




**Figure 0-21: Level of Traffic Stress for Bicycling on Southern New Castle County Roadways (Source: Delaware Department of Transportation)**

Maps that were on display at the October 7, 2019 Southern New Castle County Master Plan workshop showed the existing sidewalk and trail network in the planning area and drew attention to the gaps in the network. Many neighborhoods and subdivisions have connected networks within their boundaries but lack connections to destinations, such as schools, parks and retail areas. There are also segments of sidepaths and trails along connector roads, but full trail connections between these areas and municipalities are also missing. Likewise, a system of trails and sidepaths that make connections to the broader New Castle County trail network are also absent. It is envisioned that residents will one day be able to leave their neighborhoods and walk or bike to municipalities and even to connections that lead them to the St. Georges Bridge, where they can safely cross the C&D Canal and connect with the extensive sidepath and trail system that exists in northern New Castle County and beyond.

A draft report is currently being developed, with completion expected in January 2020. It is expected that the Southern New Castle County Master Plan development process will allow further discussions with residents and more specific areas of need will be highlighted and documented.



**Figure 0-22: Current Recommendations in Draft New Castle County Bicycle Plan (Source: WILMAPCO)**

## TRANSIT RIDERSHIP

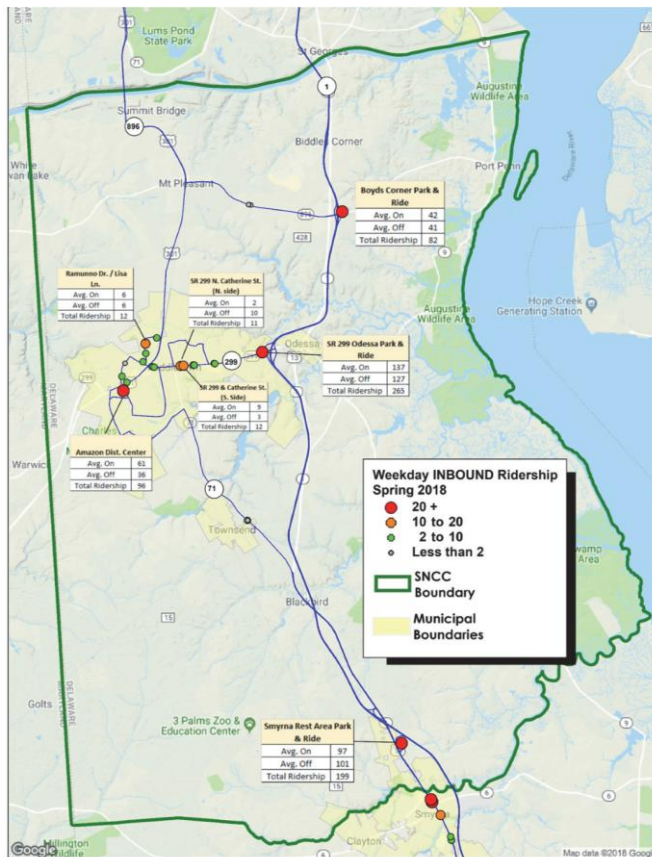
Due to the low population density found in southern New Castle County, the park and ride lots along SR 1 have had the most consistently strong ridership of all stops in the planning area: Boyds Corner (82 riders/day), SR 299 Odessa (265 riders/day) and Smyrna (199 riders/day). The bus stop at Merrimac Avenue serving Amazon also has higher ridership, at 96 riders/day Figure 0-23)<sup>35</sup>.

Figure 0-23 shows the results of the most recent annual park and ride usage survey performed by WILMAPCO.

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<sup>35</sup> Transit stop usage is classified as the total number of riders who board and depart the bus at each stop. Ridership data provided by the Delaware Transit Corporation (DTC). Data being used in this analysis is from ridership data collected in May 2018, surveying weekday Inbound riders.

**Figure 0-23: DTC Transit Stop Usage**



At this time, DART planners are working on proposals to modify and/or enhance some of the routes serving southern New Castle County. DART's planners attended the Master Plan public workshop on October 7, 2019 to share these ideas with residents and record their comments. A more detailed presentation has been planned as part of a Community Conversation at the Appoquinimink Library on October 30, after which DART will solidify their service proposal for their next service change, which will occur in May 2020. Another public hearing will be held in early 2020 to present the final proposal.

## TRANSPORTATION SCENARIO ANALYSIS

With projected future growth and development in southern New Castle County, traffic volumes can be expected to increase. Questions to be answered by the transportation analysis of alternative scenarios are:

- Is there a significant difference between the land use scenarios in future traffic volumes and roadways with deficient levels of service?
- What transportation improvements are expected to be needed that are not already planned?

The first question has been analyzed as Phase 1 of the transportation analysis. Analysis was performed using Delaware's statewide travel demand model, also known as the Peninsula Model, to forecast future traffic volumes and compare with road capacity. Traffic Analysis Zones (TAZs) in the model locate population and employment in relation to the road network. Each roadway link in the model contains attributes that define the capacity of the link. The model

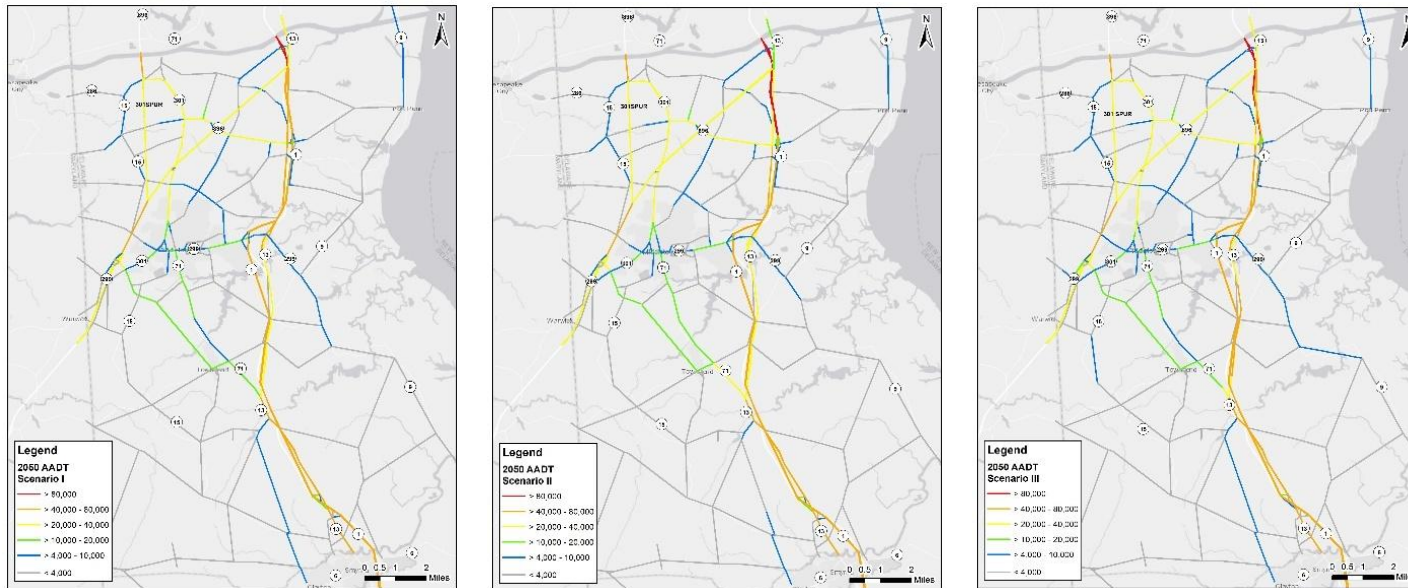
assigns traffic to the road network generally based on shortest travel time between origins and destinations. The model does make an adjustment for some avoidance of tolled roads when a reasonable alternate route is available.

The road network was modified to include limited-access US Route 301 in DE, which, opened in January 2019. The attributes of other roadway links in the model were modified to reflect road conditions after completion of improvements planned by 2050. Official demographic forecasts by Wilmington Area Planning Council for Year 2050 were utilized in the travel demand model for Scenario 1. As illustrated in the preceding scenario descriptions, modifications were made for Scenarios 2 and 3 to account for differences in location of households and employment in those scenarios. Average annual daily traffic volumes (AADT) were mapped for each of the scenarios (Figure 0-24)

Level of Service	Volume to Capacity Ratio
A	0.00 - 0.60
B	0.61 - 0.70
C	0.71 - 0.80
D	0.81 - 0.90
E	0.91 - 1.00
F	> 1.00

