

Calvert County Comprehensive Plan



**October 2017
Draft**

Calvert County Comprehensive Plan

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CHAPTER I. EXECUTIVE SUMMARY

Calvert County's Goals

Calvert County has long held the dual goals of preserving the rural landscape and creating vibrant Town Centers and Villages. These two goals work together and mutually sustain each other. Supporting, encouraging, and directing growth away from the rural areas helps preserve the rural landscape and focuses development into Town Centers and Villages. Similarly, supporting, encouraging, and directing growth toward the Town Centers and Villages limits development within the rural areas and creates more activity and vibrancy within the Town Centers and Villages.

Preservation of the rural landscape has been a hallmark of Calvert County planning. In 1978, the county set a goal of preserving 20,000 acres of farm and forest land. In 1997, it achieved its 20,000-acre goal and doubled its goal to 40,000 acres. To date, nearly 30,000 acres have been preserved through the efforts of the state, county, land trusts, and private property owners.

Calvert County has been more successful in preserving farm and forest land than in creating vibrant Town Centers and Villages. While coming close to meeting the 2010 Comprehensive Plan goal of 35 percent of new households locating within or immediately around 1 mile of the Town Centers, Calvert County has not achieved the desired development patterns. One of the 2010 Comprehensive Plan's 10 Visions, a vision included since the adoption of the 1997 Comprehensive Plan, is for the Town Centers to be attractive, convenient, and interesting places to live, work, and shop. The implication of this vision is to focus growth in well-planned Town Centers instead of strip malls and business parks scattered throughout the county. However, many of the Calvert County's Town Centers and Villages lack a sense of place and are dominated by commercial strip development. Nearly 85 percent of Calvert County residential development is categorized as low or very-low density development. Most of the residential development has occurred outside the Town Centers and Villages.

An important focus of this plan update is to address policy actions Calvert County can take to direct development to the Town Centers and Villages and to encourage development that creates the vibrancy county residents are seeking. These policy actions include:

1. Expanding the boundaries for many of the Town Centers and Villages, and for Town Centers, better defining the growth areas adjacent to the Town Centers;
2. Using wastewater treatment facilities and other public infrastructure investments to attract and direct growth to appropriate locations within the Town Centers and Villages; and
3. Increasing the by-right development density in Town Centers.

Visions

The goal of the Comprehensive Plan is to maintain and/or improve the overall quality of life for all citizens of Calvert County by:

- Promoting sustainable development,
- Encouraging a stable and enduring economic base,
- Providing for safety, health, and education, and
- Preserving the natural, cultural, and historic assets of Calvert County.

The goal is expressed in a series of 10 visions.

1. Our landscape is dominated by forests and fields.
2. Our Town Centers are attractive, convenient, and interesting places to live, work and shop.
3. Our wetlands, streams, and forests and the Chesapeake Bay and Patuxent River support thriving plant and animal communities.
4. Our highways are safe with only moderate congestion and transit is readily available. Walking and bicycling are practical alternatives within and in close proximity of Town Centers.
5. We waste less, consume fewer natural resources, and properly dispose of waste.
6. Our communities are safe. We care for the well-being of each other.
7. Our children are well prepared for the future. We offer robust and diverse educational opportunities.
8. We are stewards of our cultural heritage.
9. We are building a strong local economy based on renewable resources, agriculture, seafood, high technology, retirement, recreation, and tourism.
10. Our government is efficient, open, and responsive to citizen needs and concerns.

Managing Residential Growth

Implementation of the previous Comprehensive Plan policies has successfully reduced the county’s growth rate for both population and households, which has continually decreased since its peak in the 1970’s. Over time, Calvert County, has gone from being the fastest growing county in Maryland to one of the slowest. The population growth rate is projected to continue to slow in the future (Table I-2 and Table I-3).

Table I-2 Population Increase and Growth Rate by Decade, 1930-2010

Total Population in Calvert County								
1930	1940	1950	1960	1970	1980	1990	2000	2010
9,528	10,484	12,100	15,826	20,682	34,638	51,372	74,563	88,737
Percent Change (By Decade)								
1930's	1940's	1950's	1960's	1970's	1980's	1990's	2000's	2010's
10.0%	15.4%	30.8%	30.7%	67.5%	48.3%	45.1%	19.0%	12.9% *

Source: Maryland Department of Planning

Table I-3 Projected Population and Growth Rate, 2020-2040

Population Projections for Calvert County		
2020	2030	2040
94,600	99,200	100,450
Percent change		
2010-2020	2020-2030	2030-2040
6.6%	4.9%	1.3%

Source: Maryland Department of Planning, August 2017

The slower growth in population translates into a reduced growth of households and demand for additional housing units as shown in Table I-4.

Table I-4 Project Households and Growth Rate 2020-2040

Household Projections for Calvert County		
2020	2030	2040
33,900	36,900	37,600
Percent change		
2010-2020	2020-2030	2030-2040
9.9%	9.0%	1.9%

Source: Maryland Department of Planning, August 2017

Future Land Use Plan

The Future Land Use Plan guides future development and forms the basis for updating the zoning ordinance revision. The plan establishes nine land use categories, and their locations are shown on Figure I-1. The future land use map and the updated zoning ordinance, which implements the map, are the foundation for the successful realization of Calvert County’s goals and visions.

Rural Areas

Farm and Forest – These rural areas are dominated by existing farms and forest with an average density of about one dwelling unit for every 20 acres. The use of Transferable Development Rights (TDRs) in the Farm and Forest areas is counter to the idea of preserving these areas.

Rural Residential – These are rural areas dominated by existing large-lot residential development, typically 3-10 acres in size, with an average lot size of approximately five acres. The category allows recognition of existing small-scale neighborhood convenience retail and service uses as well as essential public services. The use of TDRs in the Rural Residential areas is counter to the idea of directing growth to Town Centers and Villages.

Waterfront Communities – These existing, mature residential communities typically pre-date zoning and subdivision regulations with lot sizes of an acre or less. They are not planned for expansion. The use of TDRs in the Waterfront Communities is counter to the idea of directing growth to Town Centers and Villages.

Wetlands – These are larger concentrations of tidal wetlands as defined by state and federal regulations. These boundaries are based on current zoning (6/2017). Development is generally prohibited in these areas.

Growth Areas

Town Centers –Town Centers have a base density of three dwelling units per acres, which can be increased using TDRs to a density consistent with the approved Town Center master plan. These communities allow a wide variety of commercial and residential development. Future development is guided by a Town Center master plan. Each has nearby residential development, typically within a one-mile radius of the Town Center.

Villages – These places are designated as Town Centers in the 2010 Comprehensive Plan but have a lower intensity and smaller scale with a more limited variety of commercial and residential development. These locations are suitable for additional small-scale commercial development and various types of single family dwellings at a base permitted density of one dwelling unit per acre. Future development is guided by an adopted master plan.

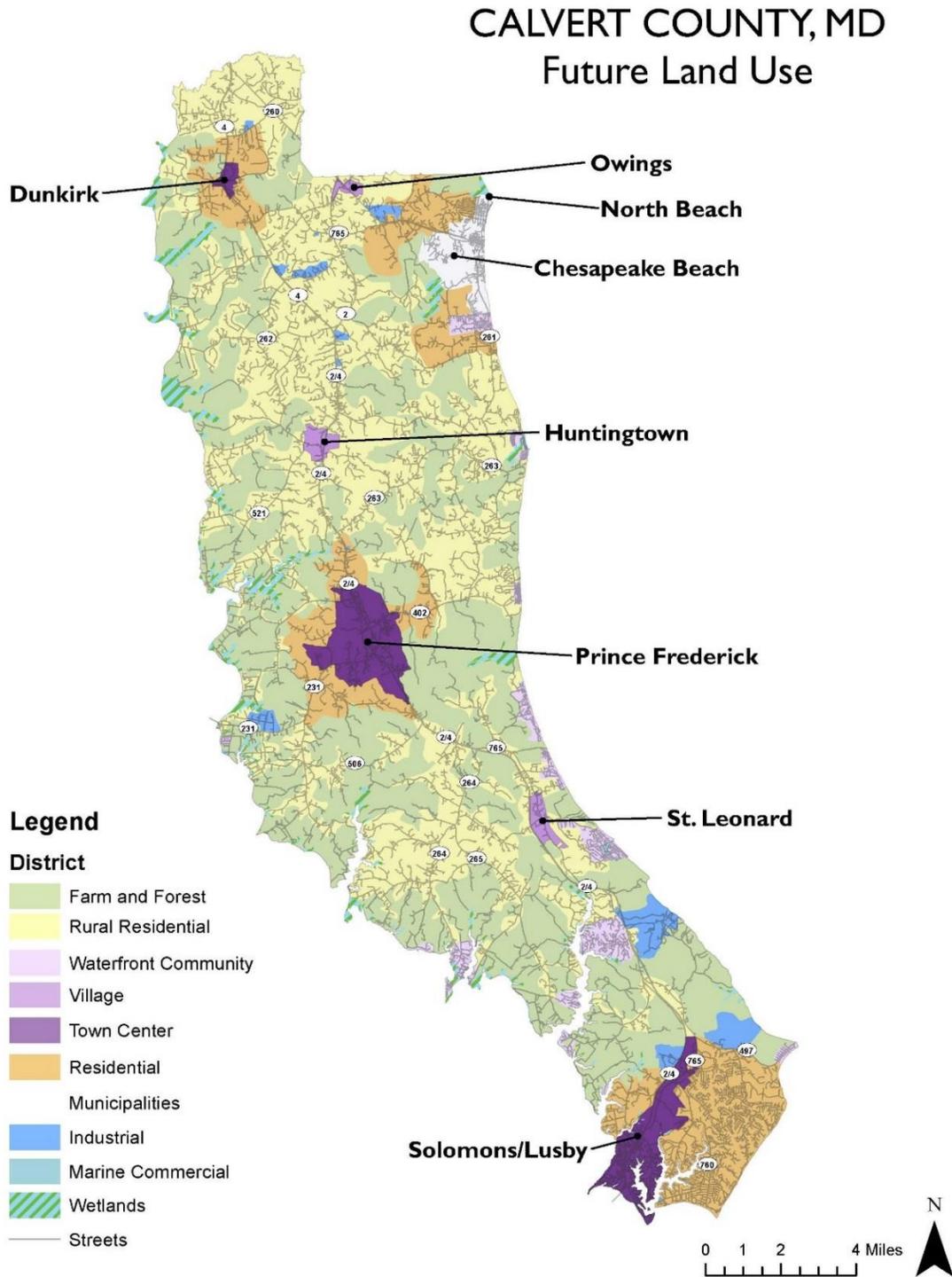
Residential – This designation applies to the mapped areas within approximately one mile of a Town Center. The base permitted density in these areas is one dwelling unit per acre with densities permitted to increase to four dwelling units per acre using TDRs and the provision of developer-funded public water and sewer.

Commercial and Industrial Areas

Industrial – These are manufacturing and employment centers that may include some larger-scale institutional and services uses.

Marine Commercial – These are small-scale, water-dependent uses like marinas and restaurants, providing convenience services to residents and visitors.

Figure I-1 Future Land Use Plan



Supportive Comprehensive Plan Elements

In addition to describing Calvert County's desired future land use, the Comprehensive Plan provides information, objectives, and action items associated with the different components or elements that make for a strong community. They are summarized below.

Environment and Natural Resources

The Environment and Natural Resources chapter covers a wide range of issues related to quality of life, sustainability, environmental protection, and resource conservation. It discusses the county's sensitive areas including wetlands, areas of Critical State Concern, and the Chesapeake Bay Critical Area and provides information on protection actions for these sensitive areas. Watershed management, forested preservation, air quality, mineral resources, hazard mitigation, and hazardous materials are also discussed. The emphasis of this chapter is to take a comprehensive approach to environmental planning and preservation that encourages the preservation, protection, and conservation of land-based natural resources and to mitigate Calvert County's natural and man-made hazards.

Housing

For many people, Calvert County represents achievement of the "American Dream." They own a home in a safe and attractive residential community. Almost half of Calvert County's homes were built in the last 30 years and more than 80 percent of occupied homes are owned by the occupants. However, this is not to say that there are not housing issues that must be addressed. Most of the current housing is unaffordable for low-income families and young adults. In addition, most of the county's housing stock is not designed to allow older residents to remain in their homes when they are no longer able care for large homes and lots or no longer able to live independently. Chapter 6 outlines the challenges facing Calvert County and its housing stock and makes recommendations for how to address these challenges moving forward.

Transportation

The transportation network in Calvert County is a function of the county's shape and topography. Because the peninsula is narrow and carved with stream valleys that run east-west, MD 2/4 is the only major highway that extends for the full length of the county, and at the headwaters of St. Leonard Creek, it is the only road linking the southern end of the county to the rest of the county. The emphasis of the transportation element is to provide a transportation system that moves people and goods to, from, and through the community in a way that is safe, convenient, economical, and consistent with the community's historic, scenic, and natural resources. The Comprehensive Plan focuses on recommendations and actions that address traffic delays, expand pedestrian amenities, improve bicycle facilities, and enhance transit service.

Economic Vitality

Calvert County is part of the larger Washington, D.C. metropolitan region and is impacted by the conditions across the region. In addition, Calvert competes with other parts of the greater Washington, D.C. area, Baltimore and Annapolis, and within Southern Maryland for jobs, workers, and residents. Historically, Calvert County's local economy relied on agriculture, aquaculture and recreation. Today, Calvert County's economy is based primarily upon its location within the Washington, D.C. metropolitan area. This chapter discusses the current economic conditions in Calvert County, identifies opportunities and economic sectors that Calvert County should pursue, and describes specific actions and initiatives needed to strengthen economic opportunity: direct business growth to Town Centers

and Villages; expand the Calvert County’s tourism industry; and expand the county’s education system to better provide general education, vocational, and technical training and retraining.

Water Resources

The Water Resources chapter focuses on potable water and sewerage service. The land use policies described throughout the Comprehensive Plan direct many of the county’s residential and commercial growth to the Town Centers and Villages and minimize future residential development more rural areas. Given these policies, the county must ensure that its water supply and wastewater systems in Town Centers meet current and future needs without jeopardizing the health of local waters, the Patuxent River, and the Chesapeake Bay. The plan recommends that this occur by 1) ensuring sufficient drinking water quality and quantity to accommodate future population growth, 2) ensure sufficient wastewater treatment capacity to support development in Town Centers served by public sewer systems, 3) protecting public health and water quality in areas outside the Town Centers; and 4) installing or enhancing stormwater management systems to reduce pollution in the Chesapeake Bay and Patuxent River.

Community Facilities

The Community Facilities chapter provides an overview of the public, private, and not-for-profit agencies and institutions that provide public services to county residents. As Calvert County plans for its future, it must assess the current state of the schools, parks, recreational facilities, emergency services, healthcare facilities, and solid waste disposal service available to residents and plan for future needs. This includes assessing future demand and the determining locations for future facilities. Many of the facilities discussed in this chapter have their own long-range plans and the recommendations contained within them are adopted by reference.

Implementation (To Be Added after the Public Meetings on the First Draft Plan)

The final Comprehensive Plan element is implementation. This section details the policies and actions needed to achieve the goals, visions, and objectives identified throughout the plan. The policies and actions are prioritized into short term (2018-2023), mid-term (2023-2028), and long-term (2028 and beyond).

CHAPTER 2. GOALS AND VISIONS

Background

Calvert County has long held the twin goals of preserving the rural landscape and creating vibrant Town Centers and Villages. Preserving the rural character has been a stated goal since Calvert County's first comprehensive plan, published in 1967. This goal has been carried forward in every subsequent comprehensive plan and has influenced nearly-all of Calvert County's land development policies.

The 1983 comprehensive plan was the first Calvert County plan to put forth the concept of Town Centers. This was in response to the seemingly contradictory mandates of "preserve rural character" and "promote economic development." The solution was to establish Town Centers, which would direct commercial activity and higher-density residential growth away from farms and environmentally-sensitive areas.

These two goals work together and mutually sustain each other. Supporting, encouraging, and directing growth away from the rural areas helps preserve the rural landscape and focuses development into Town Centers and Villages. Similarly, supporting, encouraging, and directing growth toward the Town Centers and Villages limits development within the rural areas and creates more activity and vibrancy within the Town Centers and Villages.

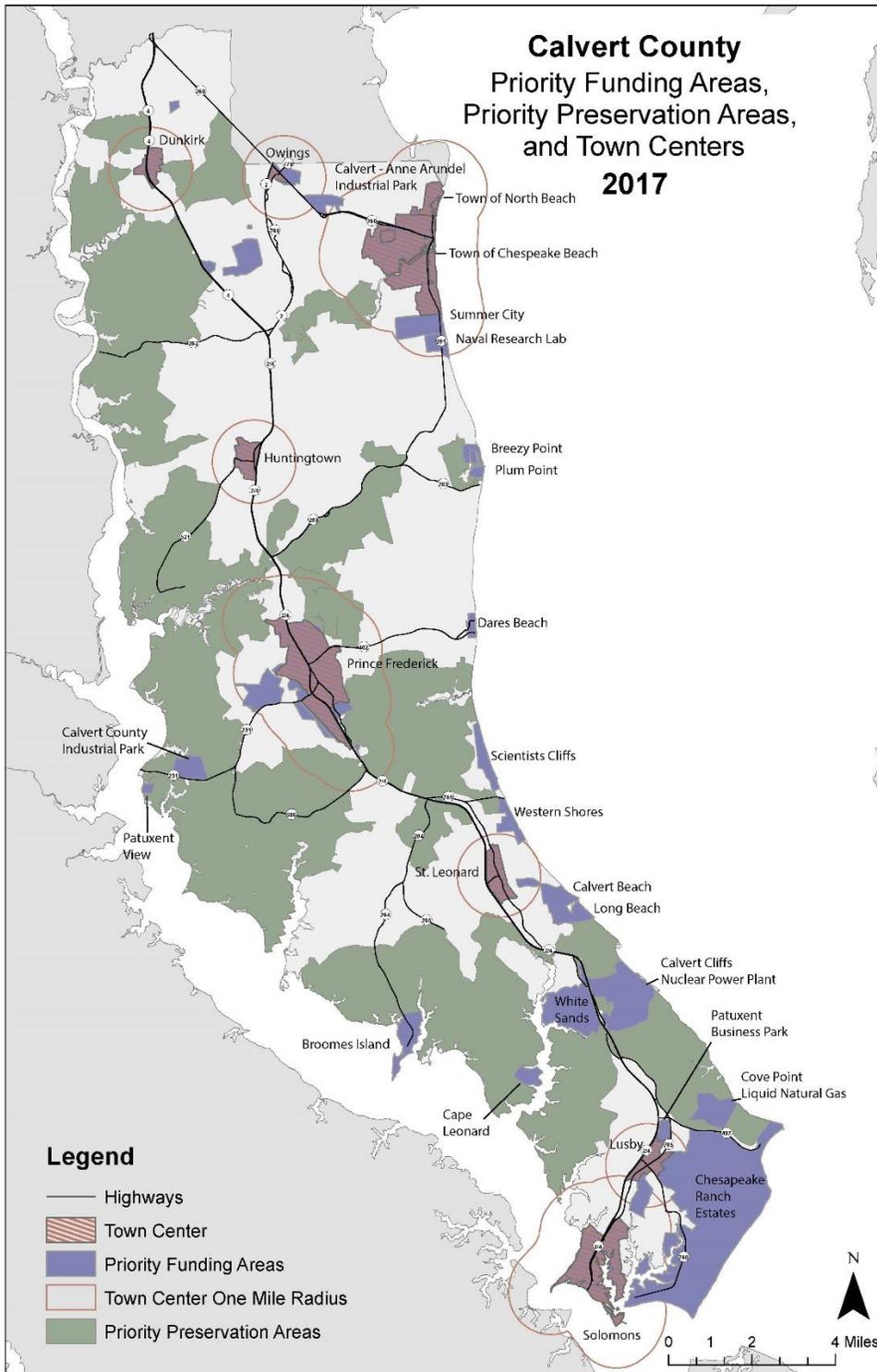
Preserve Rural Character and Direct Growth

Preservation of the rural landscape has been a hallmark of Calvert County planning. In 1978, the county set a goal of preserving 20,000 acres of farm and forest land. In 1997, it achieved its 20,000-acre goal and doubled its goal to 40,000 acres. To date, nearly 30,000 acres have preserved through the efforts of the state, county, land trusts, and private property owners.

Priority Preservation Areas and Priority Funding Areas

In 2009, the county and the Maryland Department of Planning agreed upon the Priority Preservation Areas (PPA) and Priority Funding Areas (PFA) shown in Figure 2-1. PFAs as defined by the Maryland Department of Planning are existing communities and places designated by local governments where they want state investment to support future growth.

Figure 2-1 Calvert County Priority Funding Areas and Priority Preservation Areas



Source: Calvert County Department of Planning & Zoning

The county uses several strategies to preserve agricultural and open space land. The amount in each program is shown in Table 2-1.

Table 2-1 Acres Preserved by Program

Land In Preservation	Acres
County Agricultural Preservation Program	21,839
Maryland Agricultural Land Preservation Foundation (MALPF)	4,542
Rural Legacy	1,636
Maryland Environmental Trust (MET)	713
Total	28,730

Source: Calvert County Department of Planning & Zoning, March, 2017

Create Vibrant Town Centers and Villages

Calvert County has been more successful in preserving farm and forest land than in creating vibrant Town Centers and Villages. Despite coming close to meeting the 2010 Comprehensive Plan goal of 35 percent of new households locating within or immediately around 1 mile of the Town Centers, Calvert County has not achieved the desired development patterns. Many of the Calvert County’s Town Centers and Villages lack a sense of place and are dominated by commercial strip development. Nearly 85 percent of Calvert County residential development is categorized as low or very-low density development. This implies that even the development that occurs within the Town Centers and Villages is not occurring at densities needed to create vibrancy.

An important focus of this plan update is to address policy actions Calvert County can take to direct development to the Town Centers and Villages and to encourage development that creates the vibrancy county residents are seeking. These policy actions include:

1. Better defining the Town Center and Village boundaries, and for Town Centers, better defining the growth areas adjacent to the Town Centers;
2. Using wastewater treatment facilities and other public infrastructure investments to attract and direct growth to appropriate locations within the Town Centers and Villages; and
3. Increasing the by-right development density in Town Centers.

Driving Forces and Trends

Calvert County’s future will be influenced by previous decisions and by outside forces it will not control. To successfully achieve its vision for the future, Calvert County will have to recognize the forces that are outside its influence and to implement strategies that make positive change in those areas within its control.

Recent and Projected Growth

Implementation of prior Comprehensive Plan’s policies has successfully reduced the county’s growth rate, which has continually decreased since its peak in the 1970’s. The growth rate is projected to continue to slow into the future (Table 2- and Table 2-). As a result, Calvert County has gone from being the fastest growing county in Maryland to one of the slowest.