**Table 8: Level of Service Volume-to-Capacity Ratio**





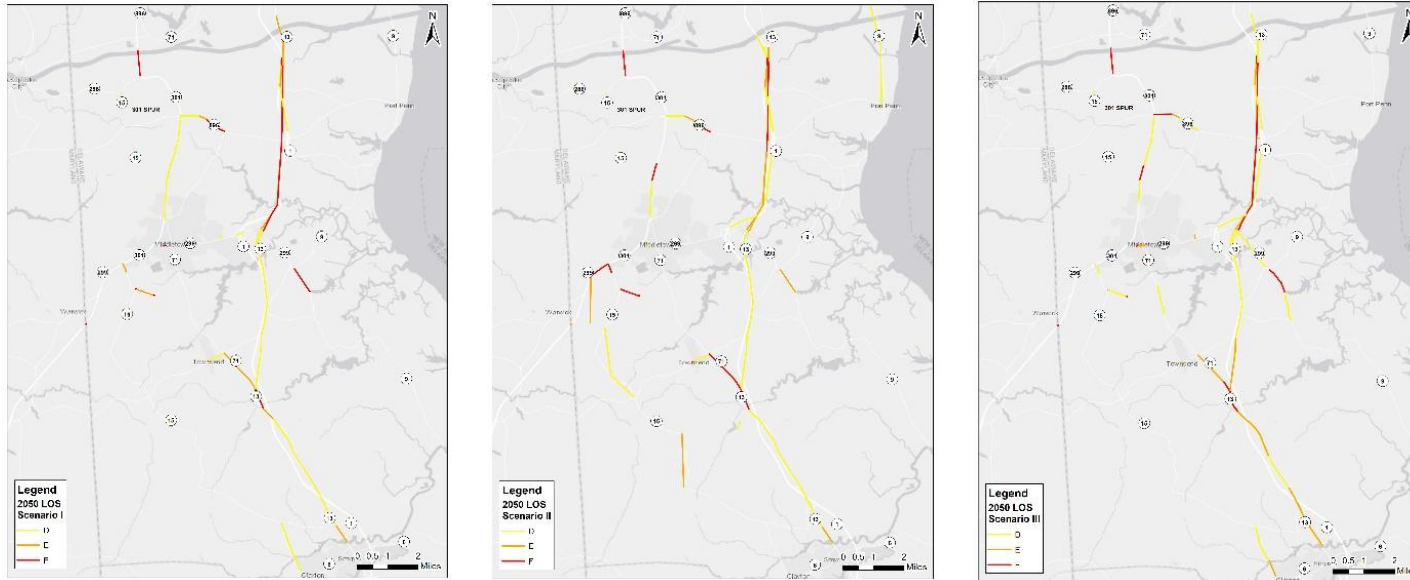
**Figure 0-24: AADT of Land Use Scenarios**

Analysis of congestion uses peak hour volumes rather than AADT. The Peninsula Model forecasts AM and PM peak hour volumes for each roadway link and compares with the link's hourly capacity to obtain a Level of Service (LOS). Level of Service is an indicator of quality of traffic flow. Letter grades from A to F are used with LOS A being free flow and LOS F being over capacity (Table 8).<sup>22</sup>

New Castle County's standard is minimum LOS D in sewer service areas and minimum LOS C outside sewer service areas. The UDC has more details regarding development in areas in which the existing level of service is worse lower than LOS D.

Maps of 2050 roadway link levels of service were created for each land use scenario (Figure 0-25). Because LOS C or better is acceptable in all areas of southern New Castle County regardless of sewer service, the maps show only road links that are forecast to be LOS D or below.





**Figure 0-25: Forecast Levels of Service for Scenarios**

Some road links show future deficiencies (LOS E or F) under all three land use scenarios; these are not scenario-dependent. The areas in which these links are located are:

- DE 896 north of Bethel Church Road
- DE 896 between Cedar Lane Road and the junction with DE 71 (the current Regional Transportation Plan calls for DE 896 to be widened to four lanes between DE 1 and Cedar Lane Road but not between Cedar Lane Road and DE 71).
- DE 299 between railroad and DE 71
- DE 9 Taylors Bridge Road south of its junction with DE 299
- US 13 north of DE 299
- DE 71 south of Townsend
- St. Anne's Church Road

Two additional road links show LOS deficiencies in Scenario 2:

- DE 9 north of Port Penn Road is LOS D under Scenario 2; this is below the County standard of LOS C in an unsewered area
- DE 15 south of Middletown has segments with LOS D and LOS E

One road link shows LOS F in Scenarios 2 and 3 but not in Scenario 1:

- DE 71 north of the future US 301 Spur

Since most of the anticipated future LOS deficiencies are not related to a particular scenario, the Phase 1 analysis determined transportation may not be a primary factor for the selection of a preferred scenario. The preferred scenario should be selected based on other factors..

## ***Environment & Preservation: Existing Conditions***

### **PHYSIOGRAPHY**

Southern New Castle County lies within the Atlantic Coastal Plain physiographic province. The Coastal Plain is characterized by relatively flat terrain and land elevations that are generally less than 100 feet above sea level. The Coastal Plain is comprised of two distinct physiographic units, the Coastal Lowlands and the Interior Lowlands. The Coastal Lowlands, generally that area to the east of Delaware Route 1, contain an extensive wetlands system, and the land elevations do not exceed approximately 50 feet above sea level. The Interior Lowlands make up the remainder of Southern New Castle County, to the west of Delaware Route 1, and are characterized by level terrain, wide meandering stream valleys and elevations of between 50 and 100 feet above sea level. It is in this area that the majority of the County's valuable agricultural lands are located, principally that area known as the "Levels". The Levels are located generally west of Delaware Route 896 between Townsend and the Chesapeake and Delaware Canal. Most of the land in the Coastal Plain contains slopes of less than 3%, a small amount in the range of 3 to 8% and few areas with slopes between 8 and 15% and 15 to 25%. In no instance do slopes in excess of 25% occur in the Coastal Plain.

Geologically, the Coastal Plain is comprised of sedimentary rocks that were deposited by the decomposition of the Piedmont region (the physiographic province to the north), as well as through marine deposits and glacial melting. These rocks are loose, or unconsolidated, sediments that were deposited in layers of varying portions of sand, gravel, silt and clay. Bedrock below the Coastal Plain is very deep, sloping southeastwardly from the Piedmont Province toward the Atlantic Ocean.

The soils in the Coastal Plain and in Southern New Castle County in particular are the result of the weathering of the parent geologic material, transported and deposited material, and the decomposition of plant and animal life. These combined forces over time produced a pattern of soil types with similar characteristics that have influenced the settlement patterns of Southern New Castle County.

The hydrologic features of Southern New Castle County consist of its major creeks and rivers, floodplains, lakes and ponds, wetlands and aquifer recharge areas. These features together with the underlying geologic conditions and the resulting landforms constitute the natural morphology of Southern New Castle County and have helped shaped its historic settlement patterns.

Another important hydrologic feature of Southern New Castle County is that the area lies within two different drainage basins or regions. While most of the land area is in the Delaware Bay Drainage Region, a smaller area generally to the west of Delaware Route 896 and extending the entire length of Southern New Castle County lies in the Chesapeake Bay Drainage Region.

The combination of the physiographic, subsurface and surface geologic structures and resulting landform and hydrologic conditions of Southern New Castle County have shaped its natural landscape as well as influenced its pattern of human settlement. Together the natural landscape and human interaction with it, in the form of settlement patterns, provide the character of southern New Castle County.

## **GEOLOGY**

Geologic characteristics affect such features as water bearing ability, structural carrying capacity, and agricultural yield potential. The surface geology is made up of soils, which are the weathered decomposition and disintegration of the exposed rock layer. Subsurface geology is especially important in this planning area because of an exclusive dependence on groundwater for domestic, agricultural and industrial purposes. The oldest and deepest of the sedimentary layers is the Potomac formation. The ingredients of this layer are sands, silts and clays which have originated from marine deposits. High water tables are characteristic of this formation. In addition, unconfined aquifers, i.e. those aquifers relatively near the surface which draw from broad areas of porous materials containing water, exist in this formation.

The Columbia formation is the primary surface layer of geology found in the Coastal Plain. It is made up of sands and gravels of glacial or wind-blown origin. Other than its significance as the exposed surface layer, the Columbia grouping of formations is the material which serves to filter and conduct surface water into the aquifers found in deeper formations. The condition of the upper layers plays a major role in the quality of the groundwater. Contamination from inefficient septic systems, industrial waste, agricultural chemicals, or saline intrusion can all have negative effects on the groundwater aquifers. Since the aquifers are essentially subsurface storage containers made up of sands, gravels and rocks, the quality of the water can be affected by degradation over time.

## **SOILS**

The Atlantic Coastal Plain comprises 100% of the geography of Southern New Castle County and five soil associations have been identified.

The MATAPEAKE-SASSAFRAS-URBAN LAND association occupies the largest area of Southern New Castle County in the upland area of the northwest region of the planning area. This is also the most prevalent association found in the entire County. The series is characterized by upper layers of silt loam to a depth of several feet. A wide variety of crops do well in this soil, with typically high yields. Erosion of this soil can be problematic, however the lack of significant slopes reduces concerns about erosion in most areas, other than in stream channels during times of surface runoff.

The second largest association in the planning area is SASSAFRAS-FALLSINGTON, found in the south-central area, between Townsend and Smyrna. This series contains moderate amounts of silt and clay. As with the Matapeake series, this series has strong agricultural productivity and is susceptible to erosion where slopes exist. Much of this series is found in level conditions.

The third most prevalent association is the FALLSINGTON-SASSAFRAS-WOODSTOWN, found in the southwest corner of the planning area. This association is characterized by poorly drained soils and, like previous associations, is an upland Coastal Plain soil. This soil can be productive when properly drained by either ditches or tiles. The water table beneath this area fluctuates seasonally, causing it to dry slowly in the spring. Its agricultural use is less favorable than other soils found to the north.

A large tidal marsh occupies much of the eastern boundary of the planning area and is strongly associated with adjacent series known as the KEYPORT-ELKTON association and the TIDAL MARSH association. Despite its proximity to the tidal marsh, the Keyport-Elkton association is variable in its drainage characteristics. These associations can be problematic for agriculture and extensive construction, although small areas of such can be found.

For the most part, the soils found in Southern New Castle County are productive agricultural soils, as evidenced by the historic proliferation of farms in the area. Most of the area suitable for farming has long been cleared of forest and has seen a variety of crops. These soils are also quite suitable for various forms of development, including structures, roads and utilities. This suitability is a dilemma for agricultural interests, as development pressures on these lands have contributed to land conversion in recent years.

Important distinctions between the highly productive agricultural soils and coastal-influenced soils offer guidance on appropriate uses of land.

## **BIOTIC RESOURCES**

The presence of forests and other vegetative resources in the planning area is principally the product of two factors, the first being the reduction of vegetative cover for agricultural purposes and the second being the preservation of natural areas by governmental and conservation organizations. Together, these factors have created a pattern of vegetative cover that is diverse, fragmented and often related to other natural systems.