Table 2-2 Calvert County Population Changes, 1930-2010

Total Population in Calvert County								
1930	1940	1950	1960	1970	1980	1990	2000	2010
9,528	10,484	12,100	15,826	20,682	34,638	51,372	74,563	88,737
Percent Change (By Decade)								
1930's	1940's	1950's	1960's	1970's	1980's	1990's	2000's	2010's
10.0%	15.4%	30.8%	30.7%	67.5%	48.3%	45.1%	19.0%	12.9% *

Source: Maryland Department of Planning, 2017

* Projected

Table 2-3 Calvert County Projected Population Growth, 2015-2040

Population Projections for Calvert County					
2015	2020	2025	2030	2035	2040
90,650	94,600	97,350	99,200	100,050	100,450
Projected Percent Change					
2010-2015	2015-2020	2020-2030		2030-2040	
2.2%*	4.4%	4.9%		1.2%	

Source: Maryland Department of Planning, 2017

* Actual percent change

Geography

One of the factors that has a strong influence on Calvert County’s development patterns is its location and geographic character. Calvert County is a peninsula bounded on the south and east by the Chesapeake Bay and along the west by the Patuxent River. The county is approximately 220 square miles, 35 miles long north to south, and varies in width between five and nine miles. The topography is variable and rugged with an upland plain running from the northwest to the southeast. The Chesapeake Bay edges are characterized by high cliffs that extend from the shoreline to heights of 120 to 130 feet. On the west, the higher areas in the middle of the county gradually slope toward the Patuxent River where the highest concentration of prime farmland is found. There are many creeks in Calvert County, and water generally drains towards the Chesapeake Bay (east) and Patuxent River (west) from the central elevation.

Calvert County’s topography has influenced where roads are located and how the road network has developed. MD 2/4 follows the county’s spine, and local roads accessing development and the

waterfront branch off from it. Because the peninsula is narrow and there are numerous streams and creeks traversing the county, it is difficult to provide multiple north/south routes. There is limited space for alternative routes, and the numerous stream crossings add complexity and cost to any project. Calvert County's transportation spine and many of its local roads have been in place for centuries and have shaped how development has and continues to occur in the county.

In addition, Calvert County's peninsula land form has shaped the location, type, and amount of development that has occurred. The north end of the county has seen a great deal of development because of its proximity to the Washington, DC region and the jobs to be found there. The southern end of the county is very connected to the water, and does not have significant connections to major employment centers. Much of the residential development in the southern end was originally built as summer homes and has been converted to year-round use.

Because Calvert County is a peninsula, it does not receive much through traffic. This is a benefit in terms of traffic volumes, however, it means that commercial businesses must rely on local demand rather than attracting additional demand from outside travelers. This impacts the amount and type of businesses that Calvert County can support.

Slowing Population Growth

An important trend Calvert County must contend with is slowing population growth. Beginning in 1988, the County took policy actions to consciously slow its rate. The county has been successful and has reduced its growth rate, which has continually decreased since its peak in the 1970s. The growth rate is projected to continue to slow into the future, and Calvert County has gone from being the fastest growing county in Maryland to one of the slowest. Because of the slow growth rate and the small number of new households and businesses that locate in Calvert County each year, the location of these developments is critically important. The county cannot create vibrant Town Centers and Villages without an influx of jobs and houses. Therefore, Calvert County must encourage, incentivize, and direct the limited development that does occur to the locations most desirable from the perspective of achieving its visions.

Changing Employment Characteristics

The changing nature of employment within the county, the influx of non-residents filling jobs within the county, and an increasing number of residents traveling long distances to their out-of-county jobs have an impact on the character of the county. Historically, Calvert County's local economy was based upon agriculture, tourism, construction, energy production, and local-serving retail and service businesses. Residents both lived and worked in Calvert County. Today, the largest employers in Calvert County are the Calvert County Public Schools, Calvert County Government, Calvert Memorial Hospital, Exelon/Calvert Cliffs Nuclear Power Plant, and the Arc of Southern Maryland. Most of the remaining top ten employers are service and retail businesses. The county is experiencing an influx of workers from neighboring jurisdictions commuting to the jobs inside Calvert County.

The population growth of the county over recent decades has brought new high-income residents. These higher incomes are linked to residents working at jobs outside Calvert County in the

Washington, DC, Annapolis, MD, and Baltimore, MD regions. Based upon median household income, Calvert County is one of the wealthiest counties in Maryland and the wealthiest in Southern Maryland.

The Comprehensive Plan discusses these driving forces and other trends in more detail and recommends strategies and actions to address them. These strategies and actions can help Calvert County maximize its opportunities and overcome the challenges facing the county.

Visions

The goal of the Comprehensive Plan is to maintain and/or improve the overall quality of life for all citizens of Calvert County by:

- Promoting sustainable development,**
- Encouraging a stable and enduring economic base,**
- Providing for safety, health, and education, and**
- Preserving the natural, cultural, and historic assets of Calvert County.**

The goal is expressed in a series of 10 visions.

1. Our landscape is dominated by forests and fields.
2. Our Town Centers are attractive, convenient, and interesting places to live, work and shop.
3. Our wetlands, streams, and forests and the Chesapeake Bay and Patuxent River support thriving plant and animal communities.
4. Our highways are safe with only moderate congestion and transit is readily available. Walking and bicycling are practical alternatives within and in close proximity of Town Centers.
5. We waste less, consume fewer natural resources, and properly dispose of waste.
6. Our communities are safe. We care for the well-being of each other.
7. Our children are well prepared for the future. We offer robust and diverse educational opportunities.
8. We are stewards of our cultural heritage.
9. We are building a strong local economy based on renewable resources, agriculture, seafood, high technology, retirement, recreation, and tourism.
10. Our government is efficient, open, and responsive to citizen needs and concerns.

CHAPTER 3. KEY ISSUES

Public Outreach

To learn about residents' concerns about Calvert County's future and to gather insights into the issues that are important to them, four Issue Identification workshops were held in 2016. Over 210 people attended the four workshops, which were held in various locations throughout the county.

The feedback heard at the workshops more specifically defined five key issues that guided the update to the Comprehensive Plan:

- Preserving Rural Character and Directing Growth to Existing Settlements
- Strengthening Economic Vitality and Tourism
- Supporting Options in Community Character
- Providing an Efficient and Multi-modal Transportation System
- Fostering Communities with Multi-Generational Opportunities

After the key issues were defined, the Department of Planning & Zoning held a series of five workshops, each devoted to one of the key issues. Prior to each workshop, a paper providing background on the issue and offering options for strategies to address the issue was made available on the county's website and provided to meeting participants. Reactions were collected through a series of small group discussions and online surveys. A summary of the results from the workshops was provided to the Planning Commission for its consideration.

Key Issues

Preserving Rural Character and Directing Growth to Existing Settlements: "Make it easier for people to build what the county wants, where it wants it."

While there are mixed feelings about the amount of new residential and commercial development in the county, there is near universal consensus that the bulk of growth should take place in designated areas, specifically, the Town Centers. To support that effort, the county should provide incentives and advantages for developers seeking to locate new development in designated areas. Generally, the Transferable Development Rights program and the current array of county policies are not perceived as successfully directing growth into designated areas and protecting the rural areas from increased residential development. Many comments on preserving the county's rural character discuss how to attract development into the Town Centers.

Strengthening Economic Vitality

Many of the county's perceived opportunities for economic stability and job growth include tourism and special events related to the county's agricultural businesses and waterfront location. The county's agricultural heritage and proximity to the waters of both the Patuxent River and the Chesapeake Bay are the backbone of the resource and energy-based industries. A strong and vibrant agricultural economy, including agri-tourism, new crops, and new uses for underdeveloped open space are essential

to retaining the rural character of the county. Other topics raised in the discussions included providing improved infrastructure of all types (roads, water, sewer, and communications).

Supporting Options in Community Character

While there is considerable support for directing growth into the Town Centers, there remains much concern that not all developed places in the county are or should be the same. There is a general sense that a single category of “Town Center” may not be sufficient to address the various intensities and types development at key locations in the county.

Providing an Efficient and Multi-modal Transportation System

Concerns about traffic delays, pedestrian amenities, bicycle facilities, and transit service pervade discussions of the county’s condition and future. Calvert County is surrounded on three sides by water. MD 2/4 is the major highway joining the northern and southern ends of the county. There is only one highway crossing to the west into Charles County and one to the south into St. Mary’s County. There are no highway connections to the east. Calvert’s geography limits accessibility to the county and presents challenges to the creation of a robust internal transportation network.

Fostering Vibrant, Walkable Communities with Multi-Generational Opportunities

The Town Centers in the 2010 Comprehensive Plan are the designated areas for most future growth and development. These centers are envisioned as walkable, mixed-use communities with a range of housing and business types.

The existing development patterns within the Town Centers are somewhat different from the vision, and achieving walkable, bike-able neighborhoods has proven elusive. Even within the Town Centers, the housing stock is predominately single-family on large lots, not necessarily suited to the financial and lifestyle choices of many younger and older adults. Incomplete sidewalk networks and limited safe locations for bicycling make automobiles more attractive than other travel modes. Many commercial areas look more like strip centers than mixed use, pedestrian-friendly communities. These circumstances indicate that more attention should be paid to the forces that attract the development to the designated growth areas and to the regulations that create attractive environments.

CHAPTER 4. LAND USE

Vision

Our landscape is dominated by forests and fields.

Our Town Centers are attractive, convenient, and interesting places to live, work and shop.

We are stewards of our cultural heritage.

Goals

Goal 1: Preserve the rural character of the county, its prime farmland, contiguous forests, historic resources, and environmentally sensitive areas.

Goal 2: Use water and sewer policies to direct growth consistent with land use policies.

Goal 3: Develop Town Centers and Villages as attractive, convenient, and interesting places to live, work, and shop.

Goal 4: Direct commercial and industrial uses to appropriate locations; provide necessary infrastructure.

State Vision

This chapter supports the Maryland State Visions related to:

Growth Areas. Growth is concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers.

Community Design. Compact, mixed-use, walkable design consistent with existing community character and located near available or planned transit options is encouraged to ensure efficient use of land and transportation resources and preservation and enhancement of natural systems, open spaces, recreational areas, and historical, cultural, and archeological resources.

Resource conservation. Waterways, forests, agricultural areas, open space, natural systems, and scenic areas are conserved.

Stewardship. Government, business entities, and residents are responsible for the creation of sustainable communities by collaborating to balance efficient growth with resource protection.

Related County Plans (incorporated by reference)

Master Plans – Individual master plans for the Town Centers and Villages.

Water & Sewerage Plan, 2014 – A framework for County water supply and sewerage disposal.

Background

Calvert County enjoys a unique and enviable position in the Washington Metropolitan area. The county has retained its rural nature and natural amenities while having available urban offerings within an hour's travel. One of the primary reasons for developing the Town Center concept in 1983 was to avoid "strip commercial development" along Calvert County's highways. This type of development contributes to traffic congestion, increases the potential for highway traffic accidents, reduces the drawing power of commercial uses by preventing them from benefiting from proximity to other commercial uses, reduces the ability of government to provide needed infrastructure, and detracts from the visual beauty of the countryside.

Access to the urbanized areas, however, works both ways and pressures for urban development in Calvert County may be expected to grow in the future. This Comprehensive Plan guides the character, location, and rate of development so that the nature and character of the county is preserved for future generations.

This chapter concerns both the natural and man-made land use patterns which have evolved in the county over time. Calvert County has worked to preserve its rural character through a combination of strategies intended to preserve agricultural, forest, and sensitive lands and to direct growth to suitable locations, promoting economic growth, and practicing stewardship of the Chesapeake Bay.

Existing Policies

Land Preservation

Beginning with the first Calvert County Comprehensive Plan, adopted in 1967, one of the county's primary goals has been the preservation of its rural character. Calvert County's heritage of family farms, tobacco barns, waterfront communities, and its peace and quiet are elements that define Calvert County's rural landscape and character. "Areas like Calvert County that lie at the outer edges of metropolitan areas should be maintained as natural resource protection areas, farming regions, and vacation/recreation/retirement areas"¹.

By the late 1970's, Calvert County recognized that while large lot zoning effectively reduced the number of households located within rural areas, it destroyed prime farm and forest land by taking it out of production permanently. Calvert County adopted the first Transferable Development Rights (TDR) program in the state in 1978. In 1978, the Agricultural Preservation Advisory Board set a goal of preserving 20,000 acres. In 1997, Calvert County celebrated the enrollment of 20,000 acres of prime farm and forestland in county and state land preservation programs. A goal to preserve an additional 20,000 acres was adopted that year.

In 2010, the county designated Priority Preservation Areas, by amending the 2004 Calvert County Comprehensive Plan. Adopting Priority Preservation Areas was required for the county to remain

¹ 2010 Calvert County Comprehensive Plan, Page 2.

certified under Maryland’s Agricultural Certification Program. The plan included the action to “Reserve the Farm and Forest District (Priority Preservation Area) for farming and natural resource-related uses and direct residential growth away from these areas.”²

The Maryland Agricultural and Preservation Foundation (MALPF) purchases agricultural preservation easements that will restrict development on prime farmland and woodland. As of 2016, Calvert County had acquired 35 easements under the program for a total of 4,715 acres.

Maryland’s Rural Legacy Program provides funding to preserve large, contiguous tracts of land and to enhance natural resources, agricultural, forestry and environmental protection while supporting a sustainable land base for natural resource based industries. Calvert County actively participates in the Maryland Rural Legacy Program.

The Maryland Environmental Trust (MET) works with landowners, local communities, and citizen land trusts to protect Maryland’s most treasured landscapes and natural resources as a legacy for future generations by providing direct assistance, information and innovative tools to ensure the ongoing stewardship and public concern for the natural, historic, and scenic resources of the state.³

There are three mechanisms for preserving properties in the county agricultural preservation program: Transferable Development Rights (TDRs), Purchase and Retirement (PAR), and Leveraging and Retirement (LAR). They are described below.

There are additional private programs for the preservation of open space including land trusts such as the American Chestnut Land Trust that also provide long-term protection of undeveloped land.

Almost 30,000 acres of land in Calvert County have been preserved though the combined efforts of state and local governments and land trusts, as shown in Table 4-1.

Table 4-1. Preserved Land

Land in Preservation	Acres
County Agricultural Preservation Program	21,839
Maryland Agricultural Land Preservation Foundation (MALPF)	4,715
Rural Legacy	1,636
Maryland Environmental Trust (MET)	713
Total	28,903

Transferable Development Rights Program and Forest Conservation TDRs

Calvert County adopted the first Transferable Development Rights (TDR) program in the state in 1978. The county does not “acquire” easements but requires that covenants be recorded prior to the initial sale of developments rights. To begin the TDR process, property owners voluntarily apply for

² 2010 Calvert County Comprehensive Plan, Action 1-4, Page 6

³ Maryland Environmental Trust Homepage, <http://dnr.maryland.gov/met/Pages/default.aspx>, accessed 10-11-2017

Agricultural Preservation District (APD) designation. The designation remains in effect for a minimum of five years. Once the district is established, the owner may petition for the certification development rights. Once certified, the TDRs can be sold to another party and transferred to a receiving area to increase the number of residential lots/units or to satisfy forest conservation requirements via a “forest” TDR. Owners of parcels of land enrolled in districts from which no development options have been conveyed may withdraw their land after five or more years by giving a one-month notice of such intent.

The Calvert County Department of Planning & Zoning estimates that there are approximately 9,500 TDRs currently certified and available for purchase and approximately another 3,000 TDRs that could be certified in APDs. In 2013, the county placed a moratorium on the creation of new APDs.

The market for TDRs has varied over time. Between 1978 and 2013, 14,442 TDRs were sold. In 2013 a Calvert County Planning & Zoning review of the county’s TDR program concluded that TDR sales had averaged between 500 and 600 per year but that the Great Recession had a profound impact on the use of TDRs and “total sales went from 716 in 2003 to 72 in 2012....”⁴ The report recommended that the county purchase and retire about 200 TDRs per year while encouraging developer usage of approximately 300 TDRs per year. By 2015, sales had rebounded, and 647 TDRs were sold for development.

Zoning ordinance amendments adopted in 2015 modified the TDR requirements for various unit types locating in the Prince Frederick, Lusby, and Solomons Town Centers, which have public water and sewer service. The changes reduced the number of TDRs required to construct additional units above the permitted base density⁵. Five TDRs are needed for each additional residential lot or dwelling unit in most areas of the county. In the Prince Frederick, Lusby, and Solomons Town Centers, three TDRs are required for each additional single family dwellings on lots that average 10,000 square feet or less, two TDRs for each additional attached dwelling, and one TDR for each additional apartment unit. The changes are intended to encourage residential development within the Town Centers and reinvigorate the market for TDRs.

Purchase and Retirement (PAR) Program

Calvert County created a Purchase and Retirement (PAR) Fund. Its purpose is to purchase and permanently remove (“retire”) development rights from the transferable development rights market. The development rights are retired rather than sold to transfer development elsewhere. Funding for the purchase of development rights has come from the agricultural land transfer tax, the recordation tax, local government funds, and matching funds from the Southern Maryland Agricultural Development Commission, and the Tobacco Buyout Fund. Owners may apply through PAR to sell a limited number of development rights from land in an Agricultural Preservation District. Owners of any APD from which no development rights have been sold to others may apply to sell additional development rights.

⁴ *Proposal to Improve the Calvert County Land Preservation Program, 2013*

⁵ Base density (conventional density) is the number of permitted units without use of TDRs.

Between 1993 and 2016, the county has purchased and retired 2,682 development rights through PAR at a total cost of \$10.8 million. The most recent data available is for 2016 when 303 development rights were purchased at a cost of \$1,136,250.

Leveraging and Retirement (LAR) Program

The county also has a Leveraging and Retirement (LAR) Fund. The Leveraging Program is similar to the PAR Fund in that the Board of County Commissioners buys development rights from APD owners and permanently retires the development rights. The primary differences between the two programs include the amount of development rights that may be sold and the method of payment. The number of development rights that may be sold is not limited. The owner receives annual tax-free interest payments and a lump sum payment constituting the principal at the end of a 10, 15, or 20-year term. An installment purchase agreement is signed between the county and the seller. Since it began in 1999, the county has purchased and retired 2,597 development rights through the LAR Program.

Priority Funding Areas

Maryland's Priority Funding Areas (PFAs) are targeted existing communities where local governments desire the State to invest and support future growth. Growth-related projects include most state programs that encourage growth and development such as highways, sewer and water construction, economic development assistance and state leases or construction of new office facilities. Funding for projects in municipalities, other existing communities, industrial areas and planned growth areas designated by counties as PFAs receive priority for state funding over projects located outside of PFAs.

Critical Area Protection Program

The Critical Area Act addressed the impacts of land development on habitat and aquatic resources. The Critical Area is all land within 1,000 feet of the Mean High Water Line of tidal waters or the landward edge of tidal wetlands connected to the Chesapeake Bay and Patuxent River. The intent of the Act is to achieve the following goals:

- Minimize adverse impacts on water quality that result from pollutants that are discharged from structures or conveyances or that have run off from surrounding lands;
- Conserve fish, wildlife, and plant habitat in the Critical Area; and
- Establish land use policies for development in the Critical Area which accommodate growth and address the fact that, even if pollution is controlled, the number, movement, and activities of persons in the Critical Area can create adverse environmental impacts.

Maryland's Critical Area Program, created in 1984, involves cooperative implementation efforts between the state and local governments. Calvert County has adopted a specific chapter of the zoning ordinance related to Critical Area implementation. The Critical Area law requires local governments to review their Critical Area programs comprehensively every six years.

Agricultural Preservation and Sustainable Growth Act of 2010: Growth Tier Map

In 2012, the State of Maryland adopted the Sustainable Growth and Agricultural Preservation Act (the "Act") to limit creation of new residential subdivisions served by on-site sewage disposal systems. The

Act, also known as the "Septics Law," was adopted to meet U.S. Environmental Protection Agency limits on Chesapeake Bay nutrient and sediment pollution. The Act establishes four tiers to identify the type and intensity of residential subdivision that may occur (minor or major), and the type of sewage disposal system to serve them. (Figure 4-1)

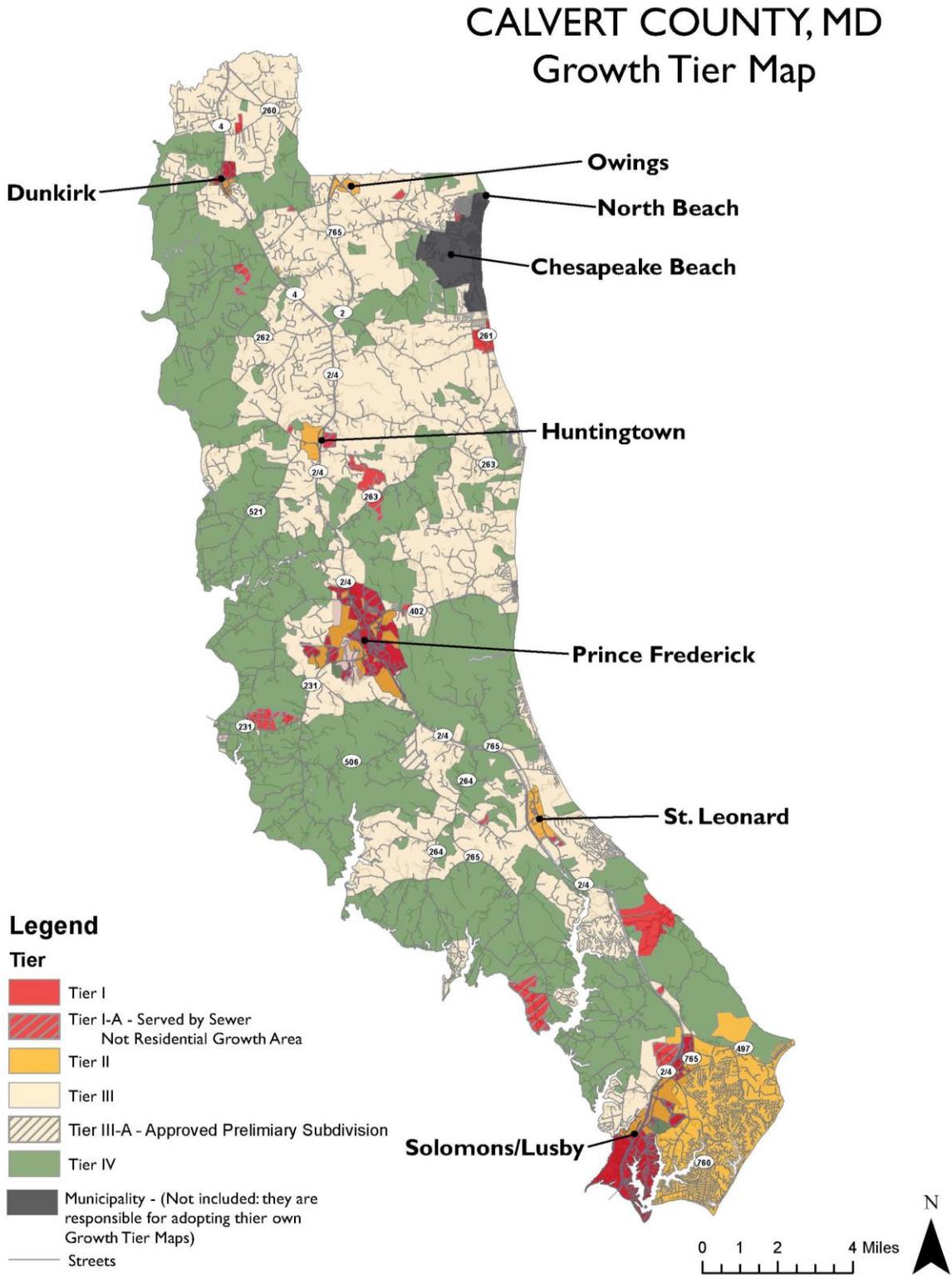
Tier I: Areas already served by public sewerage systems and mapped as a locally designated growth area, or is in a municipality that is a Priority Funding Area served by public sewerage systems. In Tier I, a residential subdivision plat may not be approved unless all lots are to be served by public sewer.