A variety of forests are associated with water drainage areas, primarily because the underlying soils, slopes and moisture do not support agriculture. In many cases, these wooded areas provide a filtration buffer for the streams, deterring erosion and stabilizing stream banks. While some forests are found in the tidal wetlands near the Delaware River, the vast majority of forests in the planning area are to be found in the southwest region, south of Townsend. Here, poor natural drainage in a number of areas has resulted in land that is unsuitable for either agriculture or development. These forests contain numerous species of oak, as well as yellow poplar, beech, sweet gum, and black gum. Some of the most significant forests in the planning area are found in the state-owned Blackbird State Forest, where forest management techniques are employed and passive recreation is encouraged. The State of Delaware actively pursues the acquisition of forest lands statewide for the above purposes, often in cooperative ventures with federal and private organizations. Over the years, the state and county have had modest success in protecting both forested areas and other critical natural areas through both purchase and regulatory programs.

Other than stands of forest, vegetation is often concentrated along waterways in riparian corridors. Trees in these areas range from large sycamores and willows to smaller alders, hollies, and maples. The tree root systems provide the stream banks with necessary stability and the tree canopy shades the water, maintaining lower temperatures conducive for fish and insect breeding. One of the most common plants to be found in the wetlands areas is phragmites, a reed-like plant that dominates other plant communities and expands into vast areas. Unfortunately, the common form of phragmites found in most areas are non-natives that tend to outcompete other native plants, displace native animals, and dominate wetlands areas when not controlled.

Due to the lack of extensive naturally vegetated areas in the planning area, wildlife is correspondingly limited. This does not mean there are no wildlife to be found, however; mammals, reptiles, birds, fish or insects are abundant in most of the areas not in agriculture or development. The tidal marshes of the Delaware River are not only home to much wildlife, but also attract considerable numbers of migratory birds. The abundance of plant life and fish in the tidal marshes provides food and a resting point along the Atlantic flyway. Small mammals, represented by the muskrat, inhabit the marshes, as do deer and raccoon. Carp is an abundant fish in these waters, as are white catfish, weakfish, channel catfish, and eels. Many of the marshes are also home to a variety of birds, such as ducks, egrets, herons, and birds of prey.

## **WATER RESOURCES**

### **Drainage Basins/ Watersheds**

The Coastal Plain is a geologic province characterized by broad, flat drainage basins with complex water courses. Within the planning area of Southern New Castle County, there are eleven distinct watershed areas with the larger drainage basins of the Delaware and Chesapeake Bays. The majority of these watersheds drain to the Delaware River, while smaller areas drain both to the C and D Canal at the northern boundary and to the Chesapeake Bay through Maryland to the west. These waterbodies are characterized as having minimal gradients and originating in the Atlantic Coastal Plain. Their basins tend to be small in area, as compared to those of the Piedmont Region in northern New Castle County. This distinction is a result of the rather flat topographic features which can, at times, even result in drainage being shared or split into two adjacent watersheds.

The following eleven watersheds make up the planning area: 1) Chesapeake and Delaware Canal, 2) Augustine Creek / Silver Run, 3) Drawyers Creek, 4) Appoquinimink River, 5) Blackbird Creek, 6) Cedar Swamp, 7) Smyrna River, 8) Cypress Branch, 9) Sassafras River, 10) Sandy Branch / Great Bohemia Creek, and 11) Back Creek.

### **Streams and Rivers**

The eastern boundary of the planning area is the Delaware River. Major creeks and rivers of the planning area include the Appoquinimink River, Smyrna River, Blackbird Creek, Drawyers Creek, and the Chesapeake and Delaware Canal (formerly St. Georges Creek). Each one of these has an elaborate system of tributaries that have affected the way land has been used.

The C and D Canal is a manmade navigational channel that connects the northern reaches of the Chesapeake Bay (the Elk River) with the Delaware River. The mainstream length of the canal is 12.2 miles, and the channel is 450 feet wide and 35 feet deep. The Appoquinimink River is approximately 16 miles long and originates in the central part of the planning area west of Middletown. It flows through a complex system of marshes before merging with the Delaware River. The Smyrna River is 10 miles long and finds its origin near Clayton. This river makes up most of the southern boundary of New Castle County. Blackbird Creek is approximately 16 miles in length and originates in the Blackbird Forest in the southwest portion of the planning area. Drawyers Creek, which is approximately 6 miles in length, merges with the Appoquinimink River before discharging into the Delaware Bay. Much of the drainage of area of Drawyers Creek is comprised of developed land in and around Middletown.

Along the western boundary of the county are several drainage areas associated with rivers that discharge into the Chesapeake Bay. The Chester River begins in New Castle County and flows for 2 miles before entering Maryland. Of lesser magnitude are the Great Bohemia Creek and the upper reaches of the Sassafras River. Along with Back Creek, these waterbodies drain the western regions of Southern New Castle County.

### **Lakes, Ponds and Impoundments**

Several significant water impoundments exist in the central portion of the planning area. Two of these are within the Appoquinimink Creek watershed on two of its branches. Noxontown Pond was created by a man-made dam on the Appoquinimink Creek on lands of St. Andrews Academy, a private preparatory



school. This is the largest water impoundment in the planning area and one that has been monitored regularly, due to its association with the school. Noxontown Pond serves many purposes for St. Andrews, including use as a biology classroom, recreation for the school's students, and as the site for regional rowing regattas. The water quality of the pond remains high, due in part to St. Andrews' ownership of both the pond and a majority of the watershed area around it. A second and somewhat smaller impoundment lied just north of Noxontown Pond on a northern fork of the Appoquinimink Creek. This waterbody, known as Silver Lake, was heavily impacted in 1999 when Hurricane Floyd destroyed its dam structure. The State Division of Highways reconstructed the structure, filled the lake, and repaired Silver Lake Road which crosses the dam. A third impoundment, also part of the same Appoquinimink watershed, is Shallcross Lake, which was created by the damming of Drawyers Creek.

## Floodplains

Floodplains are typically defined as that portion of a stream valley that is covered in water when a river or stream overflows its banks. Such flooding can occur as a result of heavy rains or melting snow. Floodplains in the planning area are characterized as being either coastal or inland (riverine).

Inland floodplains serve as natural conveyance areas that store floodwaters and release them to downstream areas. Naturally vegetated inland floodplains can also act to filter runoff and collect and hold nutrients and other chemicals and pollutants. Coastal floodplains help to preserve the stability of the shoreline and encompass other areas such as tidal wetlands.

The locations of floodplains have been determined by FEMA in studies that evaluated topography, surface water characteristics, and historical flood data. Each of these floodplains is associated with a stream, creek or river. Most of the floodplains in Southern New Castle County are broad in width, due to the relatively flat adjacent terrain. In addition, several of these floodplain systems extend well past the central part of the planning area, again attesting to the lack of extreme topographical features.

## Wetlands

Two forms of wetlands are generally found in Southern New Castle County. Tidal Marsh wetlands correlate with the existence of streams and drainageways associated with the Delaware River. The second type is found in the southwest corner of the planning area where a diverse, but "spotty" pattern of wetlands is found. These are known as Delmarva Bays or Coastal Plain wetlands. Coastal plain wetlands are generally made up of low permeability soils coupled with a high-water table. Correspondingly, wetland plant communities are also prevalent in the area.

The accompanying mapping depicts the extent of mapped wetlands in the planning area pursuant to the National Wetlands Inventory (NWI). Although this mapping is generally accurate, not all wetlands are shown on NWI maps. The determination of site-specific boundaries by application of criteria found in the Unified Development Code (UDC) would yield a far more precise boundary, as well as depict those areas not referenced on the NWI map. The criteria used to designate wetlands are presence of hydric soils, indicator plants, or water. A landowner seeking approval of development plans must engage the services of a qualified wetlands delineator to prepare the necessary wetland boundary mapping.

Among other benefits, Wetlands provide a rich and abundant environment for the propagation of small mammals, birds, insects, and reptiles. Connectivity of wetland communities is of prime interest because wetlands are often part of biodiversity corridors, those areas that allow migration of wildlife and connect to other habitat areas or wetlands.

Approximately 6,000 acres of wetlands, 5,000 acres of natural areas, and 7,000 acres of floodplain would be impacted under current planning policies. Existing protections for these resources include Water Resource Protection Areas (WRPAs) and Riparian Buffer Areas.

Water Resource Protection Areas (WRPAs): The two types of WRPAs found in Southern New Castle County are Class A Wellhead Protection Areas and Recharge Area WRPAs. Among other things, WRPA requirements limit impervious cover, require precautionary measures to prevent leaks and spills, restrict rates of stormwater runoff, limit municipal and industrial waste disposal, and require agricultural operations to have USDA-approved agricultural conservation plans.

- Wellhead Protection Areas are surface and subsurface areas surrounding public water supply wells or wellfields, where the quantity or quality of groundwater moving towards these wells or wellfields may be adversely affected by land use activity. Such activity could result in reduction of recharge or lead to the introduction of contaminants into the public water supply. While the county has identified three classes of wellhead protection areas, southern New Castle County only contains Class A Wellhead areas, which consist of areas within a 300-foot radius of all public supply wells, classified as community water systems by the State of Delaware.
- Recharge WRPAs are areas designated as having the best potential for groundwater recharge. Such areas typically are in close proximity to surface waters and areas of highly permeable geologic deposits: coarse sand and coarse-to-medium sand.

Riparian Buffer Areas: To a great extent, the mapping of Riparian Buffer Areas (RBA) in the planning area is a composite of other natural features. Regardless, it is important to understand the extent and value of the RBA network. The RBA is comprised of varying zones on either side of a watercourse that contain vegetation; such areas filter sediment, decrease erosion, provide shade to reduce water temperatures, and supply habitat for terrestrial and aquatic organisms. RBAs generally encompass floodplain land and protect the unique settings of wetlands, ponds and lakes. Riparian Buffer Areas are extremely important to the environmental health of the region's drainageways. Creeks support an abundance of wildlife, which depend on suitable conditions to thrive. This healthy system is also highly dependent on the bank stabilization afforded by tree and shrub roots. The existing network of forested riparian areas tends to be very dense along portions of the Delaware River and the Chesapeake Bay drainage area.