Tier II: Areas proposed to be served by public sewerage systems or mapped as locally designated growth areas.

Tier III: Areas planned and zoned for large lot or rural development. They are not planned for sewerage service and are not dominated by agricultural or forest land. They are also not planned or zoned for land, agricultural, or resource protection, preservation, or conservation.

Tier IV: Areas not planned for sewerage service and which are planned or zoned for land, agricultural, or resource protection, preservation or conservation; areas dominated by agricultural lands, forest lands or other natural areas; Rural Legacy Areas, Priority Preservation Areas or areas subject to covenants, restrictions, conditions or conservation easements for the benefit of, or held by a state agency or a local jurisdiction for the purpose of conserving natural resources or agricultural land.

Figure 4-1: Growth Tier Map

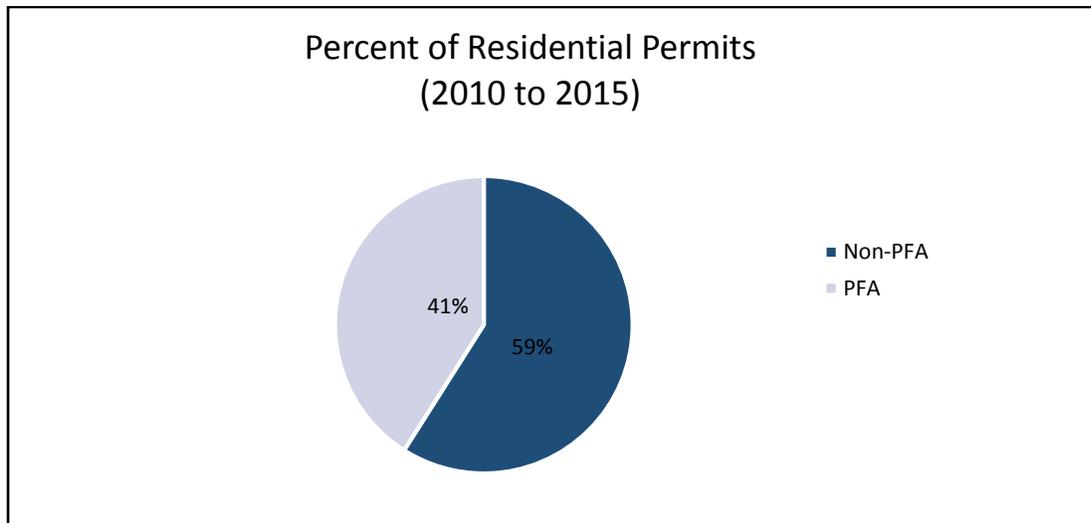


Existing Land Use

In general, residential development occurs along the major roads and corridors rather than clustered in and around Town Centers and Villages. Much of Calvert County’s residential development is located north of Prince Frederick, and approximately 20 percent of existing residential land uses are concentrated within one-mile of the Town Centers and Villages. Residential development in the south is more concentrated whereas residential development in the north is more dispersed. In addition, 85 percent of residential development is categorized as low or very low density with lots sizes at least half an acre or larger.

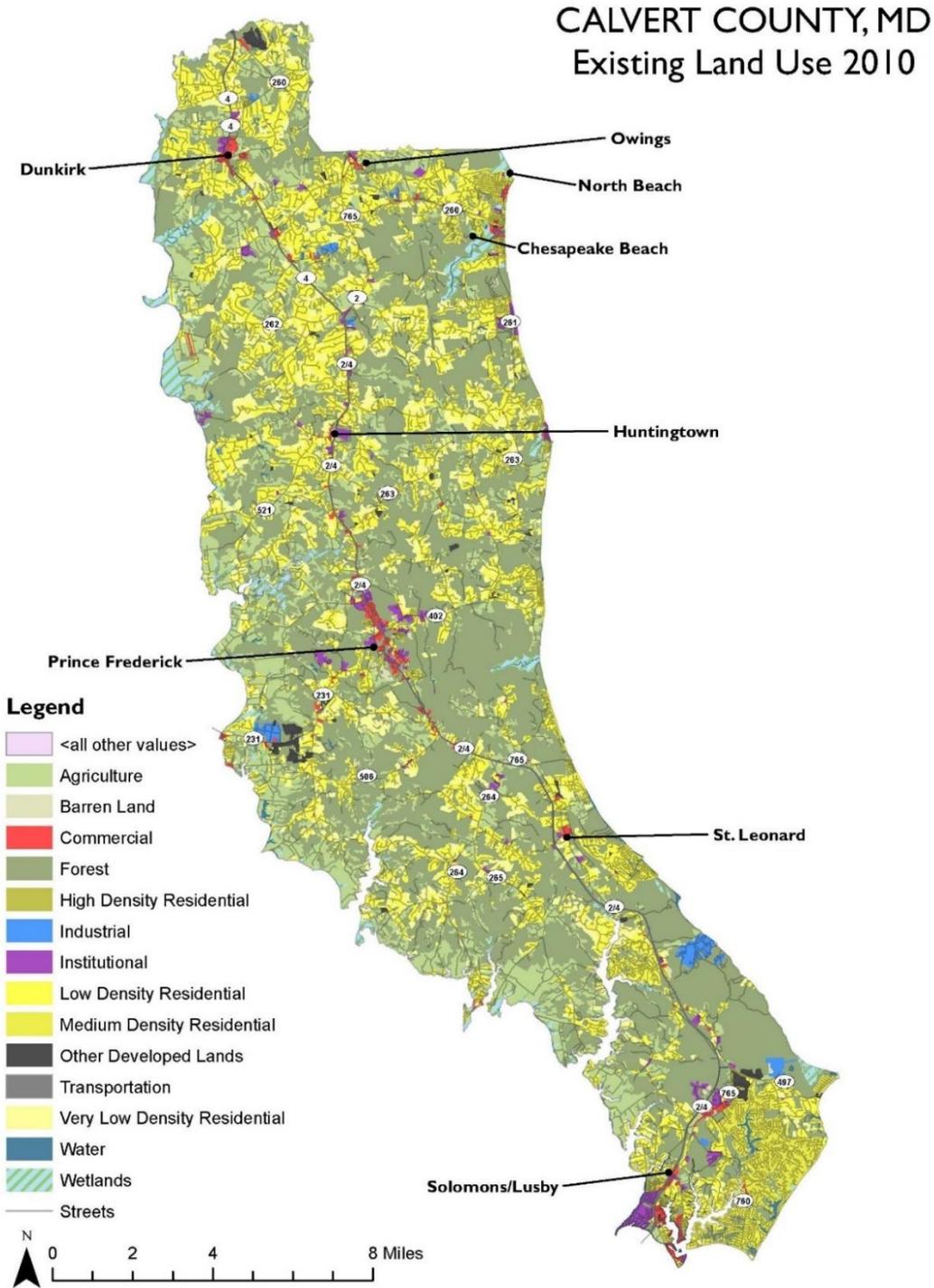
The 2010 Comprehensive Plans sets a benchmark that 35 percent of new households locate in Town Centers or immediately around Town Centers, and the county is achieving this goal. While not exactly comparable, Figure 4-2 shows over the last five years, 41 percent of permits for new residential units have gone to areas inside Priority Funding Areas.

Figure 4-2: Percent of Residential Permits inside PFAs



Source: Calvert County Planning Commission Annual Reports

Figure 4-3: Existing Land Use Map



Source: Maryland Department of Planning

While this distribution of new households is consistent with the 2010 objective, it has not produced the development patterns envisioned in the Comprehensive Plan or by the Town Center master plans. There are options for creating a strong physical line between the rural landscape and the growth areas by directing development and establishing clear boundaries. These strategies could encourage development in the designated areas, restrict development in rural areas, and buffer growth areas from rural areas to limit sprawl.

Managing Residential Growth

Implementation of the previous Comprehensive Plan policies has successfully reduced the county’s growth rate for both population and households, which has continually decreased since its peak in the 1970’s. Over time, Calvert County, has gone from being the fastest growing county in Maryland to one of the slowest. The population growth rate is projected to continue to slow in the future (Table 4-2 and Table 4-3).

Table 4-2 Population Increase and Growth Rate by Decade, 1930-2010

Total Population in Calvert County								
1930	1940	1950	1960	1970	1980	1990	2000	2010
9,528	10,484	12,100	15,826	20,682	34,638	51,372	74,563	88,737
Percent Change (By Decade)								
1930's	1940's	1950's	1960's	1970's	1980's	1990's	2000's	2010's
10.0%	15.4%	30.8%	30.7%	67.5%	48.3%	45.1%	19.0%	12.9% *

Source: Maryland Department of Planning

Table 4-3 Projected Population and Growth Rate, 2020-2040

Population Projections for Calvert County		
2020	2030	2040
94,600	99,200	100,450
Percent change		
2010-2020	2020-2030	2030-2040
6.6%	4.9%	1.3%

Source: Maryland Department of Planning, August 2017

The slower growth in population translates into a reduced growth of households and demand for additional housing units (Table 4-4).

Table 4-4 Project Households and Growth Rate 2020-2040

Household Projections for Calvert County		
2020	2030	2040
33,900	36,900	37,600
Percent change		
2010-2020	2020-2030	2030-2040
9.9%	9.0%	1.9%

Source: Maryland Department of Planning, August 2017

Development Capacity Analysis

The goal of a development capacity analysis is to consider the future and show a realistic image of the development that has the potential to occur given the set of conditions existing in the county. Actual growth may never occur in the exact condition illustrated but the analysis gives residents and administrators alike a vision to guide policy discussions about future development.

In 2016, the Maryland Department of Planning (MDP) prepared a preliminary analysis of the development capacity for the current zoning regulations in Calvert County coupled with recent provisions in state law. The analysis projected that the current zoning can accommodate approximately 9,000 additional housing units, without the use TDRs and approximately 15,000 additional housing units with the use of TDRs.⁶

MDP ran six scenarios for Calvert County⁷. The scenarios focus on the use and application of the County's TDRs, potential implementation of the Sustainable Growth and Agricultural Preservation Act of 2012 (Growth Tier Act/septic law), and site level constraints. They are illustrative of a potential range of possibilities for development capacity in Calvert County. These data points represent the "bookends" of what could potentially occur. Future development patterns based upon the 2016 zoning would likely be "somewhere in the middle". This analysis allows more informed decision-making about future changes to land use policy.

⁶ Material in this section is based upon a memorandum from the Maryland Department of Planning to the Calvert County Planning Commission Administrator, dated August 9, 2017, Re Calvert County Capacity Analysis

⁷ The MDP development capacity analysis does not include the municipalities of Chesapeake Beach and North Beach since they have their own planning & zoning authority.

The two scenarios that come closest to bracketing the county’s realistic development potential, Scenarios 4 and 6 are described below. Table 4- shows the results for these two scenarios.

Scenario 4: No use of TDRs and "Septic Law" scenario - assumes that current programs do not change over time. This scenario illustrates the potential impacts of the septic law, using the county's most recent draft Septic Growth Tier Map (May 2016). It also assumes that there is no use of TDRs. In other words, zoned densities reflect the minimum densities allowed in each zoning district without the use of TDRs.

Scenario 6: Full Site Constraints and "Septic Law" Scenario - assumes that current programs do not change overtime. This scenario illustrates the potential impacts of the septic law, using the county's most recent draft Septic Growth Tier Map (May 2016). It assumes that all constrained lands identified in the county's ordinance that are mapped are subtracted from the developable acres of each parcel greater than 5 acres.

Table 4-5 Calvert County New Household Capacity by Generalized Zoning District

Generalized Zoning	Scenario 4 - NHC No TDR with Septic Law	Scenario 6 - NHC Full TDR with Septic Law and Full Constraints
Town Centers*	1,000	5,000
Villages*	300	400
Inside 1-Mile Radius	2,900	4,200
Outside 1-Mile Radius	4,600	5,400
Total	8,700	15,000

Source: Maryland Department of Planning, August 2017

*Proposed Land Use Categories, 6/2017: Town Centers: Dunkirk, Prince Frederick, Lusby, and Solomons; Villages: Owings, Huntingtown, and St. Leonard

Comparing the projected growth with the projected capacity in the county shows that while the county policies indicate a preference for new development to locate within Town Centers, there is greater capacity to absorb new growth in the areas outside the Town Centers.

Future Land Use Plan

The Future Land Use Plan establishes nine land use categories shown in Figure 4 with the following meanings:

Rural Areas

Farm and Forest – These rural areas are dominated by existing farms and forest with an average density of about one dwelling unit for every 20 acres. The use of TDRs in the Farm and Forest areas is counter to the idea of preserving these areas.

Rural Residential – These are rural areas dominated by existing large-lot residential development, typically 3-10 acres in size, with an average lot size of approximately five acres. The category allows recognition of existing small-scale neighborhood convenience retail and service uses as well as essential public services. The use of TDRs is counter to the idea of directing growth to Town Centers and Villages.

Waterfront Communities – These existing, mature residential communities typically pre-date zoning and subdivision regulations with lot sizes of an acre or less. They are not planned for expansion. The use of TDRs is counter to the idea of directing growth to Town Centers and Villages.

Wetlands – These are larger concentrations of tidal wetlands as defined by state and federal regulations. These boundaries are based on current zoning (6/2017). Development is generally prohibited in these areas.

Growth Areas

Town Centers – Town Centers have a base density of three dwelling units per acres, which can be increased using TDRs to a density consistent with the approved Town Center Master Plan. These communities allow a wide variety of commercial and residential development. Future development is guided by a Town Center master plan. Each has nearby residential development, typically within a one-mile radius of the Town Center.

Villages – These places are designated as Town Centers in the 2010 Comprehensive Plan but have a lower intensity and smaller scale with a more limited variety of commercial and residential development. These locations are suitable for additional small-scale commercial development and various types of single family dwellings at a base permitted density of one dwelling unit per acre. Future development is guided by an adopted master plan.

Residential – This designation applies to the mapped areas within approximately one mile of a Town Center. The base permitted density in these areas is one dwelling unit per acre with densities permitted to increase to four dwelling units per acre through the use of TDRs and developer-funded provision of public water and sewer facilities.

Commercial & Industrial Areas

Industrial – These are manufacturing and employment centers that may include some larger-scale institutional and services uses.

Marine Commercial – These are small-scale, water-dependent uses like marinas and restaurants, providing convenience services to residents and visitors.

Rural Areas

Farm and Forest and Rural Residential

Farm and Forest

The Farm and Forest Area allows limited development and encompasses existing agriculture and forested areas. The area has been reserved for future farming and preservation of natural resources. It is predominantly in Tier Four of the Growth Tiers and should provide the lasting agricultural and forested character to Calvert County. The boundary has been reconfigured to reduce the existing residential development within the Farm and Forest District. New development is limited to one lot per 20 acres with a maximum of seven lots in any subdivision.

Rural Residential

The Rural Residential area is a combination of existing small-lot clusters far outside of the PFAs and large-lot subdivisions spread throughout the county. The Rural Residential border with the Farm and Forest area is designed to distinguish large farmland parcels from these smaller residential lots. Rural Residential is predominantly in Tier Three of the Growth Tiers. The current average parcel size is 2.68 acres and future development is restricted to one lot per twenty acres.

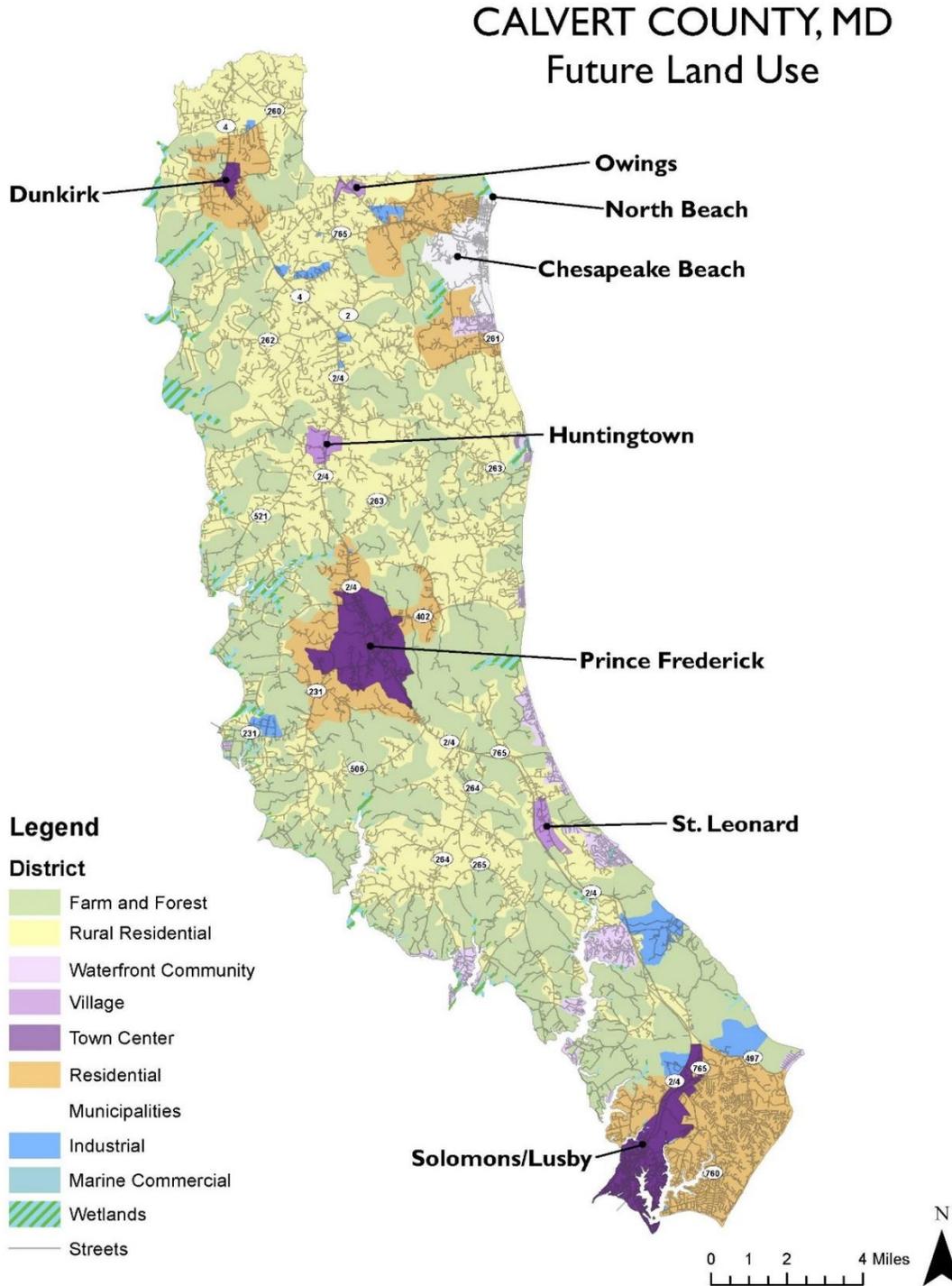
Over the years, the County has adopted several programs to try to minimize both the number and the impact of residential subdivisions in the Farm and Forest District and Rural Residential area while still trying to protect landowner equity. These programs include large lot zoning, critical area regulations, clustering, the TDR program, and several state and county land preservation programs.

Rural Commercial

Numerous commercial uses exist in scattered locations along roadways, in many cases in locations that have been commercial for decades. These uses are currently zoned as Rural Commercial. Many of them are owned and managed by local business people who provide valuable services to the community. At the same time, many of these sites have substantial redevelopment and expansion potential, which can attract commercial uses away from the Town Center and Villages.

As a general policy, nonagricultural commercial uses in the Farm and Forest District and Rural Community District should be limited to uses that support, complement, and promote farming, forestry, heritage, and ecotourism. Commercial uses in the Farm and Forest District and Rural Residential District should be strictly limited to help avoid drawing traffic onto rural roads and creating conflicts with existing residential communities.

Figure 4-4 Future Land Use Plan



Waterfront Communities

Waterfront Communities are unincorporated, clustered, small, population centers located along Calvert County's waterfront. These small-lot communities are located in rural locations and were developed before many of the health, safety, and environmental regulations that govern the layout and design of newer communities. Their waterfront location leads to increased risks of flooding or cliff erosion and their small lot sizes with well and septic facilities may contribute to public health and environmental threats. Waterfront communities are now recognized as unique places within the county; future development within these areas is limited.

Waterfront Communities are recognized as unique places within the county but future development within these population areas is limited.

Areas proposed as a Waterfront Communities place type include:

- Plum Point
- Dares Beach
- Cove Point
- Summer City
- Scientists Cliffs
- Calvert Beach and Long Beach
- Broomes Island

Waterfront Communities may contain marine commercial uses that are typical of other waterfront communities along the county's Chesapeake Bay shoreline. The street grid system typically runs parallel to the coast line. Rural Commercial uses, if they exist, are oriented along a corridor and mixed with small-scale civic uses. The waterfront is primarily in private ownership and includes commercial marinas, restaurants, and private residences. Open space, if provided, is in the form of small pocket parks. The mix of uses serve a multi-generational community. There are water-dependent uses, such as enhanced docking facilities, boat ramps, and kayak launches.

Wetlands

Natural areas such as wetlands, wildlife habitat, beaches, and steep slopes are important from an environmental perspective, but they also help create the special character of rural areas. The protected wetlands in the Land Use Plan could serve as starting point for a system of greenways that provide real benefits to the local economy by bringing tourism to the county while still supporting the environment, working farmlands, forests, and fisheries.

Growth Areas

Town Centers including the area directly surrounding the Town Centers and Villages are the designated Growth Areas.

Town Centers

Town Centers contain a mixture of residential, commercial, and institutional uses. Town Centers accommodate the most intense development in the county, mixing and blending housing types, public facilities, employment, and commercial uses. They include a variety of lot sizes and housing stock that cater to an economically diverse population. Commercial uses include destination retail uses and services that tend to be clustered within a central business area along a commercial corridor. Town Centers serve a community of all ages, with special attention given to senior citizens and young adults. A traditional plan radiates out from a central point with streets lined with sidewalks and a pedestrian-oriented design of blocks that maintain short walking distances. Four unincorporated population centers are large enough to support this type of development: Dunkirk, Prince Frederick, Lusby, and Solomons. The municipalities of Chesapeake Beach and North Beach continue to be designated Town Centers, with their own planning and zoning authority.

Town Centers are the primary locations for most commercial uses. They promote business growth by providing infrastructure and enabling businesses to benefit from proximity to each other. Town Centers include one or more major employment centers (e.g. governmental employment, institutional, employment, or retail employment); and they also promote business growth by providing attractive, mixed-use settings where offices, stores, restaurants, and homes are within proximity to each other. Town Centers are the county's primary designated growth areas and are designated Priority Funding Areas. As Town Centers continue to develop, they will help attract the types of commercial uses that generate increased tax revenues and high-quality jobs and provide amenities that attract both visitors and retirees.

Town Center master plans are individually adopted and continue to provide a broad mix of commercial, office, residential, public, and quasi-public development as a means of promoting economic development, creating local jobs, expanding cultural opportunities, reducing traffic congestion, preventing strip commercial development, providing a full range of housing opportunities, and providing convenient access to goods and services for county residents. The provision of adequate roads, water, wastewater systems, public transportation, and high-quality internet communication systems, together with public amenities such as parks, town squares, trails, sidewalks, bikeways, indoor recreational, and cultural facilities, should remain a top priority, in accordance with master plans for Town Centers. Emphasis is placed on creating a more compact pattern of development that will reduce dependence upon automobiles and enable people to live within convenient proximity to stores, offices, and services.

Dunkirk

Dunkirk is the gateway to Calvert County from the Washington, D.C. metropolitan area, is bisected by MD 4, and is the only Town Center served by private community sewer systems. These characteristics require a unique set of land use policies specific to this area of approximately 200 acres at the northern

end of the county. The Town Center is dominated by commercial uses oriented to MD 4. Surrounding the Town Center are large areas of single-family homes served by individual, private, septic systems.

The Dunkirk Town Center master plan should be updated to reflect current demographic, land use, and market conditions as well as the policies of this Comprehensive Plan.

Prince Frederick

Prince Frederick is the largest Town Center in the county, is service by a public water and sewer system, and contains a mix of residential, commercial, and institutional uses. This Comprehensive Plan expands the boundaries of the Town Center.

The Prince Frederick Town Center contains a central business area oriented along a commercial corridor, which provides a relatively high concentration of employment and civic uses. Most of Prince Frederick is auto-dependent and not easily accessible by walking or bicycling. There are provisions for multiple travel modes, including transit options; however, a stronger multi-modal network could be provided through future redevelopment to improve pedestrian and bicycle access for a range of ages, abilities, and income groups. A mixed-use center is envisioned with a focus on multi-family housing and more public open space.

There is a small historic downtown area with pedestrian connections through parks and public squares and mid-block pedestrian passageways. The sidewalk network is limited to a few blocks before it becomes intermittent or nonexistent.

The greatest challenge in Prince Frederick is the modification of the current street network to foster compact, mixed-use development. The planned loop road system consisting of Prince Frederick Boulevard and Chesapeake Boulevard creates parallel local roads is intended to draw local travelers off MD 2/4, the major highway, and has the potential to assist in development of a more robust grid pattern of streets. However, community resistance to interconnection of separate subdivisions and limitations on new access points to the highway make development of a network challenging.

Prince Frederick could support the highest-level intensity of development for a Town Center. At a charrette for Prince Frederick, citizens and county staff worked together to develop future growth scenarios that proposed expanded boundaries, improvements to the transportation network, and options for future land use. This effort should be completed and a new Master Plan for Prince Frederick should be adopted.

Lusby

Lusby is located in southern Calvert County along MD 2/4. This Comprehensive Plan expands the area of the Town Center to the north and south to encompass commercial and employment areas and to provide additional opportunities for mixed-use development and integration of the public and institutional activities along Appeal Lane. Much of Lusby is served by an existing public sewer system, which should be extended to allow for additional development in the Town Center and to address public health issues that may arise in the surrounding residential areas.

The Lusby Town Center is a commercial and public service center oriented to the needs of residents in the southern Calvert County. Public and institutional uses near the commercial core include two elementary schools, a community center, and a residential senior citizen center. Future plans for the Town Center should strengthen the road, bicycle and pedestrian connections between the core area, these institutional uses, and the surrounding residential areas of Chesapeake Ranch Estates and Drum Point.

The current Town Center master plan guides development within the previous Town Center boundaries and should be updated to reflect current demographic, land use and market conditions as well as the policies of this Comprehensive Plan. The updated master plan should seek to establish a clear visual boundary between Lusby and the adjacent Solomons Town Center.

Solomons

The Solomons Town Center designation includes Solomons Island, the land to the north of the Island along Maryland Route 2/4 to the Lusby Town Center boundary, and the majority of the Dowell Peninsula. The community is also home to the Solomons Annex of the Naval Air Station Patuxent River (NAS Pax River). Access to the Solomons Town Center is provided from the north by Maryland 2/4 and MD 765, and from the south by MD 4 which connects Solomons to St. Mary's County via the Thomas Johnson Memorial Bridge.

Solomons takes its character from a 200-year association with a great natural harbor. In the 19th century, Solomons Island was home to an active oyster harvesting and packing industry supporting the picturesque Avondale residential community on the mainland. The U.S. Navy has had a presence at Point Patience since World War II. Following that war, marina development expanded in the area providing boat slips for transient and long-term dockage and attracting tourists served by restaurants, bars and lodging businesses, large and small.

Solomons has expanded its role as a tourist center, adding and expanding attractions such as the Annmarie Sculpture Garden and Arts Center, the Calvert Marine Museum, the Watermen's Memorial Park, and the Riverwalk and Pavilion. Protection of the architectural and historic resources are key to retaining and expanding tourism.

Outside the historic areas of the town center, expanding opportunities for employment, business and residential growth should seek to reflect the community's historic character while attracting new residents and jobs.

The current Town Center master plan guides development within the previous Town Center boundaries and should be updated to reflect current demographic, land use and market conditions as well as the policies of this Comprehensive Plan. The updated Master Plan should also seek to establish a clear visual boundary between Lusby and the adjacent Lusby Town Center.

Villages

Villages contain a mix of uses, with concentrations of commercial, retail, and civic and/or community uses. Villages, like Town Centers, have a central point from which development extends. However, villages have more local-serving commercial uses when compared to Town Centers.

Three of the 2010 comprehensive plan’s Town Centers, Huntingtown, Owings, and St. Leonard, are reclassified as a Villages. They have potential for limited development with some additional commercial uses that serve the local community. The street network allows for a concentrated commercial area surrounded by varying levels of residential density. Villages are similar to Town Centers but are typically smaller and oriented around an activity center rather than a commercial corridor. The commercial area is smaller than that of a Town Center, with active ground floor uses typically lining a main road along two to three main intersections. There is a variety of lot sizes and housing stock that cater to an economically diverse population. There may be one or more small to medium-size employment centers (e.g. institutional employment, and retail and service employment). Open space and public spaces in Villages are provided and proportionate to building massing. Village are served by individual, private sewage disposal systems. Community sewage treatment systems are allowed solely to address public health issues created by older development patterns.

Development in the Villages is guided by individual master plans. These adopted plans should be updated to reflect the policies of this Comprehensive Plan.

Owings

Owings is located along Chesapeake Beach Road and MD 2, near the northern county boundary with Anne Arundel County. The boundaries are expanded to include the nearby employment center. The adopted Master Plan for Owing envisions a mix of uses including small-scale, retail shops, the creation of a “Main Street” quality to Thomas Street, and safe pedestrian connections.

The Owings Town Center Master Plan, adopted in 2000, depends in large part upon the provision of public water and sewer. Since the county does not have a near-term plan to provide this service and the market demand has not supported extension of service by a private entity, the master plan should be updated to more closely conform to the policies of this Comprehensive Plan.

Huntingtown

Huntingtown is in central Calvert County, north of Prince Frederick, and has functioned as a Village, centered on the crossroads of Old Town Road (MD 524) and Hunting Creek Road (MD 521). The small commercial center restaurants, retail shops, and offices.

Huntingtown High School provides a gathering place for the community as well as educational and recreation

facilities. Churches, a fire station and the post office round out the public and institutional uses located in this quiet community. The extension of the Village designation across MD 2/4 recognizes the

Villages have more local-serving commercial uses as compared to Town Centers,

expansion of institutional uses at the edge and includes all four corners of the intersection of MD 2/4 and Cox Road.

The Huntingtown master plan should be updated to address the expanded area of the Village and the policies contained in this Comprehensive Plan

St. Leonard

St. Leonard is located in central Calvert County, south of Prince Frederick. The commercial core of St. Leonard is located along St. Leonard Road (MD 765) and Calvert Beach Road radiating out from the roundabout and extending one or two blocks in each direction.

The St. Leonard Town Center Master Plan was adopted in 2013 and includes important goals to improve road circulation and traffic safety, the image of the community, maintaining environmental quality, and encouraging compatible economic development. This Master Plan should be updated to address the designation of St. Leonard as a Village and the policies contained in this Comprehensive Plan.

Residential

The 1983 Comprehensive Plan also recommended that towns be established around Town Centers and that single-family residential development be directed to the towns. Areas within a one-mile radius of each Town Center were designated to permit higher density with the purchase of Transferable Development Rights. The 2010 Comprehensive Plan continued to define a one-mile radius around each Town Center as a location for additional growth, limited primarily to single-family detached homes on private well and septic systems.

The mapped Residential areas are more clearly defined than in previous plans and are associated with locations defined as Town Centers. These Residential areas provide a transition from higher density Town Center outward to rural areas. Residential areas are connected to the adjoining Town Centers through the local roadway, bicycle and pedestrian networks. Community amenities help to establish an identity and provide a sense of place for those living in the area. In general, these areas consist of detached single family houses. This redefined area makes future development in these locations more predictable and better identified with the associated Town Center.

Commercial and Industrial Areas

Commercial development is mainly focused inside Town Centers with some additional commercial development located in Rural Commercial zoning districts, most of which are located along the main roadways. Calvert County promotes a broad mix of commercial, office, residential, public, and quasi-public development within Town Centers.

Industrial

Industrial areas to provide space specifically, for targeted industries, such as high-technology firms and research industries. The intent is to allow limited retail and service uses in these districts and to reserve

adequate and flexible space for high-revenue-generating uses that provide high-quality jobs for County residents.

Industrial areas give preference to industries, offices, commercial services, wholesale, and marine-related businesses. Providing appropriate locations for these uses will not only help ensure that they have the infrastructure they need, but will also help to reduce the potential for conflicts and negative impacts that can be associated with some commercial and industrial uses. Design standards can further help minimize these conflicts and negative impacts, allowing for more mixed-use development that can enhance quality of life as well as economic opportunity.

Marine Commercial

Marine Commercial provide locations adjoining waterways for businesses which supply and care to marine activities and needs. These include: boat service and repair facilities, boat docks, marine equipment stores, wholesale and retail fish and shellfish sales, hotels, motels, restaurants, and cocktail lounges. Calvert's commercial waterfront is one of the County's main tourism attractions. The county need to be proactive in facilitating its proper and effective use.

Goals and Objectives

Goal 1: Preserve the rural character of the county, its prime farmland, contiguous forests, historic resources, and environmentally sensitive areas.

Objective 1: Reserve the Farm and Forest District for farming and natural resource-related uses.

- Continue to fund the Purchase and Retirement (PAR) and Leveraging and Retirement (LAR) Programs.
- Establish a procedure for collecting voluntary contributions to the PAR fund with payment of property tax.
- Provide local support to the Maryland Agricultural Land Preservation Program and other state and federal agricultural preservation programs.
- Continue to support the goal of permanently preserving a minimum of prime farm and forestland through county, state, and federal land preservation programs and land trusts.
- Continue to limit the types of public and quasi-public uses in the Farm and Forest District based upon their purpose and intensity.

Objective 2: Promote on-farm processing and provide appropriate locations for the processing of local agricultural products.

- Permit and market value-added opportunities for farm product sales.
- Facilitate the development of an animal processing facility and regional grain depot.

Objective 2: Protect the scenic quality of existing rural landscapes and vistas.

- Explore opportunities for developing heritage sites and ecotourism.

- Look at the potential for linking agricultural and heritage tourism with other economic development activities.
- Reduce negative environmental impacts of subdivision roads and make them visually compatible with the rural character of the surrounding area while maintaining road safety.
- Strengthen regulations and incentives governing the preservation of older structures.
- Look for opportunities to connect designated wetlands with other protected natural areas and preserved agricultural lands to create a network of green spaces (green infrastructure). Where appropriate, this network could include hiking trails to create recreation opportunities for residents and visitors.

Goal 2: Use water and sewer policies to direct growth consistent with land use policies.

Objective 1: Make provisions for water and sewer service in Growth Areas consistent with the planned land uses and intensity.

- Consider options for public financial support for provision of public water and sewer facilities in the Prince Frederick, Lusby, and Solomons Town Centers to promote economic development, encourage multi-family housing opportunities, and improve public health.
- Allow developer-funded extension of public water and sewer systems into the Residential Areas around Prince Frederick, Lusby and Solomons.
- Allow privately-funded community sewage treatment facilities to serve commercial, industrial and employment uses located outside Town Centers and Residential Areas, consistent with economic development goals.

Objective 2: Limit public water and sewer service in Rural Areas.

- Do not locate public facilities such as sewer or water service areas, schools, and fire and rescue stations within the Farm and Forest District and Wetlands Districts
- Limit public sewer systems to locations where public health is compromised by existing water supply and sewage disposal technologies.
- Allow public water and sewer facilities in locations within a designated Waterfront Communities only when necessary to address public health and safety.

Goal 3: Develop Town Centers and Villages as attractive, convenient, and interesting places to live, work, and shop.

Objective 1: Continue to promote a broad mix of commercial, office, residential, public, and quasi-public development within Town Centers.

- Promote Town Centers as community cultural and activity centers by locating schools, colleges, recreational, and cultural facilities there.
- Facilitate the creation of farmers markets in all town centers.
- Consider ways to strengthen regulations regarding derelict buildings.
- Use TDRs to increase the density and range of housing types provided in Town Centers.

- Allow uses that serve both local residents and employees to locate in employment areas.

Objective 2: Review the Transfer of Development Rights Program so that it directs the majority of growth to Growth Areas.

- Evaluate the use of TDRs within the Farm and Forest areas and the Rural Residential areas.
- Explore the use of TDRs to increase commercial intensity in Town Centers.
- Evaluate the Purchase and Retirement Program for development rights.

Objective 3: Maintain a schedule to review and update Town Center and Village Master Plans.

- Review Town Center and Village Master Plans to look for additional ways to reduce dependence upon automobiles by promoting “pedestrian-friendly” site design and increasing pedestrian and bicycle circulation within and between residential, commercial, and office uses.
- Continue to improve the appearance of Town Centers and Village by emphasizing Town Center and Village Master Plan Capital Improvements Projects.
- As Master Plans are updated, look for ways to preserve and enhance the unique character of each Town Center and Village.

Goal 4: Direct commercial and industrial uses to appropriate location; provide necessary infrastructure.

Objective 1: Locate Commercial Uses and Employment Areas appropriately in Town Centers.

- Continue to direct commercial and employment growth to Town Centers.
- Identify and implement ways to improve commercial business and employment growth in Town Centers.
- Interconnect roadways, transit routes, bike routes and pedestrian networks to make the employment area part of the adjacent community.

Objective 2: Support development in the Industrial and Marine Commercial areas.

- Develop a long-range infrastructure plan for the Industrial areas.
- Maintain an inventory of Industrial land.
- Allow office and business uses in Industrial areas.
- Monitor the amount of marine commercial zoning needed and the best locations in terms of the following factors: water depths, erosion potential, water quality, and critical navigation areas.
- Allow maximum utilization of areas zoned Marine Commercial (MC) without causing significant adverse effects on aquatic resources, visual aesthetics, or neighboring residential uses (e.g., outdoor lighting projecting onto residential property).

Objective 3: Avoid the potential for strip commercial development along highways.

- Do not permit additional commercial and retail development along highways outside Town Centers.

- Do not allow commercial and retail uses to have direct access onto MD 2/4 in Huntingtown, St. Leonard, or Lusby.

Objective 4: Phase out rural commercial properties.

- Develop a plan for phasing out Rural Commercial districts that are vacant or under-utilized.
- Restrict the expansion of rural commercial uses and maintain a small-scale rural character.

Objective 5: Commercial Uses in the Farm and Forest and Rural Residential.

- Limit commercial uses in the Farm and Forest and Rural Residential areas to help avoid traffic congestion and conflicts with existing residential communities.
- Permit low-impact supplemental income opportunities within the Farm and Forest and Rural Residential areas that support, complement, and promote farming and heritage/ecotourism.

CHAPTER 5. ENVIRONMENT AND NATURAL RESOURCES

Vision

Our wetlands, streams, and forests and the Chesapeake Bay and Patuxent River support thriving plant and animal communities.

Goals

Goal 1: Encourage preservation, protection, and conservation of natural resources and environmentally sensitive areas.

Goal 2: Continue a comprehensive approach to environmental planning with special emphasis on watershed planning.

Goal 3: Encourage preservation, protection, and conservation of land-based natural resources.

Goal 4: Mitigate natural and man-made hazards in Calvert County.

State Visions

This chapter supports the Maryland State Visions related to:

Quality of life and sustainability. A high quality of life is achieved through universal stewardship of the land, water, and air resulting in sustainable communities and protection of the environment.

Environmental protection. Land and water resources, including the Chesapeake and coastal bays, are carefully managed to restore and maintain healthy air and water, natural systems, and living resources.

Resource conservation. Waterways, forests, agricultural areas, open space, natural systems, and scenic areas are conserved.

Stewardship. Government, business entities, and residents are responsible for the creation of sustainable communities by collaborating to balance efficient growth with resource protection.

Related County Plans

Flood Mitigation Plan, 2016 - The Calvert County Flood Mitigation Plan establishes a multi-objective management approach that integrates floodplain management with development regulations, public involvement, economic development, housing, water quality, and recreation.

All-Hazard Mitigation Plan, 2016 – This plan was developed to assess the hazards and risks present in Calvert County. The plan was updated in 2016 as part of a five-year review cycle.

Calvert County Watershed Implementation Plan II Strategy, 2011 - This plan contains a strategy to meet Calvert County's 2017 interim watershed target loads for nitrogen, phosphorus and sediment.

Hall Creek Watershed Implementation Plan, 2011 - This plan presents actions to address environmental quality concerns in the Hall Creek Watershed.

Hunting Creek Watershed Management Plan, 1993 - This plan presents actions to address environmental quality concerns in the Hunting Creek Watershed.

Background

Calvert County is approximately 220 square miles in area, 35 miles long north to south, and varies in width between five and nine miles. The county is a peninsula bounded on the south and east by the Chesapeake Bay and along the west by the Patuxent River. It enjoys a unique setting compared to other counties in the Washington, D.C. metropolitan area.

The topography of Calvert County is variable and rugged with an upland plain running from the northwest to the southwest. On the Chesapeake Bay shore, the upland ends in high cliffs that extend from the shoreline to heights of 120 to 130 feet. On the west, the upland areas gradually slope toward the Patuxent River where rich farmland is found. Water generally drains east and west from the central elevation towards the Chesapeake Bay and Patuxent River on either side of the County. Calvert County's unique geography provides an abundance of diverse natural resources: the Cliffs of Calvert, numerous creeks leading into the Patuxent River and the Chesapeake Bay, large areas of forest, and wetlands.

This chapter identifies the county's natural resources, sensitive environmental elements, and unique habitats, the challenges they face, and opportunities to protect and enhance them through policies and planning. It includes sections on floodplains, forestland, air quality, natural hazards, the Chesapeake Bay Critical Area, wetlands, streams and their buffers, steep slopes, habitats of rare and threatened species, and mineral resources.

The value of natural resources can be measured by the saleable products, the commercial services, and the property and health protection they provide. It is often the case that their value as service and protection assets is much greater than their commercial return. To ensure their availability for future generations, care must be taken not to decimate nonrenewable natural resources and to conserve the renewable ones. Conservation management, preservation, and regulatory protection are some of the ways natural resources are protected.

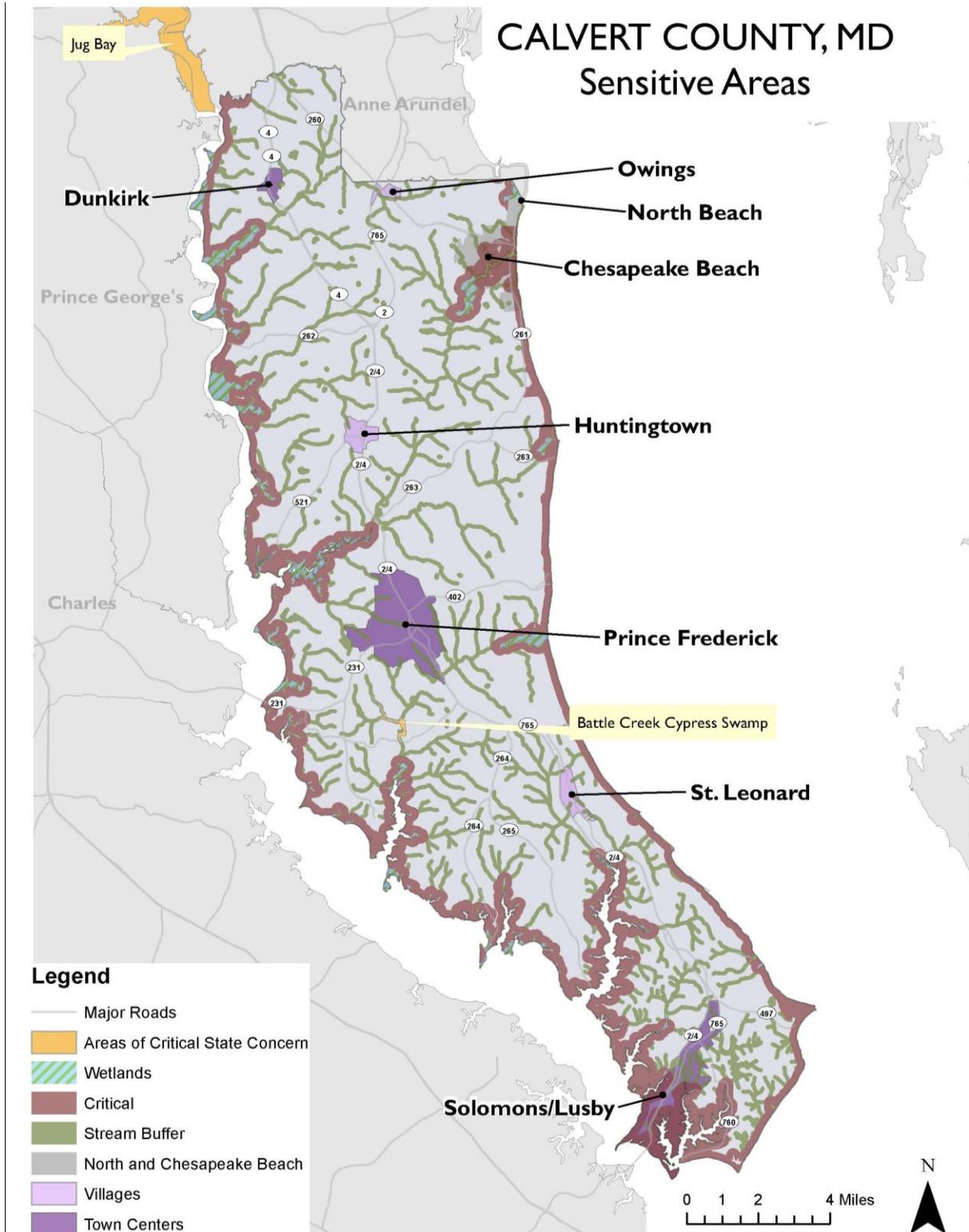
Sensitive Areas

Sensitive areas include wetlands, waterways, floodplains, steep slopes, cliffs, and habitat for rare, threatened, and endangered species. These areas are easily damaged by human activity and are generally unsuitable for development. Adverse effects of development include destruction of habitat and reduction of diversity of plant and animal species, increased nutrient loads in waterbodies, and increased runoff causing flooding. Sensitive areas in Calvert County are shown in Figure 5-1 and defined below.