## COUNTY AND STATE IDENTIFIED PROTECTION AREAS

### Critical Natural Areas

The identification of significant natural areas in New Castle County began in 1972 with a statewide inventory conducted by the Delaware Nature Society (DNS). In 1975 The New Castle County Natural Areas Study was prepared in conjunction with the Department of Parks and Recreation. Kent and Sussex Counties were also inventoried in 1976 and the combined three county study was published by DNS in 1978 as Delaware's Outstanding Natural Areas and Their Preservation. This document contained goals, criteria, and priorities for a program of natural areas preservation. Shortly after the document's publication, legislation was enacted at the State level assigning responsibility for managing a Natural Areas Preservation System to the Department of Natural Resources and Environmental Control (DNREC).

Currently, the State includes such areas in its Natural Areas Inventory. For regulatory purposes, New Castle County regards these areas as Critical Natural Areas.

Under the County Code, development proposals that contain a designated Critical Natural Area (CNA) must undertake an inventory of the site and propose measures to mitigate any disturbance.

The following is a list of critical natural areas identified in the DNS study. Some of these sites are small in scale and include unique habitat areas, archeological sites and geologic areas. Others are large areas of coastal wetlands.

- Biggs Farm - This area along the C & D Canal contains an outcrop of fossilized marine fauna discovered during canal widening and later erosion. It has regional Atlantic Coastal Plain significance due to the 111 species of mollusks found there.
- Thousand Acre Marsh - This 1160-acre marsh containing 70% open water is the habitat of muskrats and small numbers of mink and otters. The area is highly attractive to waterfowl and other birds whose breeding and feeding habitat is freshwater marsh. Native American artifacts have also been found, indicating seasonal encampments.
- Augustine Creek Marshes- This highly productive area is significant for being an essential buffer and feeding grounds for an adjacent Great Blue Heron nesting colony. The colony contains over 100 nests, making it rare in the United States. The marsh is also the site of several prehistoric sites.
- Silver Run Marshes - This is a marsh complex that has remained essentially unaltered by man. It has good water quality and serves as a prime area for fish reproduction and juvenile growth.
- Appoquinimink River Marshes - These marshes, including the Blackbird Creek system, are the only large marsh system in Delaware remaining essentially undisturbed by people. It has been recognized nationally due to the size and quality of its habitat. The Appoquinimink River varies from 140 to 230 feet in width with a 15-foot deep channel. The area is important as a nursery for several species of fish including catfish, weakfish, channel catfish, spot and eels. Breeding birds include several species of ducks, egrets, herons, and birds of prey. Included in the system is the Hell Island site, an archaeological site of many artifacts of the period between 600 and 900 AD, and the Marl Pit site, which contains a mineral deposit of Glauconite, or greensand, a complex silicate mineral.
- Pleistocene Plant deposits - This is the only known outcrop of non-marine fossils of the Pleistocene Epoch on the Delmarva Peninsula.

- Noxontown Pond - This impoundment was created in 1736, covers approximately 500 acres, and is on the property of St. Andrews School. See additional discussion under the section titled “Lakes, Ponds and Impoundments”.
- Cedar Swamp - Until a hurricane in 1878 breached its protective barrier beach, Cedar Swamp was freshwater and supported an abundant growth of Atlantic white cedar. Damage from the storm included the destruction of Collins Beach, a popular recreation destination. While several remnants of the white cedar forest still remain, the area today supports waterfowl and raptors, as well as raccoon and deer populations.
- Blackbird Delmarva Bays - This area, formerly known as Tyabout Carolina Bays, is sometimes referred to as sinkholes, whale wallows, round ponds, black bottoms, or loblollies. The bays are actually round with oval depressions and rims and vary in elevation from a few feet up to 20 feet at the center of the depressions. These geologic enigmas are about an acre in area and can be up to 4 feet deep. They are located in the Blackbird State Forest and are surrounded by mixed deciduous trees of mostly oak and hickory.
- Blackbird Creek – This 200-foot wide waterbody is a largely undisturbed creek system of marshes. The creek joins the Delaware River just south of the Appoquinimink River and encompasses many small tributaries in the southwest corner of the planning area.

## State Resource Areas

State Resource Areas (SRAs) are comprised of some of Delaware’s most environmentally valuable undeveloped lands and include parks, natural areas, conservation areas, certain wetlands, forests, cultural and geological resource areas. SRAs are important as they provide vital economic benefits, provide wildlife and plant habitat, protect water and air quality and generally enhance the quality of life of the people of Delaware. Such areas were originally designated by the state as a part of the implementation of the 1990 Delaware Land Protection Act (7 Del. C. §75).

Historically, such areas were considered primary candidates for protection and preservation due to the economic, social, and environmental benefits to all Delawareans. In New Castle County, SRAs are largely made up of Critical Natural Areas.

Pursuant to the Land Protection Act, it is the State’s responsibility to provide the counties and municipalities guidance on how to meet the requirements of the Acts. The Act clearly stipulates a County role in protecting SRAs and the County has indeed provided a significant level of protection to Critical Natural Areas. At the state level, SRA’s help guide the purchase of specific properties through the state’s Open Space Council.

Much of the state’s non-regulatory approach to protecting these areas comes from DNREC’s commitment to preserving the state’s coastal zone, which have also been protected by Delaware’s Coastal Zone Act for over 40 years. Due in large part to the legacy of that landmark legislation, more than half of the Delaware Bayshore’s acreage remains undeveloped, and is today protected as state or federal wildlife lands.

In addition, DNREC has been implementing an approach to assess, manage, and protect Delaware's natural resources. This approach, known as Whole Basin Management, encourages the various programs from throughout DNREC to work in an integrated manner to assess different geographic areas of the state defined on the basis of drainage patterns.

Finally, the Delaware National Estuarine Research Reserve (DNERR) is one of 29 [National Estuarine Research Reserves](#) across the country whose goal is to establish, protect, and manage natural estuarine habitats for research, education, and coastal stewardship. One of the two main components of the DNERR is

the [Blackbird Creek Reserve](#) in Townsend. This site includes both brackish and freshwater estuaries, and represents the diverse estuarine ecosystems found throughout the Mid-Atlantic region.

## **ECOSYSTEM AND HABITAT**

The presence of forests and other vegetative resources in the planning area is principally the product of two factors, the first being the reduction of vegetative cover for agricultural purposes and the second being the preservation of natural areas by governmental and conservation organizations. Together, these factors have created a pattern of vegetative cover that is diverse, fragmented, and often related to other natural systems.

Over the years, the state and county have had modest success in protecting both forested areas and other critical natural areas through both purchase and regulatory programs. Today, tree canopy cover ranges widely: 0% cover on farms and wetlands to > 40% in mature neighborhoods and > 70% in forests.

Due to the lack of extensive naturally vegetated areas in the planning area, wildlife is correspondingly limited. This does not mean there are no wildlife to be found, however; mammals, reptiles, birds, fish or insects are abundant in most of the areas not in agriculture or development. The tidal marshes of the Delaware River are not only home to much wildlife, but also attract considerable numbers of migratory birds. The abundance of plant life and fish in the tidal marshes provides food and a resting point along the Atlantic flyway. Small mammals, represented by the muskrat, inhabit the marshes, as do deer and raccoon. Carp is an abundant fish in these waters, as are white catfish, weakfish, channel catfish, and eels. Many of the marshes are also home to a variety of birds, such as ducks, egrets, herons, and birds of prey.

## **AGRICULTURAL RESOURCES AND LAND PRESERVATION**

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) defines prime farmland as follows:

Land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses. It has the soil quality, growing season, and moisture supply needed to produce economically sustained high yields of crops when treated and managed according to acceptable farming methods, including water management. In general, prime farmlands have an adequate and dependable water supply from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, acceptable salt and sodium content,

and few or no rocks. They are permeable to water and air. Prime farmlands are not excessively erodible or saturated with water for a long period of time, and they either do not flood frequently or are protected from flooding.<sup>[2]</sup>

Southern New Castle County possesses some of the most productive agricultural land in the state. As a whole, Delaware historically contained the highest percentage of Class I and II soils of any state in the nation. Large expanses of farmland covered the landscape and coexisted with small agrarian towns and crossroads. Productivity was high and contributed significantly to the state's economy.

Much has changed in the intervening years, however. As the northern portion of the County built out and transportation improvements made access to Southern New Castle easier, the building industry availed itself of cheap land and began subdividing prime agricultural land. As of 2017, approximately 21 % of the County was farmland and the majority of it was in Southern New Castle County (2017 Census of Agriculture, USDA). Between 2002 and 2017, the County lost 5% of its remaining farmland. The loss of agricultural land is permanent and leads to fragmentation of farms and the loss of supporting farm industries and businesses. As farms become more fragmented and isolated, conflicts arise from increased traffic, complaints of odors, concerns over hours of operation, and a whole host of other issues arising from a suburbanizing landscape.

The NRCS maintains a soil map that designates prime farmland based on soil type. The 2018 update to the NRCS soil survey map indicates concentrations of prime farmland south of Middletown and in the undeveloped portion of the west wing. As of today, New Castle has 361 farms comprising 67,455 acres of land (2017 Census of Agriculture, USDA).

In light of all this, efforts to preserve the states' agricultural industries remain strong and significant preservation tools exist both at the state and county level. One of these tools is the Delaware Agricultural Lands Preservation Foundation (DALPF). Established in 1991, DALPF has two major components: agricultural preservation districts and agricultural conservation easements. Districts are created by a voluntary agreement to keep land in agricultural use for at least ten years. Lands are selected under a review and approval process that includes satisfying a scoring system standard. No payment is made to the landowner, but he/she benefits by exemption from real estate transfer, county, and school taxes, as well as protection against nuisance lawsuits.