Chesapeake Bay Critical Area

The Chesapeake Bay Critical Area consists of all land within 1,000 feet of the Mean High Water Line of tidal waters or tidal wetlands in Maryland. Calvert County adopted the Chesapeake Bay Critical Area Program in 1988 to comply with state legislation that protects the land immediately surrounding the Bay and its tidal tributaries. These areas are subject to regulation of development and human activities with oversight by the Critical Area Commission under the Maryland Department of Natural Resources

Figure 5-1: Calvert County Streams, Wetlands, and Chesapeake Bay Critical Area



(DNR). Land within the Chesapeake Bay Critical Area is classified as Intensely Developed Areas (IDAs), Limited Development Areas (LDAs), or Resource Conservation Areas (RCAs) based on the intensity of existing and permitted development. Development is regulated in these areas according to their classification.

Under the locally-administered Critical Area Program, review and approval is required for construction, grading, clearing vegetation, removing trees and branches, and clearing land within the Critical Area. The program provides additional protection for a 100-foot buffer around the Chesapeake Bay tidal waters and tidal wetlands. Individuals developing within the Critical Area must submit a Buffer Management Plan that shows any development activity and limits vegetation disturbance within the 100-foot buffer.

The requirements of the Critical Area Program are implemented through various local ordinances including the zoning ordinance and subdivision regulations.

Wetlands

Wetlands are generally low lands covered with shallow water that provide ecological benefits such as flooding and water storage, pollution control, wildlife habitat, and a major food supply for aquatic organisms, migratory waterfowl, and other wildlife. Wetlands are also referred to as marshes, swamps and bogs. Wetlands include both freshwater and saline areas. Calvert County has approximately 2400 acres of wetlands, most of which are tidal wetlands located along the coastline. The county's wetlands are protected and regulated through the Maryland Department of the Environment and Calvert County regulations. The State of Maryland requires a 25-foot buffer around wetlands.

Area of Critical State Concern

The areas of Critical State Concern are specific geographic area of the State which, based on studies of physical, social, economic and governmental conditions and trends, is demonstrated to be so unusual or significant to the State that the secretary designates it for special management attention to assure the preservation, conservation, or utilization of its special values.

The Maryland Department of Planning has identified Jug Bay and the Battle Creek Cypress Swamp as an Area of Critical State Concern (ACSC).

Jug Bay is located along the Prince George's and Anne Arundel counties' shoreline of the Patuxent River. The Bay itself lies at a point roughly one mile from where Anne Arundel, Prince George's and Calvert counties meet. The ACSC includes tidal wetlands, non-tidal wetlands including the freshwater marshes that are some of the largest in the State. Any degree of alternation or intrusion by development in the site itself will have significant negative impacts on this ecosystem.

Battle Creek Cypress Swamp located in the southern portion of Calvert County. It is a coastal plain swamp that contains one of the last remaining stands of bald cypress in Maryland. The Battle Creek Cypress Swamp is a designated Sanctuary owned by The Nature Conservancy, which protects the wetlands on the site from development. Development on the land adjacent to the Battle Creek Cypress Swamp has the potential to affect the health of these wetlands.

The Maryland Department of Planning (MDP) has identified the residential development near the eastern boundary of Battle Creek Cyprus Swamp as an area of Special Consideration, noting that the stability of this area depends on future land use. ¹ This area contains single-family residential development and agricultural land. The land area of the swamp is zoned Farm and Forest District, but is bordered by a small area of Rural Residential. According to the State's system for ACSC, these zones classify the areas as protected zones which restrict or limit development.

Streams and Their Buffers

Streams are conduits to lowlands, rivers, and the Chesapeake Bay. They provide habitat for many aquatic organisms, including areas for fish spawning and feeding. They also provide drinking water for wildlife and a means of transportation for organic materials which support aquatic species. At the same time, streams provide a direct pathway for pollutants to move downstream into our rivers and the Chesapeake Bay. These pollutants, including sediment, nutrients, and toxic waste, can cause serious damage to aquatic ecosystems and the fisheries production within them. Forest and wetland buffers adjacent to streams serve the important function of removing pollutants before they enter the stream. They also provide habitat and habitat corridors for wildlife.

Calvert County has 200 miles of streams². A 2009 assessment of Calvert County's streams performed by the Maryland Biological Stream Survey indicated that 19% of streams were in good condition, 25% were in fair condition, and 56% were in poor to very poor condition. The key stressors to these streams are nutrient enrichment, acid rain, inadequate riparian buffers, unstable banks, and poor overall physical habitat (US EPA).

Streams that are in good condition (Lyons Creek, Plum Point Creek, and Hall Creek) should be protected from degradation. Those in poor and very poor condition should be considered for remediation.

Steep Slopes and Cliffs

Steep slopes are defined as areas with a slope greater than or equal to 25 percent. 4 percent of Calvert County are steep slopes and most of these steep slopes are covered and stabilized by forest cover.

However, disruption of vegetation on steep slopes can lead to severe erosion, landslides, loss of fertile topsoil, filling in of waterways, flooding, and decrease in water quality. Preservation of steep slopes adjacent to waterways is especially important because of the potential harm

A cliff is a high steep face of 10 feet or higher from the toe of the slope with a slope more than 50 percent, whether vegetated or non-vegetated.

¹ Maryland Department of Planning, Maryland's 1981 Areas of Critical State Concern – Past, Present and Future, 2008

² Green Infrastructure Center Inc., Esri.

to water quality and aquatic habitat. These steep slope areas are, therefore, generally unsuitable for development.

Cliffs are a high steep face of 10 feet or higher from the toe of the slope with a slope more than 50 percent, whether vegetated or non-vegetated. The Chesapeake Bay Cliffs on the eastern side of Calvert County are of concern, which face risks associated with hundreds of years of erosion. The upland ends in the cliffs are clay, gravel and sand and extend from the shoreline to heights of 125 to 135 feet. These cliffs are eroded by waves, landslides, groundwater seepage, freeze/thaw action, and weathering. Houses built near the edge of these cliffs face considerable danger from ongoing erosion and episodic events. In 2010 the county formed a steering committee to consider the impact of shoreline erosion on houses near the eroding cliffs. The steering committee developed a report and preliminary framework for addressing the issues associated with cliff erosion.

The report identifies the most viable short term solution as property relocation or government acquisition of houses that are in immediate danger. The report found 234 homes are located within 100 feet of the cliffs and 131 of these homes are located within areas with an erosion rate of up to 2 feet per year, presenting risks to these properties and the residents who live in them. Calvert County received a \$5.15 million “hazard mitigation” grant through FEMA in 2012 to begin acquiring homes near the edge of the cliffs.

Medium-term potential solutions listed in the report include cliff stabilization and shoreline stabilization. Because many of the properties on the cliffs contain habitat for the endangered Puritan Tiger Beetle, they are bound by strict limits on the types of land disturbance they can undergo as part of cliff and shoreline stabilization efforts. Those properties that have Puritan Tiger Beetle habitat must follow a set of guidelines to mitigate damage to the population if they seek to pursue engineering solutions to prevent erosion.

The Steering Committee identified long-term solutions as working with the Army Corps of Engineers to conduct a two-year feasibility study of the eroding shorelines in Calvert County and identifying and pursuing fee simple or easement acquisition of Puritan Tiger Beetle habitat.³

Habitat for Rare, Threatened, and Endangered Species

Calvert County’s large forest and wetland areas support high biodiversity in the county. However, over time that habitat has been reduced by development on forested land.

The Maryland Department of Natural Resources’ Natural Heritage Program has identified 20 animal species and 83 plant species in Calvert County in their inventory of Rare, Threatened, and Endangered Species. One of these animal species, the Atlantic Sturgeon, is listed as endangered (LE) in the United States under the Endangered Species Act, indicating that the species is “in danger of extinction within the foreseeable future throughout all or a significant portion of its range”. The Northeastern Beach

³ Calvert County et al. (2010). *Chesapeake Bay Cliff Erosion in Calvert County – Draft Steering Committee Report* <http://www.co.cal.md.us/DocumentCenter/View/3389>.

Tiger Beetle and Puritan Tiger Beetle are listed as threatened (LT) under the Act. The Puritan Tiger Beetle is also “Critically Imperiled” on a global scale.⁴ The Maryland Department of Natural Resources has established the Puritan Tiger Beetle Habitat Conservation Program to protect the species and requires any individual altering a Puritan Tiger Beetle habitat to obtain a permit and mitigate the impact to the habitat. This protection program limits the potential for the county to address the erosion of the Calvert Cliffs because large portions of the cliffs are habitat for the Puritan Tiger Beetle.

The county’s rare, threatened, and endangered species are concentrated primarily in the coastal areas of the peninsula. Randle Cliff Beach, Camp Roosevelt Cliffs, Flag Ponds, and Cove Point Marsh are classified by Calvert County as Natural Heritage Areas and large portions of the eastern coastline are State Listed Species Sites, which both contain rare, threatened, and endangered species (Figure 3).

The State maintains a database of Sensitive Species Project Review Areas (SSPRA), which provides general locations of documented rare, threatened, and endangered species, to guide counties in Maryland in identifying and monitoring these species. Areas within Calvert County are designated SSPRAs, but the exact locations are not made available to the public in order to protect the species.

Calvert County should preserve sufficient amounts of sensitive land to maintain Calvert County’s diversity of wildlife and plant life.

Protection Measures

Resource Protection Area

A Resource Protection Zone is a strategy to extend existing protection of the County’s sensitive areas by delineating buffers around perennial streams and nontidal wetlands. Most forms of development are prohibited within the Resource Protection Zone and management plans are required for agricultural and timber harvesting activities within the zone.

While the use of buffers for resource protection is not a new concept, this zone, which would consist of 100- to 300-foot buffers around most streams and wetland resources in the county, would strengthen existing protections. A 100-foot buffer width is widely accepted as a minimum width to filter pollutants, and 300 feet as the minimum to protect wildlife habitat.

Additional Protections

In addition to the Resource Protection Zone, the following existing regulations, ordinances, and processes contain provisions related to the protection of sensitive areas in Calvert County:

- Chesapeake Bay Critical Areas Regulations
- Floodplain Regulations

⁴ Maryland Department of Natural Resources, List of Rare, Threatened, and Endangered Species of Calvert County, 2016.

- Soil and Erosion Control Regulations
- Stormwater Management Ordinance
- Zoning Ordinance
- Subdivision Ordinance
- Sediment Control Ordinance
- Development Review Process
- Natural Heritage Areas

Watershed Management

Watershed management plays an important role in improving the water quality and health of the county's wetlands and waterways. Calvert County is crossed by the West Chesapeake Bay watershed, the Patuxent River watershed. The water generally drains from the central elevation towards the Chesapeake Bay and Patuxent River on either side of the county.

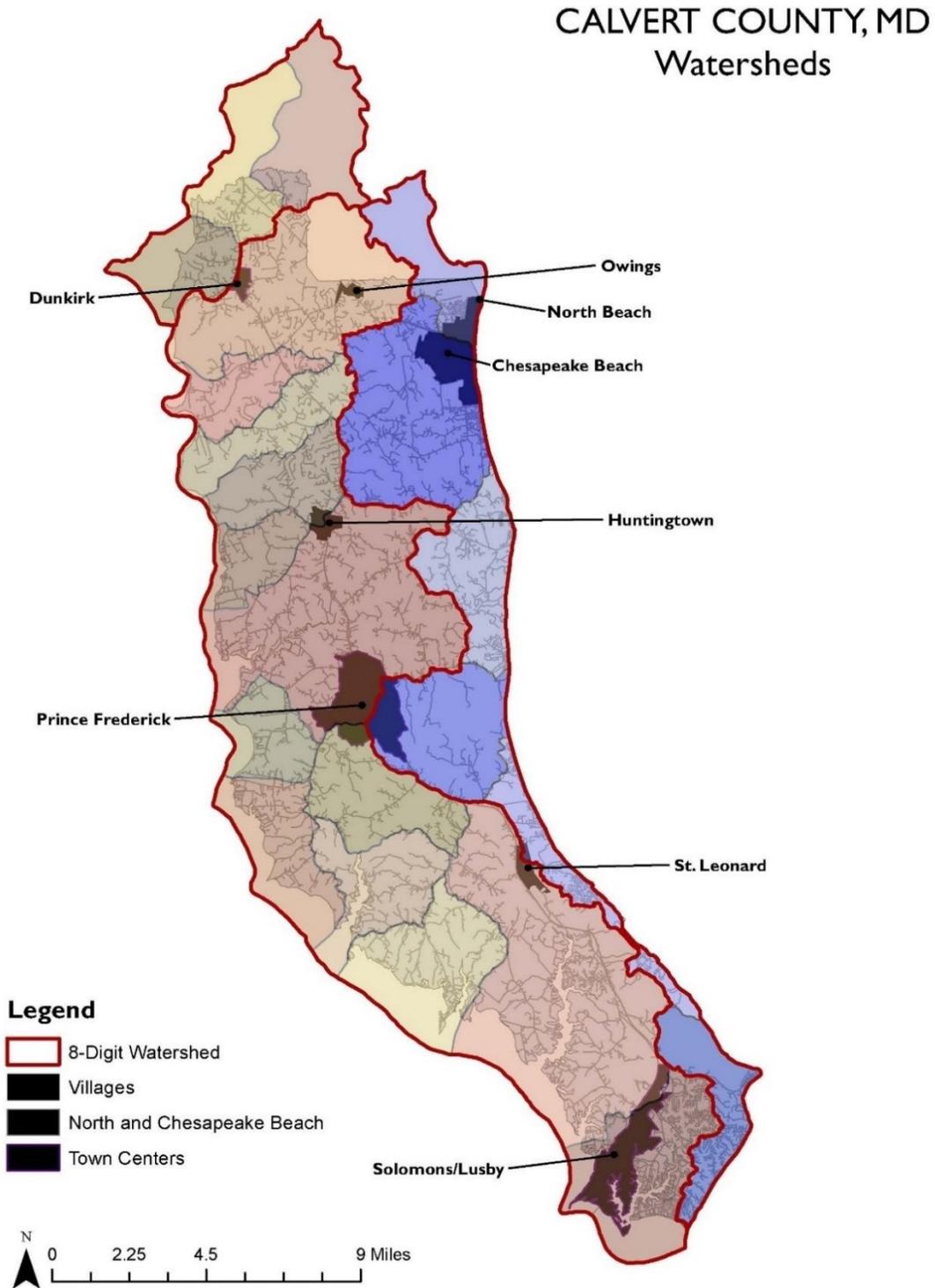
The most prevalent pollutants within Calvert County's watershed are nitrogen, phosphorous, and sediment. The county's major point-source polluters are wastewater treatment plants. Non-point source pollution originates from agricultural land, septic systems, and runoff from impervious surfaces. Calvert County has focused on reducing the pollutants within the Chesapeake Bay watershed through its Watershed Implementation Program and is currently implementing strategies through this, such as improving stormwater retention and upgrading septic systems to reduce pollution, to address water quality concerns.

Regardless of the current steps, the Maryland Biological Stream Survey found that the streams within the West Chesapeake Bay watershed are in "poor" health and the Patuxent River watershed are in "fair" health. None of the state's stronghold watersheds, i.e., watersheds with the highest biodiversity of rare, threatened, or endangered species of fish, amphibians, reptiles, or mussels, are in Calvert County. This indicates a need for restoration and protection projects and land use changes to improve the health of the county's watersheds. Education on the watersheds would increase citizen involvement in improving the health of the watersheds.

The county has created watershed implementation plans to guide projects to improve the quality of select watersheds. These watersheds include:

- Hall Creek Watershed Implementation Plan, 2011
- Hunting Creek Watershed Management Plan, 1993

Figure 5-2: Watersheds in Calvert County



Source: Maryland Department of Environment

Patuxent River Policy Plan

The Patuxent River is one of the eight major tributaries to the Chesapeake Bay and is the longest and deepest river running entirely through Maryland. The Patuxent River Commission adopted the 2015 Patuxent River Policy Plan to guide the seven Patuxent counties so that actions be undertaken to protect and improve the health and economic value of the Patuxent River. The Calvert County Board of Commissioners adopted the Plan by resolution in 2014. This updated plan calls for closer connections between people in the watershed and the river's resources. The policies focus on:

“The (Patuxent River Policy) plan provides a policy framework for preserving and restoring the river, raising awareness of the river through advocacy, and creating excitement about the multiple opportunities for interaction with the river.”

Maryland Department of Planning

- The replenishment of fish and shellfish resources important to local economies.
- The temperature and hydrology of stormwater runoff, and wetland and terrestrial habitat protection.
- Drinking water supplies.
- Public outreach and education.
- Recreation and public access⁵.

Forested Land

Forest cover is the most natural for Calvert County and is the least polluting land use. Historically forested areas covered the clear majority of Calvert County. Today, forest covers 62,500 acres or 45% of land use in Calvert County (Figure 5-3)

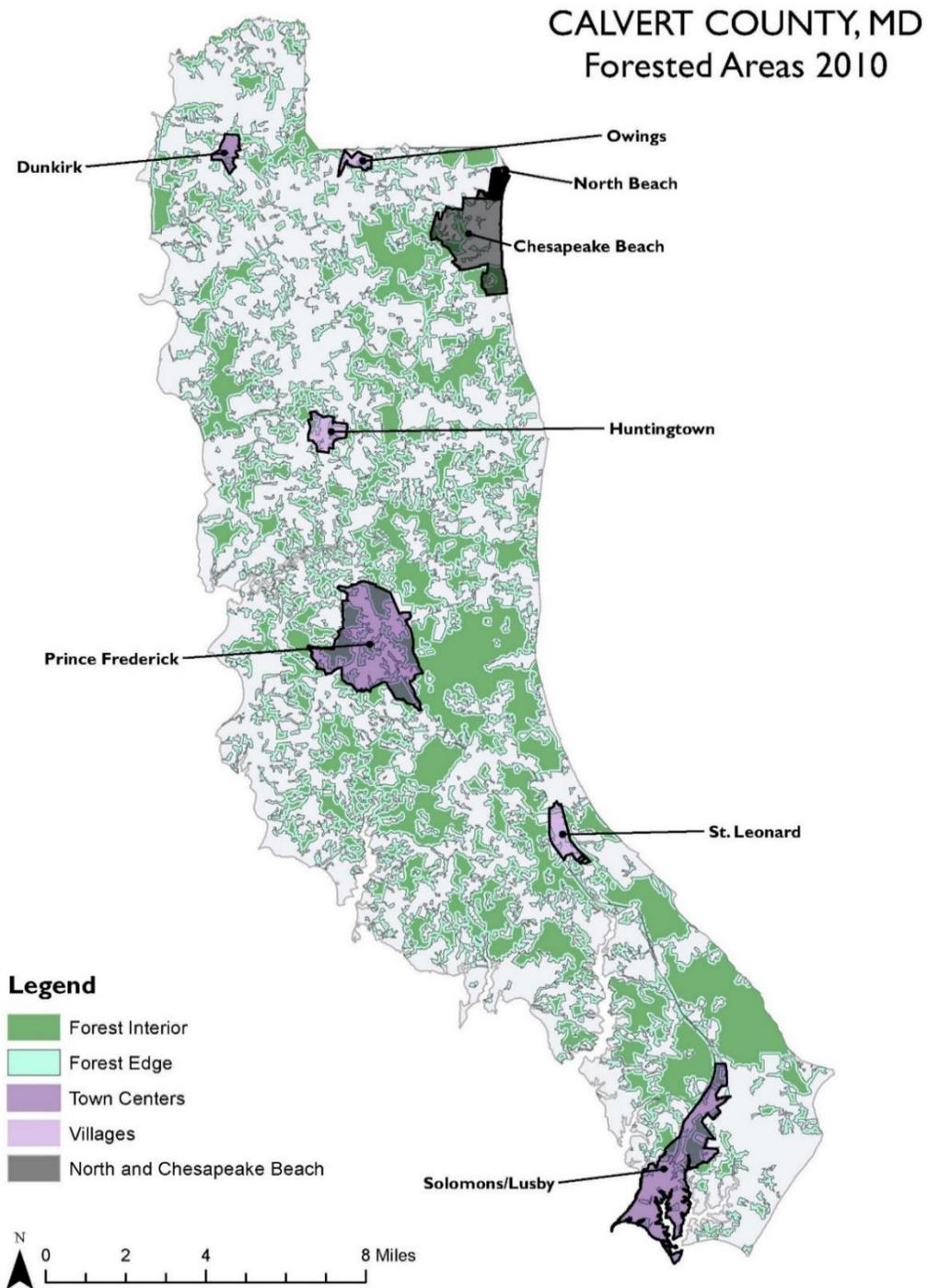
Forest interior (forest more than 300 feet from a forest edge) provides important habitat to many species. Many species of birds can only reproduce in forest interior habitats. These are known as forest interior dwelling birds and some examples include the scarlet tanager, barred owl, pileated woodpecker, and whippoorwill.

Today, forest covers 62,500 acres or 45% of land use in Calvert County. Forest interior represents 40% of forest cover or 18% of Calvert County land area.

Forest interior represents 40% of forest cover or 18% of the county land area. 35% of the estimated forest interior habitat is currently protected and the remaining 65% is threatened by development. Land preservation measures must be pursued to achieve a higher level of protection.

⁵ <http://www.mdp.state.md.us/OurWork/PatuxentRiverCommInfo.shtml> (accessed 7-31-17)

Figure 5-3: Forested Areas Map



Source: Maryland Department of Planning

Forest cover adjacent to streams (riparian forests) is essential to preserving water quality. Forests absorb nitrogen in both surface and shallow groundwater, trap phosphorous-laden sediment, and remove other pollutants resulting from adjacent land uses and from atmospheric deposition. In addition to mitigating pollution, forests provide important wildlife habitat, induce groundwater recharge, and minimize flooding. Riparian forests provide important habitat for wildlife, induce groundwater recharge and minimize flooding. Riparian forests provide organic matter, such as leaf litter, which serves as the basis of the food chain for aquatic species. The riparian forest canopy provides shade, which is critical for moderating stream temperature, and the roots of the trees stabilize stream banks and protect against erosion.