To permanently preserve farmland, DALPF purchases development rights, imposing a permanent conservation easement on the land. The land must first be in an agricultural preservation district to be considered for a conservation easement. The purchase price is based on the appraised value of the development rights and selections are based on the highest discounts offered by property owners.

New Castle County established a volunteer farmland preservation program in 2003 to purchase easements that restrict subdivision of land, and in 2006 began a partnership with DALPF by donating county funds for farmland preservation on a one-to-one matching basis. The County currently holds

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<sup>[2]</sup> [https://www.nrcs.usda.gov/wps/portal/nrcs/detail/null/?cid=nrcs143\\_014052](https://www.nrcs.usda.gov/wps/portal/nrcs/detail/null/?cid=nrcs143_014052) 10/16/19



approximately 940 acres of agricultural easements and in partnership with DALPF another 13,000 acres have been eased. While the County program is no longer in effect, the County instituted a Land Preservation Task Force to examine ways to protect open space and agricultural land. Time will tell regarding what policies and programs are considered but opportunities to better protect farmland are being considered.

Of the more than 122,000 acres of land in the planning area about 34% is protected as open space, parkland or under agricultural easement. Open space has also been established in conjunction with the recordation of residential development plans and is classified as private (maintained by a maintenance corporation) or public (owned and maintained by New Castle County). Of historic significance is the County's rezoning of approximately 80,000 acres in Southern New Castle County to SR (Suburban Reserve) to encourage preservation. SR zoning is a low-density district permitting a minimum lot size of 5 acres for individual residential lots, or "open space" subdivisions requiring 60% open space. Sewer service is not available in this area and development activity development activity has subsequently been limited as a result.

In addition, although the County adopted a Transfer of Development Rights (TDR) program as part of the UDC, the program has not been widely used. Consequently, the County should consider reevaluating its TDR provisions to offer further incentives and bring the program in line with its growth management and sewer services planning. Doing so may well make the program more responsive to landowner interests and needs.

## **KEY POLICY FRAMEWORK**

### **Existing Protection**

The County has taken an active interest in protecting its natural resources for many years. While development pressures historically caused the conversion of much land in the northern part of the county, awareness of the need to protect remaining resources led to the development of enhanced environmental standards in the UDC. The protection of natural resources is achieved in three ways: 1) specific open space standards protect each natural resource by insuring that some portion of the resource area remains undisturbed, 2) a site capacity calculation regulates development of sites to that which is consistent with the level of protection, and 3) specific use, protection, and mitigation standards are provided for each resource.

Currently the County provides varying levels of protection to floodplains/floodways, wetlands, riparian buffers, drainageways, Water Resource Protection areas (WRPAs)(Cockeysville formation, Cockeysville formation drainage area, wellheads – classes A, B & C, and recharge areas), sinkholes, steep slopes (>25% and 15-25%), mature and young forests, and Critical Natural Areas (slope or geologic sites, rare species, forest, and other). Protection ranges from 100% for floodplains, wetlands, riparian buffers, sinkholes, class A wellheads, and rare species CNAs down to 20% for young forests.

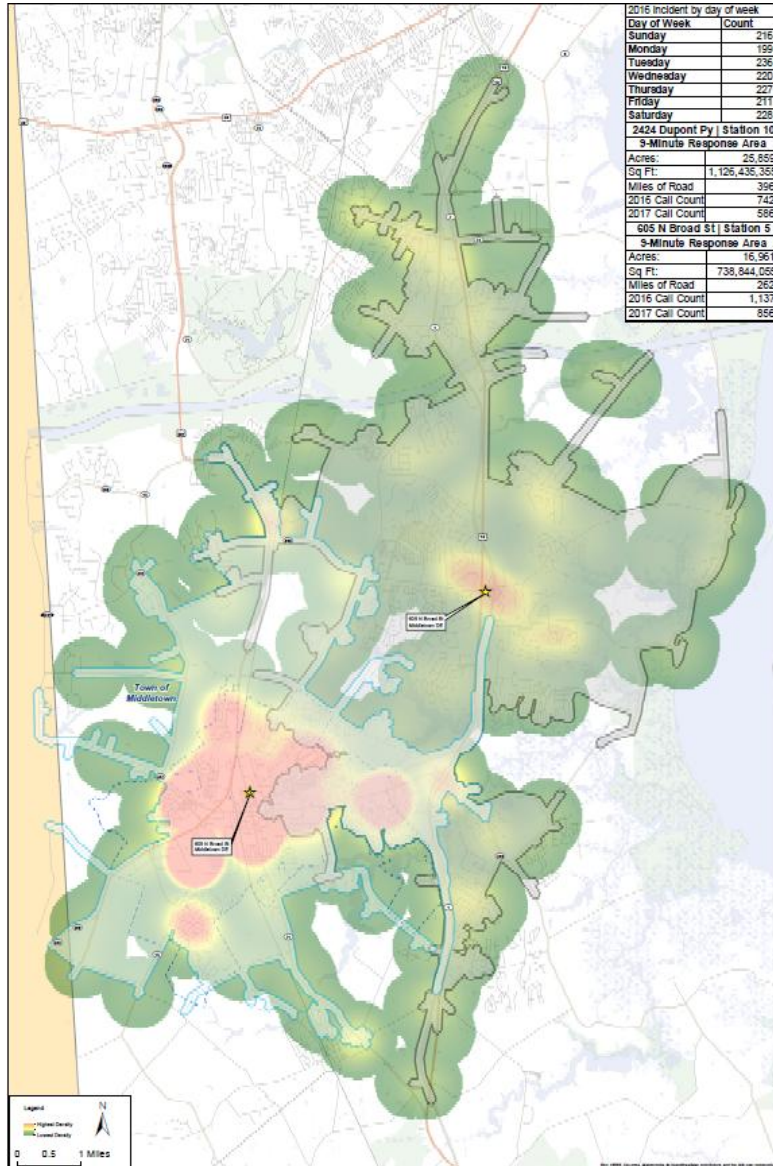
### **Conservation Mechanisms in Addition to Regulation**

The County has for many years invested dollars in the purchase of open spaces, developed parks and recreation facilities, purchased agricultural and open space easements, and taken dedication of lands preserved as part of the development process.

Clearly, regulation alone cannot achieve the levels of protection needed to support biodiversity, protect habitat, create recreational opportunities, preserve farmland, create interconnected open spaces, and provide for the general welfare of the residents of the County. Taken together however, regulatory approaches and different forms of land purchase and easement dedication can go a long way to making the County a desirable place to live, work, and recreate.

# Emergency Services

Figure 0-26: Proposed Paramedic 9-Minute Area Analysis, 2016 Incidents (Source: NCC 2016/2017 paramedic station coverage area analysis, Ron Holmes)



## Community Input Related to Scenarios

This section contains community comments related to the draft scenarios, as presented in October 2019. Summary results from prior engagement activities are available on the project website: <https://www.nccde.org/1729/Southern-NCC-Master-Plan>

### OCTOBER 2019

**GOAL 1. QUALITY OF LIFE/HEALTH: Residents of Southern New Castle County have access to the amenities and services that help them to maintain a high quality of life.**

Comments on Scenario 1	Comments on Scenario 2	Comments on Scenario 3	General Comments
<ul style="list-style-type: none"> <li>• [1 said preferred]</li> <li>• [6 said not preferred]</li> <li>• Not acceptable.</li> <li>• No pros, all cons: Cannot think of any good reason to choose this option. Development should not continue in this way. At the very least, the county should stop approving development that perpetuates the use of septic systems.</li> </ul>	<ul style="list-style-type: none"> <li>• [4 said preferred]</li> <li>• Corridor hub areas definite plus over Scenario 3.</li> <li>• Not acceptable.</li> <li>• Allows for areas for economic development along the major roads in this area. We need restaurants, gas station, and other every day services. To go to a restaurant we have to go to rt. 7 and 40 or Middletown. Middletown has had a monopoly on economic development. I like this scenario.</li> <li>• Best use of property.</li> <li>• Pros: Perhaps this would alleviate some traffic congestion in and around Middletown Proper.</li> <li>• Cons: It is too far north; the actual town of Middletown and most of southern NCC are not likely to share any cultural or economic benefits of this option. This option will appeal to rich white families who are clustering in this part of the county, but the somewhat remote location will prevent the majority of our socio-economically diverse town and county to take advantage of these enhancements.</li> <li>• The SNCC Master Plan should maximize walking/biking interconnectivity between existing/future parks and recreation areas, as well as walking/biking connections to large planned developments such as Whitehall and Bayberry.</li> </ul>	<ul style="list-style-type: none"> <li>• [2 said preferred]</li> <li>• How can we increase production/consumption of locally grown food? Would be good to increase street/park trees.</li> <li>• Access to walking communities is key.</li> <li>• OK, but 2 seems better.</li> <li>• Better than 1. Prefer 2.</li> <li>• OK.</li> <li>• Pros: I think this plan has the biggest potential to add value within town limits while at the same time helping to alleviate existing problems. Its central location means that more residents from southern NCC likely will benefit from these enhancements. I think this plan has the biggest potential to increase Middletown's economic impact in the county and in the state.</li> <li>• Cons: Not entirely a con, but this plan will require significant collaboration and coordination between the county and the town. Traffic congestion will be the biggest issue to untangle, but that needs attention anyway.</li> <li>• The SNCC Master Plan should maximize walking/biking interconnectivity between existing/future parks and recreation areas, as well as walking/biking connections to large planned developments such as Whitehall and Bayberry.</li> </ul>	<ul style="list-style-type: none"> <li>• Please disclose the cost of the new sewer (water treatment) plant that will be required in every scenario.</li> <li>• Locally-grown foods.</li> <li>• Agricultural marketing professional – county should hire one; see Maryland.</li> <li>• Maintain sewer in the core and maintain agricultural in SNCC.</li> <li>• How will existing parks be expanded to offer more amenities? (Price Park)</li> <li>• Additional impact fees just for schools</li> <li>• Request for new cell (phone) tower near 299/Route 1 (south of this intersection)</li> </ul>

**GOAL 2. ENVIRONMENT:** Environmental protection and farmland preservation are considered a priority in Southern New Castle County, and residents and visitors alike have access to trails, parks, and other natural spaces.

Comments on Scenario 1	Comments on Scenario 2	Comments on Scenario 3	General Comments
<ul style="list-style-type: none"> <li>• [5 said not preferred]</li> <li>• Too much traffic, with its congestion and pollution, already has damaged the quality of life.</li> </ul>	<ul style="list-style-type: none"> <li>• [6 said preferred]</li> <li>• 20-30 years in the future.</li> <li>• Maybe as long as natural areas, especially those around water (our most essential resource) are protected.</li> <li>• The changes to ordinance concerning septic systems are of major concern. While the increase in nitrogen in our waters are considered a major environmental problem, the changes in requiring septic systems in our rural developments are counter productive. While scenarios 2 and 3 are somewhat of an improvement, the problem is that your assumptions are based on historical trends not the current environment.</li> <li>• Pros: We need more permanently protected land. This is a good start.</li> <li>• Cons: This plan likely will increase car use across the county. Outside of the obvious land preservation aspect of this plan, I envision no real environmental improvements resulting from this particular scenario.</li> <li>• We support development in the east wing along SR 1/Rt. 13, where major regional highways can support such development. We agree, however, that development should be discouraged within those areas along the Delaware River and Rt. 9 corridor which are most susceptible to sea level rise and storm surges. This area is a wetlands resource that should be protected. We also support the work of the Land Preservation Task Force to develop strategies to protect and preserve farmland and ecologically sensitive areas, where appropriate and the funds exist to properly compensate landowners. Conservation easements and other mechanisms to place these lands in protected status while compensating landowners should be explored and implemented. Open space preservation by NCC need not all be for active recreation with associated acquisition and maintenance costs.</li> </ul>	<ul style="list-style-type: none"> <li>• [3 said preferred]</li> <li>• Figure out how to best incentivize farmers to preserve land – market for locally grown food?</li> <li>• More money is needed to incentivize farmland and open space preservation.</li> <li>• Start with this moratorium on annexation into Middletown.</li> <li>• Happy medium between the 2.</li> <li>• Perhaps best, especially if water (our most essential resource) and land (among the nation's most productive) are protected.</li> <li>• Too, an understanding needs to be abided: you cannot continue to grow, in a finite space with limited resources.</li> <li>• The changes to ordinance concerning septic systems are of major concern. While the increase in nitrogen in our waters are considered a major environmental problem, the changes in requiring septic systems in our rural developments are counter productive.</li> <li>• All pros, no cons: We need more permanently protected land. Centralizing enhancement projects within town limits is a great way to help with this.</li> <li>• We support development in the east wing along SR 1/Rt. 13, where major regional highways can support such development. We agree, however, that development should be discouraged within those areas along the Delaware River and Rt. 9 corridor which are most susceptible to sea level rise and storm surges. This area is a wetlands resource that should be protected. We also support the work of the Land Preservation Task Force to develop strategies to protect and preserve farmland and ecologically sensitive areas, where appropriate and the funds exist to properly compensate landowners. Conservation easements and other mechanisms to place these lands in protected status while compensating landowners should be explored and implemented. Open space preservation by NCC need not all be for active recreation with associated acquisition and maintenance costs.</li> </ul>	<ul style="list-style-type: none"> <li>• Please tie in (continued use as a farm) to the purchase of preservation.</li> <li>• How will already developed areas be protected from sea level rise?</li> <li>• How about focus of ag land preservation to SNCC?</li> <li>• Septic contributes to rise in nitrogen in water. How do you equate that to County Council mandating septic? NCC provides sewer.</li> </ul>

**GOAL 3. COMMUNITY CHARACTER:** Development and redevelopment in Southern New Castle County are compatible with, and enhance, the existing community character, including historic properties and design features, the scale of development, and presence of farmland and open space.

Comments on Scenario 1	Comments on Scenario 2	Comments on Scenario 3	General Comments
<ul style="list-style-type: none"> <li>• [5 said not preferred]</li> <li>• No pros, all cons: There is no community character with this plan.</li> </ul>	<ul style="list-style-type: none"> <li>• [7 said preferred]</li> <li>• While scenarios 2 and 3 are somewhat of an improvement, the problem is that your assumptions are based on historical trends not the current environment. Farmers are no longer in the position of being able to leaving farms to family members; families do not want to work the farms. They are now investigating selling them to developers. In Townsend, we are receiving inquiries about annexation from properties as far as 2 miles away; even from the east side of US 13.</li> <li>• Pros: It will bring a sense of community character to residents in the northernmost part of southern NCC.</li> <li>• Cons: In this scenario, community character is being attempted in only the northernmost part of greater Middletown, making it geographically out of reach for the majority of southern NCC. Community character will be completely fabricated in this scenario, as there is no existing character to build upon.</li> </ul>	<ul style="list-style-type: none"> <li>• [3 said preferred]</li> <li>• Concentrating developments in towns helps preserve character.</li> <li>• Best for farmland preservation. Create viable program to incentivize preservation over development.</li> <li>• No more Bayberrys and Whitehalls. Break them up into small villages and achieve the same objective.</li> <li>• While scenarios 2 and 3 are somewhat of an improvement, the problem is that your assumptions are based on historical trends not the current environment. Farmers are no longer in the position of being able to leaving farms to family members; families do not want to work the farms. They are now investigating selling them to developers. In Townsend, we are receiving inquiries about annexation from properties as far as 2 miles away; even from the east side of US 13.</li> <li>• Pros: This scenario allows the county to leverage existing infrastructure to build on the community character that already exists.</li> <li>• Cons: Existing infrastructure, including buildings, roads, traffic, etc., are already in need of overhaul.</li> <li>• We are strongly in favor of Scenario 3 as it supports this goal of building on the character of existing town centers through infill and preservation of historic properties where appropriate. Dense mixed-use development is appropriate to maintain and enhance the town centers of Middletown, Townsend and North Smyrna.</li> </ul>	<ul style="list-style-type: none"> <li>• You define growth core as being <u>only</u> north of Middletown. Townsend expects to more than double our current population by 2050.</li> <li>• Developers should be required to fund major portion of school expansion as part of approval process for new development.</li> <li>• Builders are not kicking in money for new schools.</li> <li>•</li> </ul>

**GOAL 4. TRANSPORTATION: People in Southern New Castle County can use a variety of transportation modes (car, public transportation, walking, and bicycling) to reach their destinations in a safe, comfortable, and convenient manner.**

Comments on Scenario 1	Comments on Scenario 2	Comments on Scenario 3	General Comments
<ul style="list-style-type: none"> <li>• [5 said not preferred]</li> <li>• Not acceptable.</li> <li>• No pros, all cons: Things will only get worse under this plan.</li> </ul>	<ul style="list-style-type: none"> <li>• [7 said preferred]</li> <li>• All of your scenarios are specifically developed for Middletown. Traffic patterns have not been addressed within the area around Townsend. SR 71, SR15, Railroad Ave. and Level Rd. traffic has increased dramatically due as people try to avoid the congestion of east/west in Middletown.</li> <li>• Pros: It may bring some transportation enhancements to residents in the northernmost part of southern NCC. It may also draw some congestion away from the town center, although I'm not exactly sure that would be the case.</li> <li>• Cons: I can't tell how this would help transportation for the town of Middletown or the majority of southern NCC.</li> </ul>	<ul style="list-style-type: none"> <li>• [2 said preferred]</li> <li>• Important to have safe bike paths/sidewalks and expanded transportation.</li> <li>• Improved walking and bike paths and public transportation are needed throughout. Also key.</li> <li>• Better connectivity between populations and attractions.</li> <li>• Need to seriously review and provide public transportation to 55 and older communities.</li> <li>• All of your scenarios are specifically developed for Middletown. Traffic patterns have not been addressed within the area around Townsend. SR 71, SR15, Railroad Ave. and Level Rd. traffic has increased dramatically due as people try to avoid the congestion of east/west in Middletown. No new traffic studies have been done in these areas.</li> <li>• Biking is a most efficient means of transport; it must be accommodated to have a livable community.</li> <li>• Pros: We cannot continue to expand without addressing the transportation problem in and immediately around the town limits. This plan would certainly help in that regard.</li> <li>• Cons: Middletown is a mess, and fixing it won't be easy. (But it most certainly will be a worthwhile investment of both effort and resources.)</li> <li>• I lived in Overland Park KS and the area had an excellent development scheme. There are large grids with 4 lane roads surrounding housing areas. Commercial establishments and bus routes were located on the perimeter that provided easy access with minimal driving. Most were a convenient walking distance which eliminated the need to drive. Walking and biking paths were intertwined with the housing and commercial areas.</li> <li>• Scenario 3 is the most supportive of densities needed for public transit and walkable/bikeable communities.</li> </ul>	<ul style="list-style-type: none"> <li>• Do not include a light rail line to our town. It doesn't drive economic growth.</li> <li>• SB SR 1 at 299 backs up to main line in PM.</li> <li>• 301 toll too expensive for daily commute.</li> <li>• Land Use allowed (9) 55+ communities as they age, won't be able to drive. <u>Need alternatives</u>. No services nearby. Need to drive now.</li> <li>• Not talking about infrastructure in Middletown. Concern about more density.</li> <li>• Congestion in Middletown 299. Can't expand 299 because of buildings.</li> <li>• Concerned about 301 spur just west of our development on Churchtown Road.</li> <li>• Traffic studies do not reflect current patterns around Townsend, SR 15, Level and Railroad Avenue.</li> <li>• Would be nice to have bike access to road on southern side of canal on improvement on south side road. I would suggest access near Whitehall.</li> <li>• Fieldsboro Road too narrow at 13 for bike path. 50 mph on Fieldsboro – <u>CURVE</u>. Older people &amp; children biking. Speed too fast.</li> <li>• No sidewalk on 299 near Christiana Care – gaps in sidewalk.</li> </ul>