Calvert County has land preservation programs to protect forested areas, including local land trusts, county land trusts, easement programs, Forest Stewardship Program. These have conserved 17,400 acres of forested land.

Air Quality

Calvert County is designated as a Nonattainment Area for 8-Hour Ozone⁶, indicating that it does not meet the EPA's National Ambient Air Quality Standards. Ozone is not directly emitted into the air. It is created by chemical reactions between oxides of nitrogen and volatile organic compounds in the presence of sunlight. Motor vehicle emissions and fossil fuel-burning power plants are significant sources of ground-level ozone air pollution.

Calvert County has been participating in the Metropolitan Washington Air Quality Committee (MWAQC) to address its pollution levels based on the requirements of the federal Clean Air Act.

Emissions from motor vehicle trips originating in Calvert County have been estimated to comprise just over one percent of the regional total in the Washington Metropolitan Area. About 60 percent of the County's workforce commuted to jobs outside of the county in 2010-2015, and most of these trips were by personal vehicle. The average travel time to work for a Calvert County resident was 40 minutes.

Ground level ozone, is not emitted directly into the air, but is created by chemical reactions between oxides of nitrogen (NOx) and volatile organic compounds (VOC). Ozone at ground level is the main ingredient in "smog." Ozone is most likely to reach unhealthy levels on hot sunny days in urban environments. Ozone can also be transported long distances by wind, so even rural areas can experience high ozone levels.

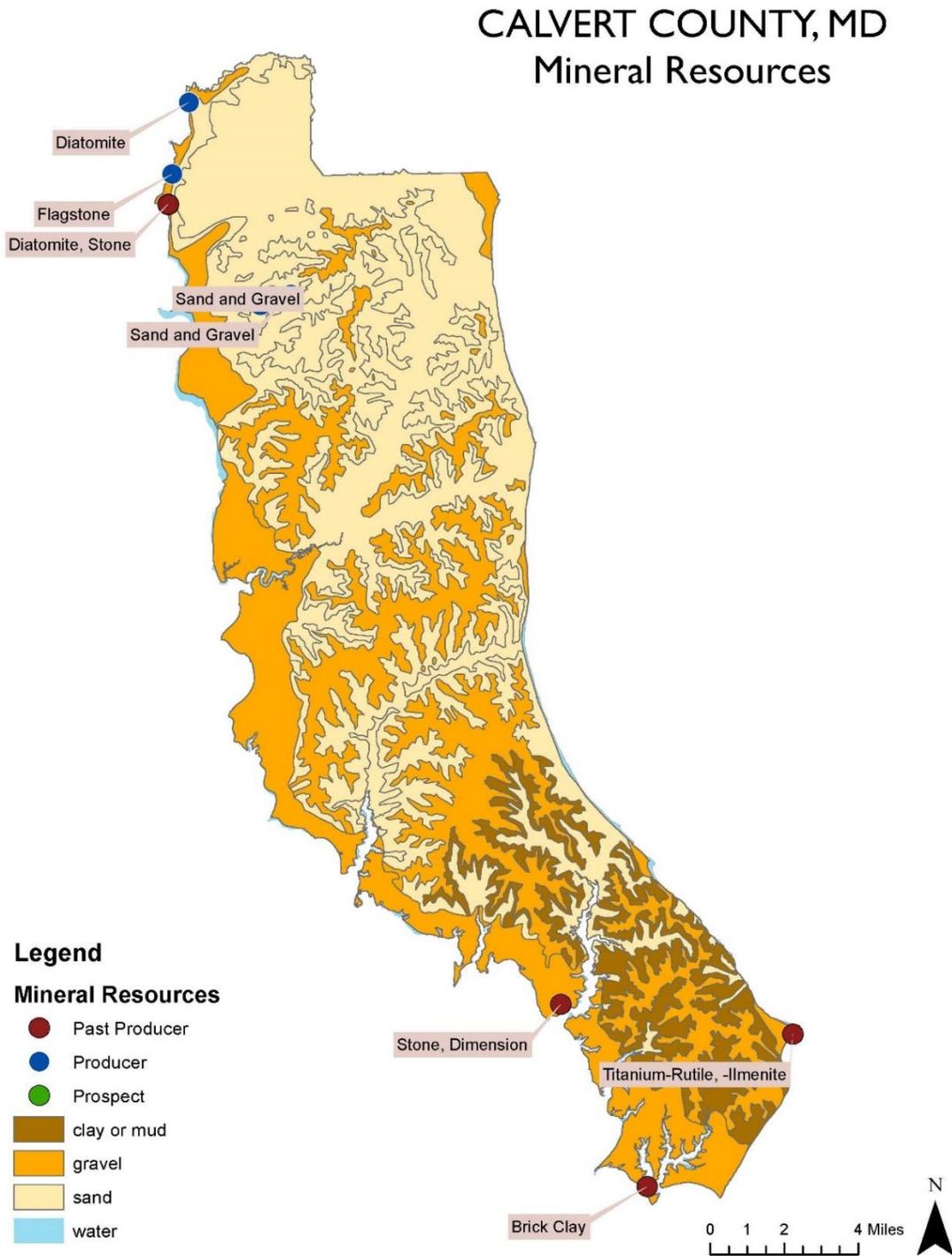
US EPA

⁶ <https://www3.epa.gov/airquality/greenbook/ancl.html>, accessed 7/31/17

Mineral Resources

The primary mineral resources found in Calvert County are sand and gravel, used mainly in the construction industry (Figure 5-4). Most the county's sand and gravel resources are in the northern portion of the peninsula, but supplementary amounts occur in the lowland terraces bordering the Patuxent River. The southern portion of the county has deposits of clay, stone, diatomite, and titanium-rutile, which generally align with the White Sands area and southward to the tip of the county (Figure 5-4). Most of these areas are developed, located on Calvert Cliffs Nuclear Power Plant or the Dominion LNG sites, are school sites and/or are designated as preserved parks. Some of the lands remain undeveloped but are intermixed with the development or preserved lands. Calvert County has a flagstone producer, a diatomite producer, and two sand and gravel producers in operation in the northern portion of the county today.

Figure 5-4: Mineral Resources in Calvert County



Source: USGS

Hazard Mitigation

Hazard mitigation involves reducing the risks of natural hazards and their associated damage to people and property. Calvert County has developed a detailed Hazard Mitigation Plan that addresses the natural hazards that are most likely to affect the county. The Hazard Mitigation Plan, prepared in 2005, is being updated in 2017 to an All-Hazard Mitigation Plan.

Hazard Identification

Thirteen natural hazards have been known to occur in Calvert County and nearby areas. These hazards include coastal/shoreline erosion, dam failure, drought, earthquake, extreme summer heat, flooding, hurricane/tropical storm, landslide, land subsidence, severe storm, tornado, tsunami, and wildfire/urban interface fire.⁷

Vulnerability Assessment and Loss Estimation

The All-Hazard Mitigation Plan includes an assessment of Calvert County’s vulnerability to each of the identified hazards and the potential losses associated with a hazard incident. Hazard risk is ranked High, Medium, or Low based on the expected annualized loss, expected frequency of the hazard, and potential for loss of life.

The hazards with the highest risk in Calvert County are Flooding and Coastal Storm Wind (Figure 5-1).

Table 5-1 Calvert County Hazards

Hazard	Ranking
Flooding	1 (High)
Coastal Storm Wind	2 (High)
Tornado	3 (Moderate)
Severe Thunderstorm	4 (Moderate)
Lightning	5 (Moderate)
Earthquake	6 (Moderate)
Winter Storm	7 (Moderate)
Extreme Temperatures	8 (Low)
Hail	9 (Low)
Drought	10 (Low)

Hazardous Materials

Federal and State regulations control the use and disposal of hazardous wastes. These wastes are not allowed in the county Landfill. Nuclear waste from the Calvert Cliffs Nuclear Power Plant is currently stored onsite because a federal repository is not yet available.

⁷ Hazard Mitigation Plan, Greenhorne & O’Mara, Inc., 2005

Leachate, the liquid that accumulates at the bottom of lined landfills, is considered a hazardous waste and is treated at an appropriate wastewater treatment plant. Currently, the leachate from the Appeal Landfill is treated at the Solomons Wastewater Treatment Plant.

The Cove Point Dominion Liquefied Natural Gas (LNG) Terminal also presents potential hazards associated with combustible gas located at the terminal. A Risk Study performed by the Maryland Power Plant Research Program indicates that the main hazards at the LNG facility include liquid or vapor release, gas dispersion, fires and explosions. However, the total calculated risks to the facility and surrounding residential population are extremely low.⁸

Goals and Objectives

Goal 1: Encourage preservation, protection, and conservation of environmentally sensitive areas.

Objective 1: Preserve and restore wetlands.

- Maintain substantial monetary penalties for the unauthorized destruction of wetlands
- Restore or create wetlands and wetland buffers in areas that will reduce nutrient pollution runoff from farms and developed areas.
- Develop regulations to address existing and future development adjacent to wetlands.
- Revise site planning criteria to encourage use of natural features of a site and discourage disturbance of wetlands and their buffers

Objective 2: Preserve and restore floodplains.

- For development in the floodplain, ensure that construction practices minimize damage to property and the environment during flooding.
- Prohibit the removal of vegetation in the floodplain.
- Consider raising the floodplain protection level.
- Create flood management plans for each identified watershed.

Objective 3: Preserve and restore streams and stream buffers.

- Require and maintain undeveloped buffers that limit development around perennial streams.
- Preserve and restore riparian forests.

Objective 4: Preserve and protect steep slopes.

- Develop regulations to address existing and future development on steep slopes. Limit grading and alterations of natural vegetation on steep slopes.

⁸ Maryland Power Plant Research Program, *Cove Point LNG Terminal Expansion Project Risk Study*, Maryland Power Department of Natural Resources, 2006 (Revised 2010)

- Revise site planning criteria to encourage use of natural features of a site and discourage grading of steep slopes.

Objective 5: Develop methods to protect the habitats of rare, threatened, and endangered species.

- Work with the State to map rare, threatened, and endangered species outside the Critical Areas and develop protective measures.
- Limit shore erosion control measures in areas of Calvert Cliffs that have significant Puritan tiger beetle populations.

Objective 4: Create greenways throughout the County

- Establish greenway systems along stream valleys especially where they connect large tracts of protected agricultural and forest lands.

Goal 2: Continue a comprehensive approach to environmental planning with special emphasis on watershed planning.

Objective 1: Create, adopt and update watershed plans for each major watershed in the county.

Objective 2: Foster greater public awareness, education, and support of environmental concerns.

- Maintain, support, and improve the environmental education programs for school-aged children.
- Develop environmental education programs for adults and families.

Goal 3: Encourage preservation, protection, and conservation of land-based natural resources.

Objective 1: Preserve and restore forestland

- Using the map of the 2010 forested areas map track forest loss and gain.
- Retain 90% of existing forest as of 2010.
- Require replacement of 100% of forest loss since 2010 outside the Critical Area, town centers and villages.
- Expand land preservation programs that protect forested areas (e.g. local land trusts, county land trusts, easement programs, Forest Stewardship Program and Department of Defense programs for the Joint Land Use Area).

Objective 2: Address mobile sources of air pollution.

- Develop infrastructure such as bike lanes to facilitate non-vehicular modes of travel.
- Develop a broadband network to allow more telecommuting and reduce reliance on commuting.
- Encourage land use strategies that reduce the need for daily trips and miles traveled via automobile.

Objective 3: Provide Information to the public regarding mineral resources.

- Require that significant mineral resources be shown on subdivision preliminary plans and on site plans.
- Make state maps of mineral resources in Calvert County available to the public.

Goal 4: Mitigate natural and man-made hazards in Calvert County.

Objective 1: Minimize future losses from disasters by reducing the risk to people and property

- Provide protection of critical facilities/infrastructure vital to disaster response, such as fire and police, and those vital to the continuous operations of the county, such as hospitals and health care facilities, water and sewer facilities, electrical and other utility, and transportation systems.

Objective 2: Provide continuous education and training.

- Continue to develop and support disaster preparedness education and awareness programs, targeting specific benefits to residents, visitors, businesses, and elected officials.
- Develop outreach programs, such as online resources, seminars, and festivals with public and private partners.
- Educate the public on higher standards of protection to structures and facilities from hazards.
- Identify and seek multiple funding sources that will support hazard mitigation awareness and training programs.

Objective 3: Emphasize pre-disaster retrofitting and post-disaster planning.

- Identify vulnerable critical facilities and infrastructure.
- Promote disaster mitigation features in new building construction and retrofit existing structures.
- Continue to develop economic incentive programs for both public and private sectors to promote structural retrofitting.
- Develop and support public and private projects and programs to retrofit, relocate, or acquire properties susceptible to repetitive flooding.

CHAPTER 6. HOUSING

Vision

Our Town Centers are attractive, convenient, and interesting places to live, work and shop.

Goals

Goal 1: Provide for full range of housing types in Town Centers to attract and retain multi-generational communities.

Goal 2: Encourage walkable, mixed use communities in Town Centers.

Goal 3: Provide programs to increase housing affordability.

Goal 4: Support aging in place through universal house design housing units and supportive services, especially near health and support services.

State Vision

This chapter supports the Maryland State Visions related to:

Growth Areas. Growth is concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers.

Community Design. Compact, mixed-use, walkable design consistent with existing community character and located near available or planned transit options is encouraged to ensure efficient use of land and transportation resources and preservation and enhancement of natural systems, open spaces, recreational areas, and historical, cultural, and archeological resources.

Related County Plans (incorporated by reference)

Master Plans – Individual master plans for the Town Centers and Villages.

Background

For many people, Calvert County represents the "American Dream" — home ownership in safe and attractive residential communities. On average, between 2010 and 2014, 81 percent of all occupied homes in the county were owned by the occupant, and almost half of the houses have been built since 1990. Two major concerns need to be addressed:

- Most housing is out of reach for low-income families and for young adults.
- Most of the County's housing stock is not designed to allow older residents to remain in the home when they are no longer able care for large homes and lots or no longer able to live independently.

Existing Conditions

The number of housing units in Calvert County almost doubled between 1990 and 2010, but since that time the total number of units has changed very little as shown in Table 6-1 Total Housing Units in Calvert County, 1990-2015 Calvert County's housing stock is predominately single family, although the percentage of multi-family units has increased slightly in recent years, as shown in Table 6-2.

Table 6-1 Total Housing Units in Calvert County, 1990-2015

Years	Total Housing Units
1990	18,974
2000	27,576
2010	33,780
2011	34,007
2012	34,184
2013	34,416
2014	34,595
2015	34,766

Source: US Census

Table 6-2 Units per Residential Structure in Calvert County, 2005-2014

	2005 to 2009 Average	2010 to 2014 Average	Percent Change
1 unit structures	95.2%	93.8%	-1.4%
2 or more unit structures	4.3%	5.3%	1.0%
Mobile homes and all other types of units	0.5%	0.9%	0.4%

Source: U.S. Census American Community Survey

Housing Values and Affordability

The median value of Calvert County housing has decreased over the past 10 years, but remains higher than the median value in Charles and St. Mary's counties. Calvert County's median value has slowly declined from its 2007 peak at \$425,000 to a low of \$328,000 in 2012. All of the Southern Maryland counties had rising housing values until the recession in 2007 at which point all three counties started to decline. Between 2012 and 2014, Calvert County saw the greatest increase in median housing values of the three. It increased to \$340,000 in 2014, while St. Mary's and Charles have remained just under \$300,000.

While Calvert County has the highest median housing values in Southern Maryland, it also has the highest number of people that spend more than 30 percent of household income on housing. A quarter of mortgage holders and over 40 percent of renters in Calvert County pay more than 35 percent of their household income toward housing.

Effects of Land Use Patterns

The county's pattern of development is dispersed, in that the houses are located throughout the countryside at low densities. When houses are located away from services and public transportation, families are more automobile-dependent. Each worker in a family needs a vehicle. According to national studies, the average family spends \$8,700¹ per year in automobile payments and operating and maintenance costs. Each \$1,000 that could be reduced from automobile expenses would cover the monthly payments on \$10,000 of a house loan.

Proximity to jobs, services, and public transportation could reduce automotive costs. Development of walkable and bikeable mixed use Town Centers that provide a wide range of housing types help to reduce transportation costs. Policies that allow home occupations and permit residents to operate small scale start-up business services and offices out of their homes can reduce work-related travel and promote local entrepreneurs.

The county's pattern of development also isolates residents from recreational opportunities. Public transportation is limited, and many people are too far from conveniences to walk or bicycle, and many old roads have no shoulders.

Housing for Seniors

In 1990, 12% of the county's population was over 60 years of age. By 2010 that number had increased to 16% of the total county population, and by 2030, the population over age 60 is projected to comprise 30% of the total.

¹ AAA 2015 *Your Driving Costs*

In 2012 the AARP, reached some interesting conclusions about seniors and their expectations about their living circumstances and communities:

- Approximately 90 percent of senior intend to continue living in the current homes for the next 5 to 10 years.
- Although 65 percent of American between the age of 60 and 70 find it easy to live independently, among those 70 and older, on 43 percent find it very easy.
- Almost 20 percent of Americans aged 70 or older say they cannot live independently.
- More than 25 percent of senior in their 60s are not confident their communities will have the resources they need to lead a healthy and independent life.
- One in ten seniors have moved in the past ten years to make maintenance easier, that figure increases to 15 percent for those aged 65 to 69. ²

The county's pattern of development is not conducive for the aging to remain in their homes. As people age their interest in living near a grocery store, a drug store, a doctor's office, and a hospital increases. Proximity to such services becomes even more important for those who are not able to drive.

There are several options to accommodate seniors as they age in Calvert County:

- Encourage a range of housing options, including senior and co-housing, in the Town Centers.
- Construct senior housing complexes with services provided.
- Encourage universal design in housing units, subdivisions, and multi-family projects.
- Provide services to support seniors who are aging in place in their own homes.
- Accommodate assisted living and nursing home facilities in a variety of settings around the county.

Goals and Objectives

Goal 1: Provide for full range of housing types in Town Centers to attract and retain multi-generational communities.

Objective 1: Facilitate the development of a variety of housing types in Town Centers

- Allow accessory dwelling units in single family houses in most residential areas.
- Continue to allow small clusters of multiple dwelling units (with the appearance of a single dwelling unit) in Town Centers in accordance with the Town Center master plans.

Goal 2: Encourage walkable, mixed use communities in Town Centers.

Objective 1: Accommodate residential uses in areas that are traditionally commercial in character.

- Allow residential uses in a mixed-use building in the Town Centers and Villages.

² 2012 United States of Aging Survey, AARP

- Explore the potential to incorporate multi-family housing into commercial areas to bring uses closer together, reduce impervious surfaces, and allow for redevelopment and infill housing.

Objective 2: Encourage location of small-scale personal service activities within a walkable distance of residential uses.

- Accommodate home occupations at an appropriate scale in residential areas.
- Consider allowing small retail and service uses on the first floor of residential structures along major roads.

Goal 3: Provide programs to increase housing affordability.

Objective 1: Support programs that increase the availability of affordable units.

- Encourage public/private partnerships and/or developer-nonprofit partnerships for the development of affordable housing, elderly housing, or upgrading of substandard housing.
- Avoid concentrating subsidized housing. Facilitate affordable housing in all areas.
- Continue partnerships in support of funding for public/private housing to be used for low-interest loans or grants for affordable housing.

Objective 2: Increase financial education opportunities that support home ownership.

- Encourage training seminars to show how to manage finances to own or rent housing.

Goal 4: Support aging in place through universal design housing units and supportive services, especially near health and support services.

Objective 1: Support aging in place through universal design.

- Encourage the use of universal design principles in the housing units and communities.
- Reduce parking requirements for housing to serve the disabled and seniors when reliable alternative transportation options are available to residents.
- Provide opportunities to retrofit existing homes to incorporate universal design features so that seniors and the disabled can remain in communities longer, if they so choose.

Objective 2: Locate senior housing near health and other support services.

- Continue to encourage age-restricted (senior or 55+) housing in Town Centers by reducing the full requirements of the Adequate Public Facilities requirements for schools, school excise taxes, and/or the use of Transferable Development Rights to increase allowable density.
- Develop incentives for assisted living facilities and nursing homes to be constructed in Town Centers.

CHAPTER 7. Transportation

Vision

Our highways are safe with only moderate congestion and transit is readily available. Walking and bicycling are practical alternatives within and in close proximity of Town Centers.

Goals

Goal 1: Provide a safe and reliable transportation system that complements the overall development of the county and balances use by pedestrians, bicyclists, motorists, and bus riders.

Goal 2: Maintain MD 4 and MD 2/4 as the main transportation corridor, providing for safe and efficient travel.

Goal 3: Maintain and improve the arterial and non-arterial road systems to provide for safe and efficient travel.

Goal 4: Improve and expand existing public transit services.

Goal 5: Promote transportation alternatives such as carpools, vanpools, bicycling, and walking.

Goal 6: Continue a countywide transportation planning program that is integrated with state and regional planning programs.

State Vision

This chapter supports the Maryland State Visions related to:

Transportation. A well-maintained, multimodal transportation system facilitates the safe, convenient, affordable, and efficient movement of people, goods, and services within and between population and business centers.

Related County Plans

Calvert County Public Transportation Transit Development Plan 2016 –This plan guides public transportation improvements for the short, mid, and long-term and addresses routes.

A Transportation Plan for Calvert County 2010 – this plan was adopted in 1997 and updated in 2010. It identifies priorities and recommendations on specific improvements

Background

The transportation network in Calvert County is a function of the county's shape and topography. Because the peninsula is narrow and carved with stream valleys that run east-west, there is limited space for multiple north-south routes. MD 2/4 is the only major highway that extends for the full length of the county, and at the headwaters of St. Leonard Creek, it is the only road linking the southern end of the county to the rest of the county. Whether commuting out of the county or traveling within the county to Prince Frederick and the other locations, the majority of residents travel by car on MD 4 and MD 2/4 at some point. The county's dependence on travel along the MD 4 and MD 2/4 corridor is at the center of the concerns related to transportation.

To provide a transportation system that moves people and goods to, from, and through the community in a way that is safe, convenient, economical, and consistent with the community's historic, scenic, and natural resources, the emphasis is on addressing traffic delays, pedestrian amenities, bicycle facilities, and transit service. A transportation system's success necessarily depends upon the settlement pattern. Calvert County's geography and development patterns have created an automobile-dependent community. The county is situated within the southeastern portion of the larger Washington, D.C. metropolitan area. According to the U.S. Census Bureau, approximately 60% of residents commute out of the county for work. This large percentage of county residents who commute out of the county for work, and the long duration of their commutes creates a situation where the residents spend considerable time on the roads. Integrating land use activities that complement daily life - parks, shopping, social and institutional centers - into the pattern of residential living, can result in shorter and fewer local automobile trips.