**GOAL 5. ECONOMY/JOB:** Southern New Castle County has a strong and diversified economy.

Comments on Scenario 1	Comments on Scenario 2	Comments on Scenario 3	General Comments
<ul style="list-style-type: none"> <li>• [5 said not preferred]</li> <li>• Currently, the employment of new residents in Townsend work outside of New Castle County. Many work in Pennsylvania, New Jersey, or New York. They opt to live here rather than pay the higher taxes in those states.</li> <li>• No pros, all cons: Continued growth under this plan aggravates existing infrastructure problems. I see no potential for economic growth under this plan -- only economic drain.</li> </ul>	<ul style="list-style-type: none"> <li>• [6 said preferred]</li> <li>• Need to designate an area for LI and HI.</li> <li>• Currently, the employment of new residents in Townsend work outside of New Castle County. Many work in Pennsylvania, New Jersey, or New York. They opt to live here rather than pay the higher taxes in those states. You can't create jobs in an environment that does not support industry. As example, look at the loss of industry in Middletown and Delaware City. Hercules, Formosa Plastics, Occidental, and Valero are but a few. You cannot sustain economic growth relying on retail sales, chain restaurants and small stores.</li> <li>• No pros, all cons: Even with growth in this part of southern NCC, the Bayberry/Whitehall area will still be predominantly residential. I don't expect this will be a draw for businesses that have the potential to make a big impact on economy and employment. Even if there were a "business boom" resulting from growth in this area, it would be a long, long way to travel for residents of the majority of southern NCC.</li> </ul>	<ul style="list-style-type: none"> <li>• [2 said preferred]</li> <li>• More dense development will enable more quality retail/restaurants and better paying jobs.</li> <li>• Need LI and HI for manufacturing.</li> <li>• Currently, the employment of new residents in Townsend work outside of New Castle County. Many work in Pennsylvania, New Jersey, or New York. They opt to live here rather than pay the higher taxes in those states. You can't create jobs in an environment that does not support industry. As example, look at the loss of industry in Middletown and Delaware City. Hercules, Formosa Plastics, Occidental, and Valero are but a few. You cannot sustain economic growth relying on retail sales, chain restaurants and small stores.</li> <li>• Best for long term health...must always keep the long term in mind.</li> <li>• Pros: Businesses will be drawn to a "small town" that has its act together like a bigger city. This plan can do that for us.</li> <li>• Cons: A vision for the town must be made very clear and must be agreed upon. This takes real teamwork between the county and the town. It isn't impossible, but the county will have to stop approving every new development request, and the town will have to stop approving every fast-food and retail franchise that wants in. Basically, we all need to take a more holistic view of things and start being selective about what is being added.</li> <li>• We are supportive of the plan in Scenario 3 to focus policies on facilitating the expansion of Middletown as the job center for SNCC. More and higher wage jobs in Middletown will support small local businesses and reduce the number of commuters to Wilmington and Northern NCC.</li> </ul>	<ul style="list-style-type: none"> <li>• Look at providing a full hospital.</li> <li>• Jobs – only jobs are warehouse and retail jobs.</li> <li>• We have residents who live in New York and New Jersey.</li> <li>• Public safety a concern. What about police, paramedics, medical jobs?</li> </ul>

## GENERAL COMMENTS:

- I prefer Scenario 2 or 3 to best support the preservation of natural resources and sustainable practices with the county. I believe this will also increase quality of life across the board. I also think that NCC has potential as a market for jobs based around renewable energy, and policies supporting this would help achieve better quality of life, environment and economic objectives.
- I prefer Scenario 3 because we need denser development and more walkable and livable communities while preserving our previous farmlands, wetlands and natural areas. More funding on the County level to incentivize preservation is needed. More funding incentives for biking/pedestrian pathways and public transportation is also needed. We also should strongly disincentivize development where there is sea level rise and where there are wetlands.
- Need high speed rail to Wilmington/Philadelphia. Commuting north to Wilmington is a nightmare. 301 Bypass is great to Tybouts Corner, but northward is always a parking lot. Crashes every day. No wonder people return home to beat their kids.
- A large number commute northward. There is little opportunity for employment in Middletown outside of retail. Need a State services campus in MOT.
- Restrict/decline developments that propose the use of septic systems.
- Resolve transportation issues - there a need for another crossing of the canal or expansion of existing 896/301 crossing.
- There's need to expand the road network parallel to the canal/Rt. 301-Rt. 1.
- I like the direction you are going with Scenario #3. Keep up the good work. I would encourage you to keep adding to #3 following Smart Growth Principles. As the plan moves forward, please give attention to East-West corridors in Middletown (Lake and Green Street) and redundancy (capacity) between Middletown and I-95. I would also like to see lot of bike lanes and shared use paths.
- Connect sidewalks where disconnected/underdeveloped.
- Scenario 3: This is where the master plan should be - in my opinion. Will look at web site and try to provide more feedback. I find it hard to compare scenarios as you have already summed it up in the chart.
- The area continues to grow and expand; thus, I would like to see more emphasis on expanding the sewer system.
- We would like to see the proposed sewer areas in Scenarios 2 and 3 - become permanent sewer areas.
- We need walk paths along the street where Giant supermarket is. The kids walking to school are forced to walk across the ground full of mud and puddles. It makes no sense that the sidewalk goes for a while and suddenly it stops. Folks walk on dirt and mud on the way to school (on the side of Applebee's and Christiana Care).
- No scenario offers anything below Middletown.
- While scenarios 2 and 3 are somewhat of an improvement, the problem is that your assumptions are based on historical trends not the current environment. Farmers are no longer in the position of being able to leaving farms to family members; families do not want to work the farms. They are now investigating selling them to developers. In Townsend, we are receiving inquiries about annexation from properties as far as 2 miles away; even from the east side of US 13.
- Work with nature.
- Ensure protection of natural resources, esp. water, our most essential.

- Keep long term in mind.
- Abide the notion that you cannot grow indefinitely given a finite space (our county, our earth) and resources.
- Scenario 2 is the best.
- Convergent concepts:
- Environment + Community Character: Should consider the addition of community gardens, cottage communities, tiny house communities, community-integrated neighborhoods for our growing homeless population. All of these ideas would make a name for Middletown as a frontrunner in environmental stewardship and could improve the community character as well.
- ENVIRONMENT + TRANSPORTATION + ECONOMY/JOB: Adding a light rail system within MOT and from MOT to other places like UD, Christiana and Wilmington would take southern NCC to a whole new level in terms of economic potential and could make a name for Middletown as a future-focused Smalltown, USA.
- We do not want sewer and dense housing in the western corridor. Let it remain as it is. The rural feel we have here is why so many moved to this area with horse farms, fields and some breathing room. Please don't take that away, as there are few areas left like this to enjoy. It would be best to do sewer and dense development where it already exists such as the town of Middletown or the central corridor.
- If property owners in area where development is discouraged such as the southern area are to be expected to support the plan they are going to have to be compensated in some manner for the loss of development of their land.
- The plan does not include why people in the area moved down here. Most people were attached to the area because of the large lots and open spaces just like North Wilmington (Hockessin) not Pike Creek.
- In concept, The Committee of 100 supports limiting major planned developments to sewerred areas. We do not, however, support Ordinance 19-078 because we believe it is premature. Until the SNCC Master Plan is finalized and a determination made as to how this portion of the County should be developed, it is inappropriate to make any decisions as to how sewer and/or septic will proceed. Designation of future sewerred areas must be clearly defined for landowners through a transparent and predictable process. If the County is concerned that development on septic will proceed while the SNCC Master Plan is being finalized, it has the ability to extend the septic moratorium to coincide with the timing of the SNCC Master Plan process.
- Leave south of the canal alone! We don't want the congested, busy mess that is up north.

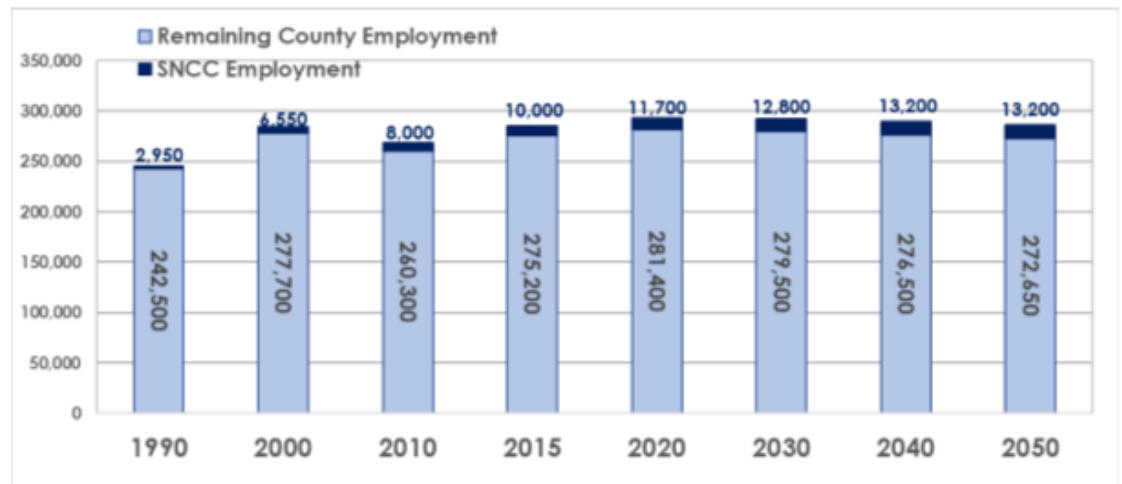
## Economic Development

Most southern New Castle County employment growth between 2005 to 2015 occurred in non-traded industries serving household growth (Table 0-10). Education (Primary K-12) remained in the top places by number of jobs and continues to remain steady in growth as educational institutions are added. Healthcare employment increased significantly, more than tripling its totals since 2005. There was, however, growth in the accommodation, manufacturing, arts and entertainment, and transportation industries over this period. These industries contribute to community wealth generation.