Trends in Transportation

In the long term, the advent of connected and autonomous vehicles is generally anticipated to affect driving patterns in several ways. Commuters may choose to send their cars home or to satellite parking locations rather than paying for daily parking in center cities, like Washington, D.C. This practice would double the number of daily work trips for some cars. Also, these vehicles with their enhanced safety features may encourage individuals who are not drivers or who do not drive frequently to travel more often and further distances than they might in less-sophisticated cars.

Beyond auto traffic, increasing numbers of travelers are opting to walk and to bicycle for short daily trips. Communities which provide safe and attractive facilities attract residents and businesses interested in healthier and more affordable travel options. The county's residents need to travel throughout the county and within their communities, using a variety of modes, with greater ease. Improving conditions for bicyclists and pedestrians and expanding transit service are becoming more important.

Calvert County's geography limits accessibility and presents challenges to the creation of a robust internal transportation network. There is only one highway crossing to the west into Charles County, MD 231 Benedict Bridge, and one to the south into St. Mary's County, MD 4, Thomas Johnson Bridge,

which the Maryland State Highway Administration (SHA) is studying for replacement and widening. There are no highway connections to the east across the Chesapeake Bay.

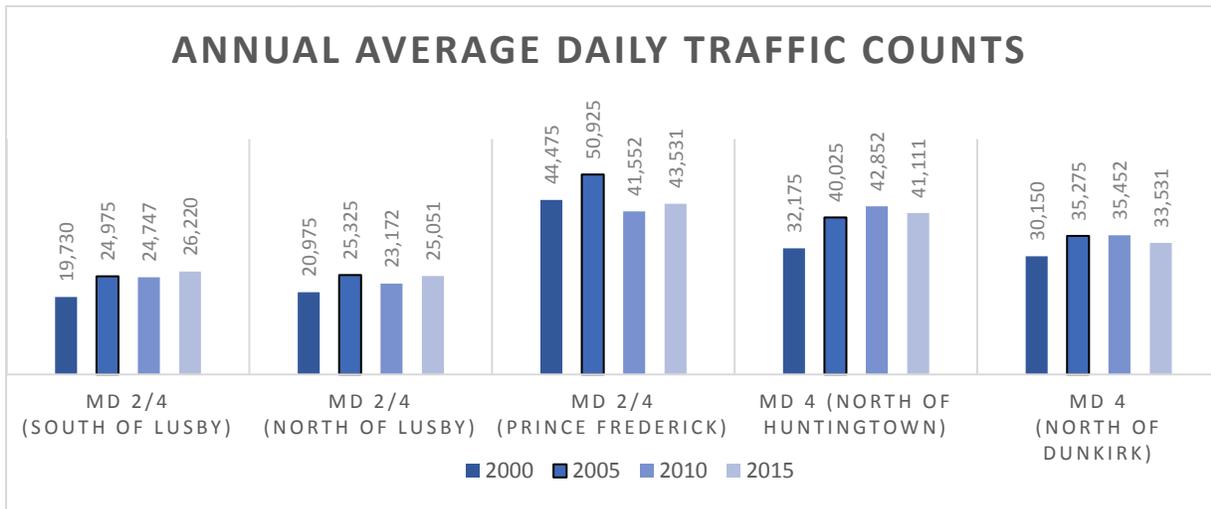
Traffic Congestion in Calvert County

Congestion caused by commuters typically occurs during weekday peak travel periods and is known as recurring congestion. SHA’s Traffic Volume Maps by County shows that the highest traffic volumes in Calvert County are carried on MD 4-MD 2/4, particularly through Prince Frederick. In general the highways in the county are operating at level of service acceptable to the SHA, however residents experience peak period congestion at the traffic signals located at some key intersections along MD 2/4, especially those at the north end of Prince Frederick.

The increases in traffic volume during the years of rapid growth still affect the perception of traffic volume changes that Calvert County residents report today. The county has not seen increasing levels of traffic along the primary county arterial road in recent years.

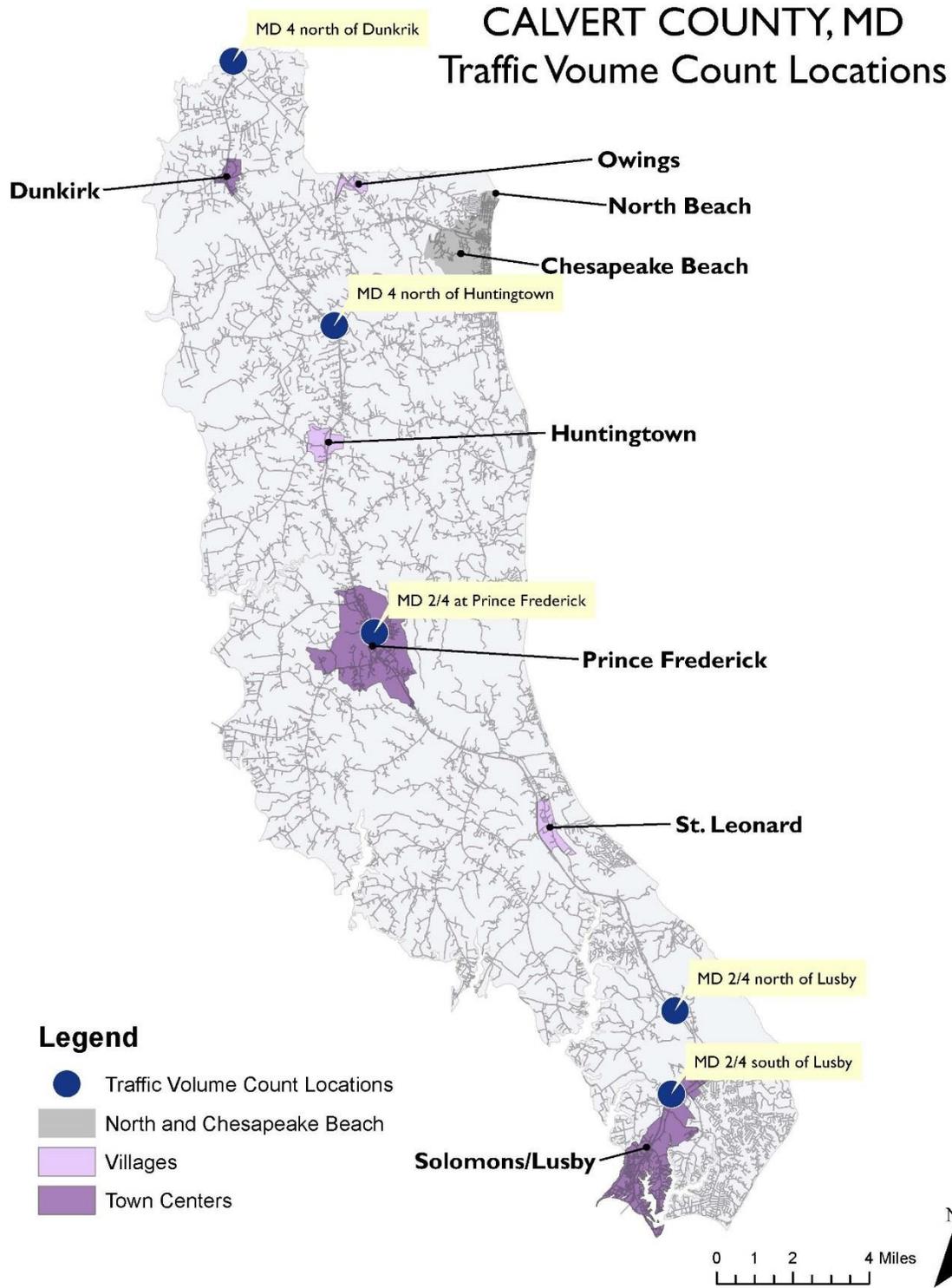
Table 7-1 and Figure 7-1: Annual Average Traffic Count Locations show annual average daily traffic (AADT) at five points along MD 4 and 2/4 from 2000-2015. Aside from one sharp increase in 2005 at MD 2/4 in Prince Frederick, traffic volumes have been stable. The higher counts are in the middle of the county and moving to the north; the south has significantly lower traffic volumes than the rest of the county, but has seen the most consistent growth in volumes over time. The highway system is presently operating well. While some delay at signalized intersections in Prince Frederick is experienced during the peak travel periods, all arterial and collector roads are operating at acceptable levels of service.

Table 7-1 Annual Average Daily Traffic Count



Source: State Highway Administration, Traffic Volume Maps by County

Figure 7-1: Annual Average Traffic Count Locations



Highway System

Functional Classification

Functional classification is an important principle underlying transportation planning as well as land use planning in the county. It defines the type of service which any road should provide. The county currently recognizes three functional classes of roads: arterial, collector, and land access (local roads). All roads provide some mixture of mobility and accessibility. Mobility, the movement of through traffic, is primary needed for the arterial roads and larger collector roads. Accessibility, the connection to immediate property, is needed for smaller collector roads and local roads.

- Arterial highways function primarily to convey heavy volumes of traffic within and through an area, providing a high degree of mobility and limited land access. Arterials should form an integrated system and serve area-wide travel patterns. Direct access onto arterials should be restricted.
- Collector highways function to collect traffic from local roads and to convey that traffic to arterial highways. Direct access onto collectors must be balanced against the role of collectors in providing mobility.
- Land access roads, also known as local roads, function to provide access directly to abutting property. These serve residential subdivisions as well as the least densely populated areas of the county.

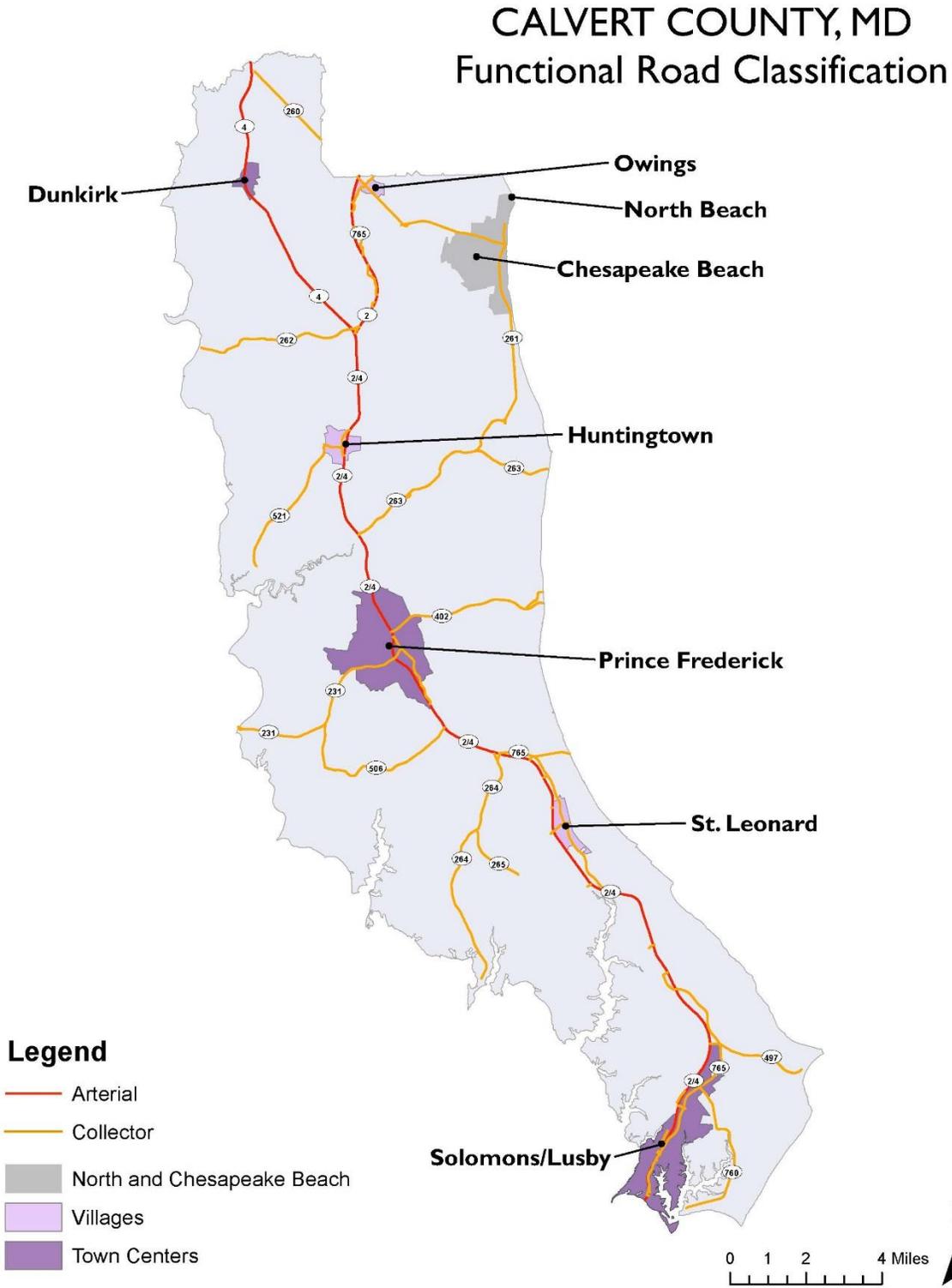
The functional classification of highways in Calvert County, shown in Figure 7-2, is created through a comparative evaluation of four major factors: traffic, physical characteristics, system integration, and land use services.

MD 4 and MD 2/4

MD 4 – MD 2/ carry the heaviest volumes of traffic, and serve inter-county travel. The county considers the gradual conversion of MD 4 and MD 2/4 into a controlled through access expressway as key to resolving future traffic congestion. Making that conversion requires primarily five efforts:

- New driveway access points to MD 4 and MD 2/4 are not preferred by the county and the Maryland State Highway Administration.
- New roadway access is coordinated and the rights-of-way of future service roads and overpasses are reserved.
- Purchase of right-of-way for new overpasses along MD 4 and MD 2/4.
- New traffic signals are minimized through intelligent transportation systems (ITS) and land use planning solutions.
- Appropriate highway construction is completed including intersection improvements, the upgrade of the older sections of MD 4 and MD 2/4 that were retained when the highway was dualized, and the addition of acceleration and deceleration lanes and shoulders, where needed.

Figure 7-2: Functional Road Classification



Arterial

Arterial highways such as MD 231 and MD 260 serve fast and heavy traffic between subdivisions and urban centers. Direct access to property along arterial highway should be managed so that overall highway capacity can be preserved for through traffic.

Arterials should be designed and located to provide fast and convenient travel, to support necessary economic development, and to provide a framework for planned land use development. To ensure that the arterial system functions properly, its physical and operational characteristics must be understood.

Collector

Collector roads are highways and roads serving trips of shorter length, linking residential and agricultural areas to the arterial network. These roads, which are generally county-owned and maintained, collect traffic from local roads and convey it to the arterial highways. In town centers collector, and local roads provide for local circulation and access to businesses.

Local Roads

Local roads, such as subdivision streets, provide the accessibility to the residential areas of the county. They provide the shortest trips and are designed for within county movement. Providing connectivity among local roads is crucial in and around the Town Centers and Villages.

A complex network of roads was not needed in Calvert County given its agricultural nature and reliance on water transportation from its founding through the 19th century.¹ Many of the roads in rural areas of Calvert County developed as farm to market or farm to wharf routes. These roads did not carry heavy traffic volumes.

In rural areas, it is important to provide safe roads; however, conventional roadway design can alter the character of the community and promote higher speeds. Preserving the look and limiting the capacity of rural roads helps to maintain the rural character of Calvert County and avoids the higher costs that result when roads are over-designed.

Over designing rural roads is costly and often makes rural lands more accessible to residential development. Roads that serve rural and natural areas generally have lower traffic volumes and do not warrant the same design improvements required of those serving growth areas. By coordinating road improvements with land development goals, the county can keep its road construction costs lower and support new growth where it is expected.

Transit

Good transportation planning requires that highway and transit facilities be planned together. Highway capacity can be optimized when a highly accessible and efficient transit system is in place. The county operates two levels of local transit service. A fixed route service serves Town Centers and Villages. The

¹ Calvert County Historic Roads Survey, Environmental Resources Management, 2009, Page 6.

fixed-route system addresses two types of movements: within Town Centers and between Town Centers and Villages.

Commuter transit is provided by the Maryland Transit Administration (MTA) over two Route Four Flyer bus routes that serve Washington, D.C. While transit riders represent only a small proportion of total county commuters, the commuter buses are typically filled to capacity. Depending on the route, there are between five and 13 trips a day. The bus routes originate in St. Leonard, North Beach, Dunkirk, Huntingtown, and Prince Frederick. The southern part of the county is not served by the commuter bus routes.

Possible Future Transit

An overall framework for public transit service should continue to be implemented by Calvert County. This framework calls for the creation of local transit service areas in the Town Centers and for express bus service between those centers. In addition to providing access to jobs, increasing access to healthcare services need to be considered for the county large senior population. Reliable alternative transportation options are needed for the disabled and seniors on the county. Calvert County has just completed its five-year Transportation Development Plan and identified numerous service enhancements. The county is working with the MTA to secure funding to implement these service changes.

Calvert County and MTA should continue to cooperate to expand transit service to other areas where high concentrations of jobs are located, such as Lexington Park and Charlotte Hall in St. Mary's County.

Ferry service is a form of transit with potential for Calvert County, especially as the southern part of the county becomes more economically integrated with Lexington Park. The potential must be kept viable. Any ferry service should be properly planned and integrated into the overall transportation system and land use pattern.

Rapid transit is intended to facilitate fast movement along heavily traveled corridors. Rapid transit can be provided by commuter rail, light rail, and by buses operating in exclusive rights-of way. This condition is not likely in Calvert County. The rail options require high urban population densities to justify their costs and to operate successfully.

Pedestrian and Bicycle Network

Currently there are few connected trails for bicyclists or pedestrians to use, either for recreation or for transportation between developed areas. Providing these connections is challenging because of east-west stream valleys cutting through the county on either side of the ridgeline that MD 2/4 follows. The volume and speed of vehicles, and in some instances, the lack of shoulders are impediments to pedestrian and bicycle travel. In addition, where the highways bisect developed areas, the lack of signalized pedestrian crossings discourages people from walking. While there are sidewalks, they are limited and not fully connected even in developed areas. The lack of pedestrian and bicycle facilities fosters reliance on automobiles and does not provide alternatives to auto travel.

By 2040, the county intends to create safe and attractive paths that allow pedestrians and bicyclists to get anywhere within Town Centers and that connect the Town Centers and Villages to the rural land and the water's edge. New streets and retrofits of existing roads should be encouraged to incorporate bicycle facilities and generous pedestrian facilities.

Complete Streets and Streetscape Improvements

Complete streets are defined by those that offer balanced use to all modes of transportation. Complete streets enable safe access for all users including pedestrian and bicyclists as well as motorists and transit riders of all ages and abilities. Complete streets consider the needs of the motorists but do not exclude the need of the other used like pedestrians, transit users, bicyclists, and commercial and emergency vehicles. The typical cross-sections for each road classification should address the manners in which various modes of transportation are accommodated based upon the road classification and the surrounding land use.

Streetscape features should be used to establish the character of Town Centers, Villages, and Residential Areas. Adding street trees, street furniture, and sidewalks along roadways and a planted median in the center improves the driving and pedestrian experiences.

Traffic calming measures such as roadway narrowing, raised and colored intersections, street chokers (also called neckdowns), and traffic circles would improve pedestrian conditions within Town Centers. These features reduce the speed of cars and increase alertness of motorists to enhance the environment for non-motorists.

Residential Area and Town Center Transportation Networks

Most shopping, medical, and personal business trips in the county will be destined for Town Centers while most households, even in the future, will be located beyond the borders of Town Centers in a low-density pattern.

Each Town Center master plans proposes road construction projects. In most cases, implementation of these projects would help manage access onto MD 4 and MD 2/4 and provide a framework for higher density residential commercial development. In some cases, these improvements are needed to resolve existing traffic congestion. Because most subdivisions in Calvert County do not interconnect, even short trips require the use of major arterials, contributing to the overload of MD 2/4. Connecting the current roads parallel to MD 2/4 into a complete roadway network that extends the length of MD 2/4 through each of the Town Centers would allow circulation between parcels without the need for additional access points on the through highway.

Additional improvements are needed to limit the increase in reliance on cars and to develop a more balanced transportation system. Future road construction in the Town Centers should maximize connectivity within each and with the surrounding residential areas. Increasing connectivity promotes activity within the Town Centers and reduces the need to drive for those residents closest to Town

Centers. Town Centers need to facilitate walking, bicycling, and transit use. Community design guidelines with these and similar aims should be developed in the revised Town Center master plans.

New land development should be designed to minimize the number of automobile trips. The county should establish road and sidewalk/path connectivity requirements based on block length in designated areas and for residential and commercial subdivisions above a certain size to help reduce traffic congestion and improve walkability, especially in Town Centers.

Transportation System Management

Financing road improvements is a challenge. The county studied options for raising revenue for new road construction and has opted to use a combination of excise tax revenues from new development, the sale of bonds, and general fund revenues. Road maintenance is also costly. The county relies on the general fund supplemented by a small amount of gasoline tax revenues, which are transferred from the state to the county.

A Transportation System Management (TSM) program is aimed at making the most efficient use of existing roads, highways, and transit services without constructing additional highway capacity. Several measures fall under the TSM heading, including access control and management, intelligent transportation systems, traffic management, and travel demand management. Each had the potential to improve traffic flow and safety and reduce fuel consumption and air pollution and reduce cost on new construction.

TSM measures with potential in Calvert County include:

- Intelligent transportation systems features such as smart traffic signals and transit system priority that take advantage of the emerging capabilities of connected vehicles.
- Traffic engineering techniques such as traffic signal synchronization, the proper placement of driveways, and exclusive turning lanes and roundabouts at intersections.
- The promotion and marketing of area-wide transit, carpools, and vanpools including expanded carpool lots.
- Town Center and community land use planning and site design aimed at minimizing the need for travel by car.

The MPO

Based on the 2010 Census, the U.S. Department of Transportation, Federal Highway Administration has determined that the combination of the Lexington Park area in St. Mary's County with the Solomons/ Lusby/ Chesapeake Ranch Estates/ Drum Point area in Calvert County meets the population criteria for a Metropolitan Planning Organization (MPO). The Calvert-St. Mary's MPO is a federally-mandated and funded organization tasked with planning an integrated regional transportation system between the two counties.

The MPO prepares and maintains several documents including:

- The Long Range Transportation Plan (LRTP) that develops and updates the long-range transportation goals for the region.
- The Unified Planning Work Program (UPWP) that lists planning studies and evaluations underway in a given year.
- A Transportation Improvement Program (TIP) that includes a short-range program of transportation improvements based on the long-range transportation plan. The TIP is designed to achieve the area's goals, using spending, regulating, operating, management, and financial tools.
- The Public Participation Plan (PPP), which is designed to involve all appropriate parties of the community in the transportation planning process and to ensure that the public has adequate opportunity to provide input on the transportation issues affecting the region.