In determining where to locate a business, a chief criterion used by investors is the quality of the workforce. Educational attainment, industries where employed, and commuting patterns are factors considered. For the most part, southern New Castle County is well educated. One-third of southern New Castle County residents over the age of 25 have a bachelor's degree or higher. Southern New Castle County residents' educational attainment is not as high as the overall County, but higher than the State (Table 0-9).

	Delaware	New Castle County	Southern New Castle County
High School Degree	29.7%	28.3%	30.1%
Bachelor's Degree or Higher	31.6%	36.5%	33.2%

Table 0-9: Educational Attainment of Persons 25+ (Source: ESRI)



Sources: US Census, American Community Survey, Delaware Population Consortium, WILMAP CO

Figure 0-27: Share of Southern NCC Employment vs. Rest of New Castle County (1990-2050)

Industry	2005	2015	Change	
			#	%
Retail	972	1,854	882	91%
Health Care	241	1,044	803	333%
Accommodation	419	1,044	625	149%
Education	951	1,542	591	62%
Construction	856	910	54	6%
Professional/Business Services	535	872	337	63%
Manufacturing	586	792	206	35%
Other	290	439	149	51%
Other Services	160	386	226	141%
Transportation/Warehousing	260	345	85	33%
Arts, Entertainment, Recreation	107	246	139	130%
Wholesale	453	246	-207	-46%
Public Administration	106	207	101	95%
Total	5936	9,927	3,991	67%

Table 0-10: Jobs by Place of Employment, Southern NCC, 2005-2015 (Source: U.S. Census, County Business Patterns Zip Code Data 2005 and 2015; W-ZHA)

## EMPLOYMENT LOCATIONS

The disconnect between where people live and work has implications for transportation, traffic, and the environment, and was mentioned as a topic of major concern by many community members. Benefits attributed to a better jobs-housing balance are:

- Reduced driving and congestion
- Fewer air pollution emissions
- Lower costs to businesses and commuters
- Lower expenditures on facilities and services
- Greater family stability
- Higher quality of life

Middletown is the largest employment center in the planning area, with approximately 55% of the planning area's jobs located there (Figure 0-29).

Figure 0-28: Illustration of Jobs and Worker Flows In/Out of southern NCC (Source: Longitudinal Employment-Household Dynamics, US Census Bureau)

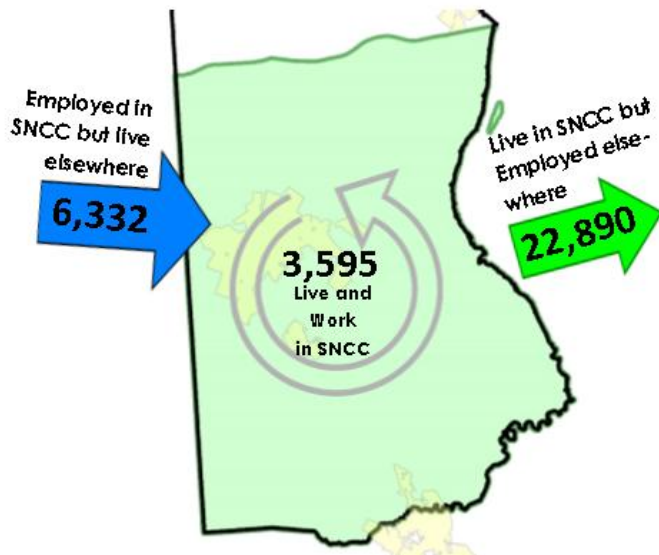
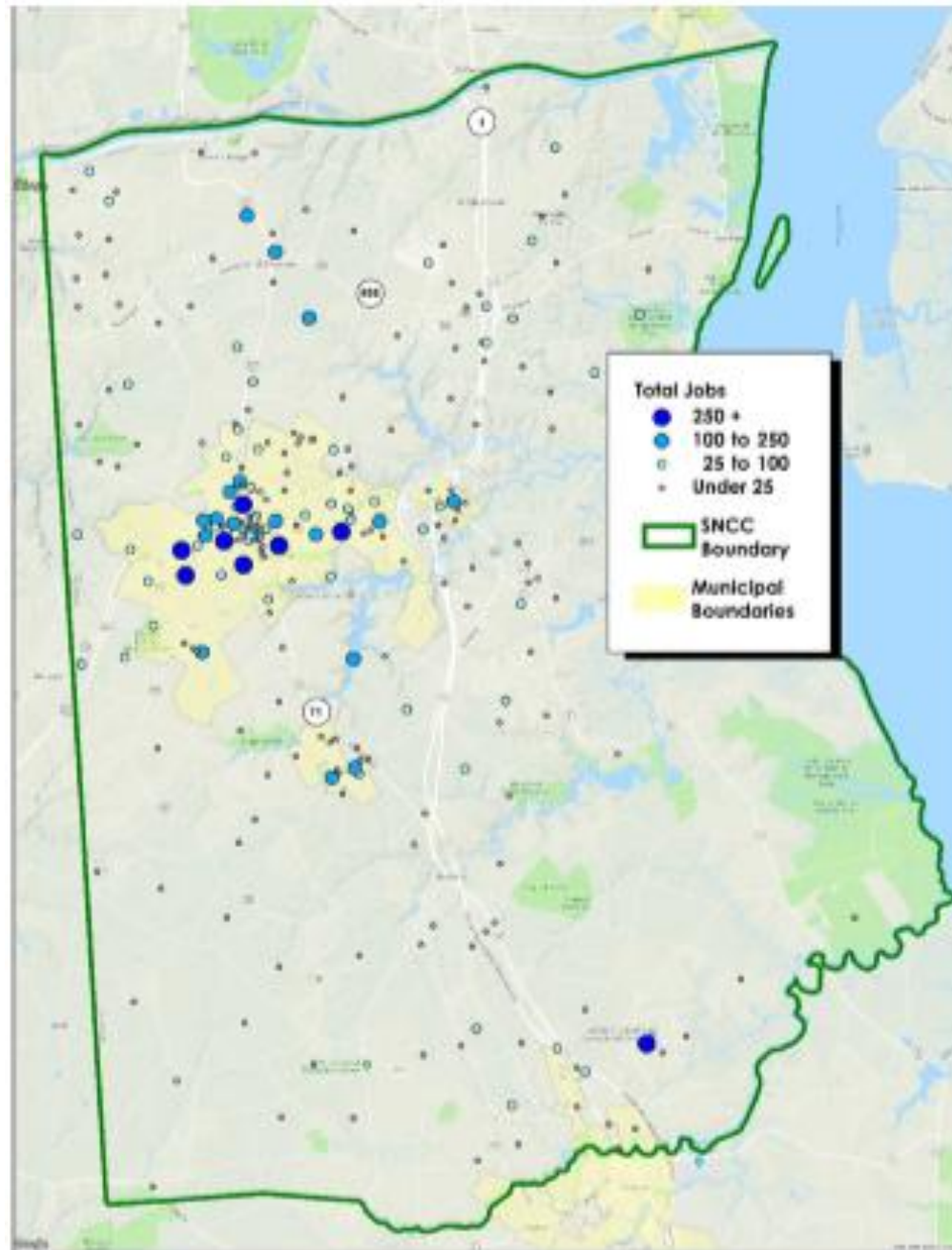


Figure 0-29: Employment Locations: 2015 (Source: Longitudinal Employment-Household Dynamics, US Census Bureau)



## RETAIL SALES

There is retail sales leakage occurring in southern New Castle County (Figure 0-30). Residents of southern New Castle County generally travel outside of the area to shop. There is considerable retail sales leakage among most store types, particularly motor vehicles and parts dealers. Sales outflow is not unusual for lower density communities. However, having convenient access to goods and services contributes to quality of life.

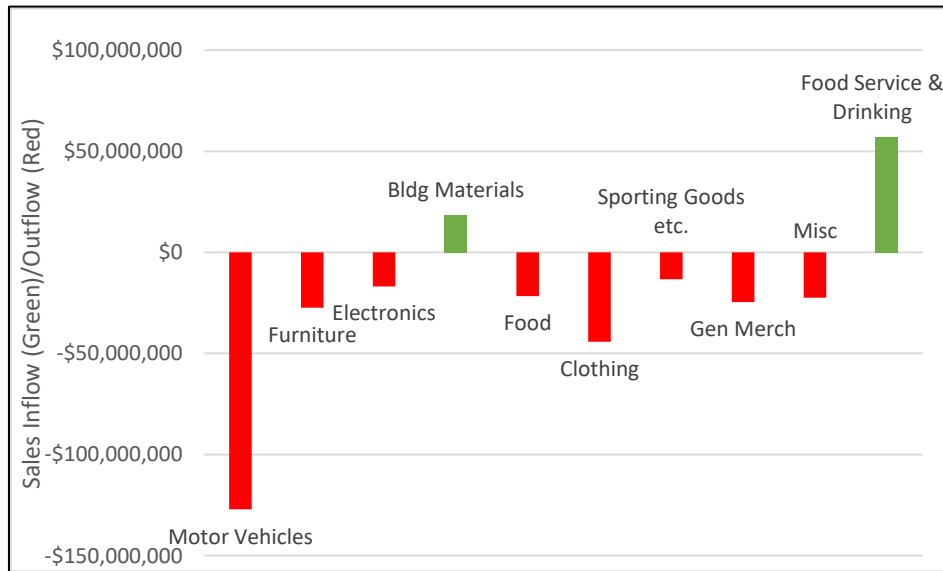


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