Goals and Objectives

Goal 1: Provide a safe and reliable transportation system that complements the overall development of the county and balances use by pedestrians, bicyclists, motorists, and bus riders.

Objective 1: Develop a transportation system that effectively serves the future land use pattern and helps to implement adopted land use and growth management objectives.

- Achieve a high level of accessibility between residential areas and town centers.
- Give priority to the construction and upgrading of roads that serve Town Centers.

Objective 2: Establish a road connectivity requirement for new developments.

- Establish road and sidewalk/path connectivity requirement based on block length in designated areas and for residential and commercial subdivisions above a certain size to help reduce traffic congestion and improve walkability, especially in Town Centers.

Objective 3: Continue to update and adopt the county transportation plan.

- Construct new roads as called for in the Calvert County Transportation Plan and as identified in the adopted Town Center master plans.
- Continue to update the county transportation plan, including a Transportation System Management element.

Objective 4: Prepare traffic circulation studies and transportation plans as needed for Town Centers.

- Continue to monitor traffic conditions and assess the potential for technological solutions to traffic problems.

Goal 2: Maintain MD 4 and MD 2/4 as the main transportation corridor, providing for safe and efficient travel.

- Reduce existing and discourage future direct property access, especially to MD 4 and MD 2/4.

- Require parallel connecting roads along MD 4 and 2/4 during the development and subdivision process, where feasible, with the long-term goal of having driveways served by connecting roads.
- Continue to develop north-south roadway systems, parallel to MD 2/4 in the Town Centers.
- Continue the program for resurfacing existing roads. Prioritize resurfacing based on traffic counts, structural condition of paving, and skid resistance of existing surfaces.

Goal 3: Maintain and improve the arterial and non-arterial road systems to provide for safe and efficient travel.

Objective 1: Maintain the program to renovate road sections and intersections. This includes widening roads, adding shoulders, removing dangerous curves, replacing bridges, correcting poor sight distance, and adding turning lanes and roundabouts. Prioritize improvements based on traffic counts and proximity and service to Town Centers.

- Address peak-hour congestion on MD 2/4.
- Pursue with SHA the implementation of active traffic management technology to reduce congestion during peak hours
- Improve MD 231 to address safety and reduce congestion.

Objective 2: Complete the network of roads parallel to MD 2/4 in Prince Frederick.

- Include continuous bike and pedestrian facilities along these roadways.
- Encourage businesses locating along these roads to have a public entrance facing them.

Goal 4: Improve and expand existing transit services.

Objective 1: Increase the frequency of local transit service between Town Centers and Villages, including employment areas and health centers.

- Explore the demand among local employer and workers for buses commuting to take employees to and from work places. Develop routes likely to encourage transit access for employees, patients and students from throughout the county.
- Review the routes serving Town Centers to include stops at employment centers, consider extending transit hours to serve employees within the Town Centers and adjacent areas.
- Review routes connecting major subdivisions to Town Centers.

Objective 2: Designate new park and ride locations and key commuter transit routes, when needed.

- Provide adequate commuter parking lots at key locations throughout the county.
- Encourage the shared use of parking lots, especially in town centers as part of coordinated land development plans. Such commuter lots may become future transit stations.
- Continue to encourage the state to provide expanded commuter bus service.

Objective 3: Expand and improve demand-responsive transit services.

- Increase availability of demand-response public transportation.

Goal 5: Promote transportation alternatives such as carpools, vanpools, bicycling, and walking.

Objective 1: Develop a countywide policy for building and maintaining sidewalks and bicycle ways at the time of new road construction.

- As state and county roads are improved or upgraded, ensure the roads include sidewalks and bikeways; where feasible, construct a bikeway, which is to be a shared-use path, separate from the roadway.
- Continue to retrofit existing roads with sidewalks connecting communities within the residential areas of Town Centers by an internal network of sidewalks and roads.
- Provide safe pedestrian and bicycle routes to all public schools.
- Provide designated crosswalks at all intersections except where the designation would create a safety hazard.
- Review site plans for commercial, business and employment uses to ensure safe pedestrian movements.

Objective 2: Establish bicycle routes to connect residential, commercial, employment, educational, and open spaces areas feasible.

- Develop a local bicycle system plan for each Town Center.
- Designate key bike routes connecting Town Centers and Villages.
- Establish priorities for the creation of designated bikeways along the state highways operating from east to west and connecting Town Centers including MD 231, MD 261, MD 262, MD 263, MD 264, MD 265, MD 402, MD 497, and MD 760.
- Provide wayfinding on designated bike routes.
- Look for ways to encourage the use of bicycles, including providing bicycle parking and/or storage facilities at public buildings and encouraging it in shopping and employment areas.
- Improve bicycle safety and accommodations, especially in Town Centers and Villages.
- Encourage the construction of the bikeway/shared-used path as properties develop.
- Address bicycle and pedestrian accommodations in each Town Center and Village master plan.

Objective 3: Develop a complete streets policy applicable within Town Centers and Villages.

- Install traffic calming measures in select locations in Town Centers
- Promote multiple modes of transportation to reduce dependence on automobiles within Town Centers, and connect Town Centers with adjacent communities through the encouraged use of walking and biking routes.
- Establish bicycle parking requirements for commercial, employment, and institutional uses in Town Centers and Employment areas.
- Pursue pedestrian safety and traffic capacity improvements within Town Centers.
- Encourage the installation sidewalks along both sides of all streets in Town Centers.

- Install pedestrian crossing signals connected to safe pedestrian networks at signalized intersections within Town Centers and Villages.
- Map and implement continuous, ADA compliant sidewalks and pedestrian facilities in each Town Center and Village, update small area master plans to include these networks.

Goal 6: Continue a countywide transportation planning program that is integrated with state and regional planning programs.

Objective 1: Develop a sustainable program for financing transportation construction and improvement.

- Develop a funding strategy to expedite the planning and construction of needed projects on the State highway system in Calvert County and for county roads.
- If amendments are made in federal and/or state standards, amend the county road design requirements to allow for safe roads that are not over-designed.

Objective 2: Promote regular updates to the regional, MPO, and county transportation plans based upon and designed to serve the land use development goals of Calvert County and the other units of government in the Southern Maryland region.

CHAPTER 8. ECONOMIC VITALITY

Vision

We are building a strong local economy based on renewable resources, agriculture, seafood, high technology, retirement, recreation, and tourism.

Goals

Goal 1: Strengthen economic opportunity in Calvert County.

Goal 2: Direct business growth to Town Centers and Villages while preserving agricultural land in the Farm and Forest District.

Goal 3: Expand Calvert County's tourism industry.

Goal 4: Strengthen educational opportunities in Calvert County.

State Vision and Plan

This chapter addresses the following Maryland State Visions:

Growth Areas: Growth is concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers.

Infrastructure: Growth areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner.

Economic Development: Economic development and natural resource-based businesses that promote employment opportunities for all income levels within the capacity of the State's natural resources, public services, and public facilities are encouraged.

Related County Plans

2017-2022 Calvert County Economic Development Strategic Plan Update - The Economic Development Strategic Plan Update provides information and recommendations to guide the county's economic development strategies for the next five years.

Background

Historically, Calvert County's local economy relied on agriculture, aquaculture and recreation. Early in the 20th century, tourism and recreation began to play an important role in the county's economy when the Towns of North Beach and Chesapeake Beach were developed. Over the century Solomons and areas along the Patuxent River emerged as attractive places for second homes and boating.

Today, Calvert County's economy is based primarily upon its location within the Washington, D.C. metropolitan area. The county's economy is stable compared to other jurisdictions in Maryland and the nation because of several factors including: 1) a strong local business climate; 2) job market stability; 3) proximity to major employment centers in Washington, D.C. and Virginia; and 4) a strong median household income.

Residents earn above average wages as compared to other Southern Maryland counties and the State of Maryland. Calvert is one of the wealthiest counties in Maryland and the wealthiest in Southern Maryland, in part because of the proximity to federal agency and contracting jobs. However, most of those jobs are in the surrounding counties, and the share of residents commuting out of Calvert County to work has increased in recent decades.

Calvert County is experiencing an increase in commuting from neighboring jurisdictions from 8,900 workers in 2010 to 9600 in 2015. The Dominion Cove Point liquefied natural gas import facility is the most recent addition to a growing local energy sector and private sector jobs grew by 1,510 (9 percent) from 2010 to 2015.

The county aims to continue to strengthen business growth by directing development to Town Centers and Villages, while preserving agricultural land and the county's rural character.

National and Regional Trends

Calvert County is part of the larger Washington, D.C. metropolitan region and is impacted by the conditions across the region. In addition, Calvert competes with other parts of the greater Washington, D.C. area, Baltimore and Annapolis, and within Southern Maryland for jobs, workers, and residents.

Regional Employment Growth

The Metropolitan Washington Council of Governments prepares forecasts of growth in population, housing, and employment for each county in the metropolitan area, including Calvert County. The most recent projections estimated the total employment in Calvert County in 2015 at 34,000, which is projected to increase to 44,300 or 30 percent by 2045. This percentage increase is comparable to the projected growth in the other Maryland counties in the region (Table 8-1).

Table 8-1: Employment Forecasts for Maryland Counties within the Washington Metropolitan Region

JURISDICTION	Thousands							2015 to 2045	
	2015	2020	2025	2030	2035	2040	2045	Number	% Change
Montgomery Co.	520.2	543.5	572.5	604.5	627.4	653.9	678.7	158.5	30.5%
Prince George's Co.	338.6	349.0	366.3	375.7	385.5	393.3	402.1	63.6	18.8%
Calvert Co.	34.0	36.8	39.5	40.9	41.9	43.1	44.3	10.3	30.3%
Charles Co.	46.6	47.0	49.2	52.2	55.4	58.8	61.5	14.9	32.0%
St. Mary's Co.	66.0	70.4	74.3	76.5	79.1	81.8	84.5	18.5	28.0%
Frederick Co.	106.2	110.6	115.6	121.3	127.8	133.9	140.2	34.0	32.0%
	1,045.5	1,087.0	1,143.2	1,194.6	1,237.9	1,283.0	1,326.8	281.3	26.9%

Source: Metropolitan Washington Council of Governments, Round 9.0 Cooperative Forecasts

Economic Base

Local Employment

Calvert County’s local economy is based upon agriculture, tourism, construction, energy production, and local-serving retail and service businesses. Major energy-related activities include Exelon/Calvert Cliffs Nuclear Power Plant and Dominion Cove Point’s liquefied natural gas expansion project. The county’s largest five employers are the Calvert County Public Schools, Calvert County Government, Calvert Memorial Hospital, Exelon/Calvert Cliffs Nuclear Power Plant, and the Arc of Southern Maryland (see Table 8-2). Most of the remaining top ten employers are service and retail businesses.

Table 8- 2: Major Employers - Calvert County (2016)

Rank	Employer	Employees
1	Calvert County Public Schools	2,133
2	Calvert County Government	1,226

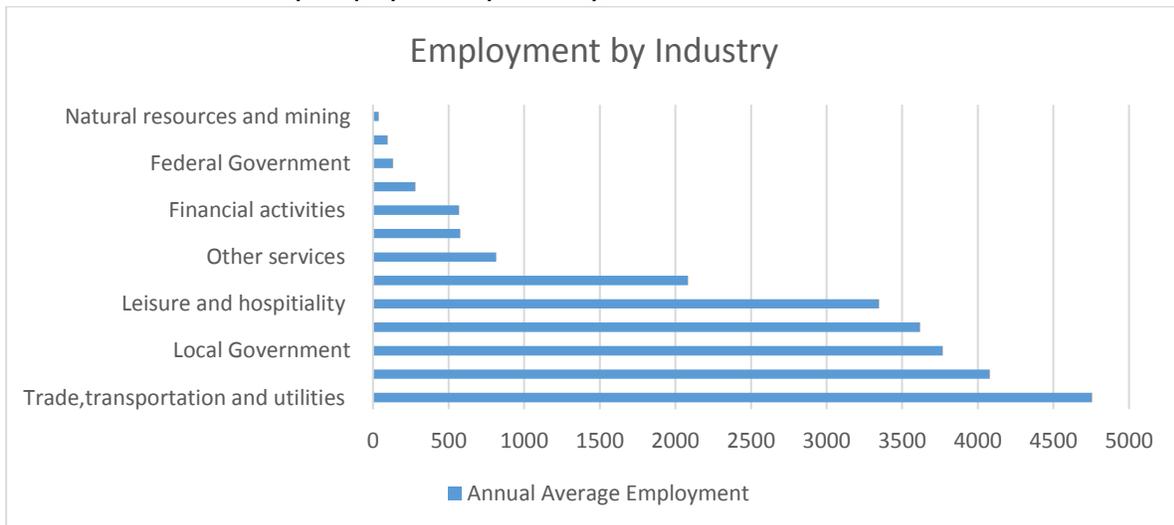
Rank	Employer	Employees
3	Calvert Memorial Hospital	1,200
4	Exelon/Calvert Cliffs Nuclear Power Plant	850
5	The Arc of Southern Maryland	360
6	Asbury Solomons	250
7	Chesapeake Beach Resort & Spa	220
8	DirectMail.com	200
9	Safeway – Prince Frederick	200
10	Calvert County Nursing Center	179

Source: Calvert County Department of Economic Development, 2017

Jobs by Industry

Calvert County’s largest industries are trade, transportation, and utilities (19.7%), construction (16.9%) local government (15.6%) and education and health services (15%), as shown in Table 8-3. The next largest sector in the county is leisure and hospitality (13.5%), indicating tourism’s importance in the local economy. Federal and state government employ just 0.5% and 1.2% of Calvert County residents, respectively.

Table 8-3. Calvert County Employment by Industry, 2016



Note: Includes civilian employment only

Source: Maryland Department of Labor, Licensing and Regulation, Office of Workforce Information and Performance

Commuting

Calvert County’s location within the Washington Metropolitan Area positions it well for commuting to Washington, D.C. and other employment centers within the region. 67.7 percent of the county’s residents commuted out of the county for work in 2014 (U.S. Census Bureau Longitudinal-Employer Household Dynamics Program). While Prince Frederick attracts the highest number of local workers, Washington, D.C. provides the second highest number of jobs to county residents. Residents also commute to Waldorf, St. Mary’s County, Prince George’s County, and Baltimore City.

While most commuters drive alone, Calvert County is served by four commuter bus routes that travel between Calvert County and Washington, D.C., The commuter bus routes originate in St. Leonard, North Beach Town, Dunkirk, Sunderland, and Prince Frederick. The southern part of the county is not served by the commuter bus routes. Table 8-4 shows the changes in commuting patterns from 2005-2014.

Table 8-4: Employment In and Out of Calvert County (Number of People)

	In County	Out of County
2005 to 2009 average	19,315	27,349
2010 to 2014 average	17,899	27,136
	In County	Out of County
2005 to 2009 average	41.4%	58.6%
2010 to 2014 average	39.7%	60.3%

Source: American Community Survey, US Census Bureau, 2014 Five-year Estimates

Tax Base

Real property tax is Calvert County’s largest revenue source, and while the real estate tax base includes residential, commercial, and utility properties, much of the revenue is generated by residential development. Between 2011 and 2016, the county’s residential real property value has experienced a net decrease of \$1.95 billion. This decline is not completely offset by the growth in commercial real property value during the same period.

Residential uses, particularly the single-family detached units common in Calvert County, historically have required more than a dollar in services for each dollar of tax revenue they provide. In contrast, commercial and agricultural uses require considerably less than a dollar in services for each dollar in tax revenue contributed. The recent reduction in housing values has probably made the disparity between revenue collection and cost of services more pronounced for residential uses.

To provide for additional, sustainable revenue sources, to protect the county from the negative revenue effect of residential property devaluation, and to reduce the government’s direct reliance on its residents for revenue, the Board of County Commissioners seek to increase the commercial real property tax base to provide revenue and offset reliance on the residential taxpayer.

Table 8-5: Calvert County, MD: Real Property Assessable Base (\$ Billions), FY2007-FY2016



Source: Calvert County Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2016

Table 8-6: Calvert County Assessable Base, FY2011 v. FY2016

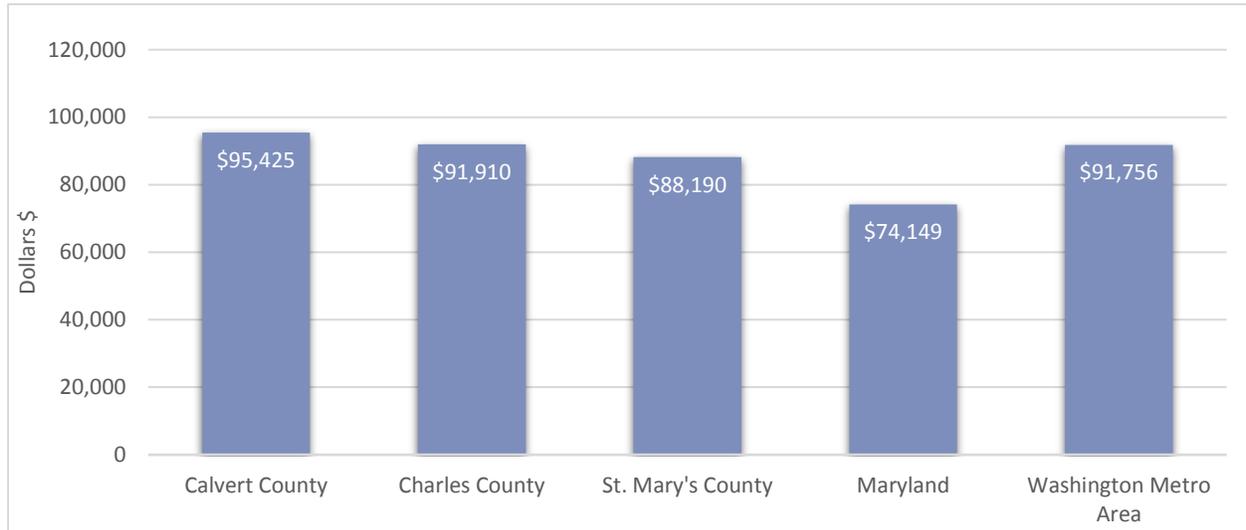
	Assessable Tax Base (\$ Millions)		FY 2011 v. FY2016 (\$ Millions)	
	FY 2011	FY 2016	Net	Percent
Residential Real Property*	\$12,051.74	\$10,096.13	-\$1,955.61	-16.2%
Commercial Real Property*	\$1,260.79	\$1,309.00	\$48.21	3.8%
Public Utility	\$747.96	\$878.73	\$130.78	17.5%
Personal Property (Including Corporations and Banks)	\$126.40	\$127.32	\$0.93	0.7%
Total Assessable Tax Base	\$14,186.88	\$12,411.18	-\$1,775.70	-12.5%

Source: 1. Calvert County Department of Economic Development, "State of the Economy 2014". 2. Calvert County, Board of County Commissioners "Adopted Operating and Capital Budget Fiscal Year 2017 Volume I". 3. Calvert County Department of Finance & Budget, "Calvert County, Maryland Comprehensive Annual Financial Report For the fiscal year ended June 30, 2016". Note: *FY2016 figures are estimates for these categories.

Regional Median Household Income

Calvert County’s residents enjoy an above-average wage when compared to the other Southern Maryland counties as well as the State of Maryland. Based upon income and poverty statistics, Calvert County is one of the wealthiest counties in the state. (See Figure 1.)

Table 8-7: Median Household Income 2014



Source: Income in the Past 12 months (in 2014 Inflation-Adjusted Dollars), American Community Survey 5-Year Estimates, US Census Bureau, 2014

Economic Outlook

Five-Year Strategic Plan

Calvert County’s Economic Development Strategic Plan Update for 2017-2022 establishes economic development priorities for the coming years. The Strategic Plan’s central recommendations include accelerating the development of Town Centers and increasing incentives to agribusinesses.

Economic Opportunities

Based on the county’s list of top employers, new businesses coming to or starting in Calvert County are likely to be small to mid-size businesses with 200 employees or less. New jobs in Calvert County are most often expansions of existing home-based businesses that outgrow their residential locations or small businesses of 10 to 20 employees.

These smaller-scale, idea-based employers are well-suited to locate in Town Centers and Villages. Focusing commercial and employment development in Town Centers is crucial to creating the energy and vibrancy necessary to attract additional businesses. Communities that attract new mid-sized businesses typically offer a variety of housing types and price points, are walkable and attractive and have good schools and recreation opportunities to attract young families and emerging professionals.

Calvert County's Existing Sectors

While most Calvert County's residents commute to jobs outside of the county, the local economy is anchored by agriculture, seafood, health care, retirement, recreation and tourism, renewable resources, and energy businesses and institutions.

Agriculture and Agribusiness

Agriculture is a vital part of Calvert County's economy and a central aspect of the county's rural identity. Agricultural land accounts for 24 percent of the county's land area, including 32,901 acres of farmland according to the 2012 U.S. Census of Agriculture.

- Farms in Calvert County are smaller than the national average; most are less than 180 acres, with an average size of 122 acres. The average farm size in the United States is 442 acres (USDA National Agricultural Statistics Service).
- In fiscal year 2014, agriculture accounted for \$272.5 million, or 2 percent of the total tax base.
- Of the 269 farms reporting in 2012, almost half of the farm operators were full-time operators.
- Over 80 farms were involved in the equine industry.
- Farm operations are shifting from traditional agriculture to specialty agriculture, farm-to-table businesses and agri-tourism.
- The market value of agricultural products sold rose from \$4 million in 2007 to \$11.1 million in 2012: 95 percent was from crop sales and 5 percent was from livestock sales.

Calvert County has four farmers markets that connect residents with local agricultural producers: in Barstow, Prince Frederick, Solomons, and North Beach.

Land use regulations are essential to the preservation of farmland in the county. Residential subdivision development has expanded in Calvert County's rural areas in recent decades, reducing the amount of viable agricultural land and increasing conflicts between farmers and their non-farming neighbors. In addition to traditional agricultural activities, farm operators are turning to agri-tourism and specialty agriculture to develop a niche rural market in the county.

The county also has significant potential to expand tourism-related agribusinesses such as farm-to-table restaurants, breweries, wineries, farmer's markets, and community-supported agriculture (CSA). These activities can create concern among neighbors. The *Calvert County Economic Development Strategic Update, 2017-2022* recommends providing incentives to support the growth of agribusiness. Balancing the needs of these important contributors to the local economy with the expectations of rural residential neighbors is crucial.

Seafood

Fisheries are locations for loading, unloading, and processing finfish and shellfish; docking and mooring commercial fishing boats and vessels. Geographically located to facilitate the commercial harvesting of finfish and shellfish; and ensure reasonable access to the waterways of the State by commercial watermen. The waters of the Patuxent River and the Chesapeake Bay have historically supported a strong seafood industry. Watermen harvest blue crabs, oysters, and many types of finfish; Marine Commercial Districts accommodate businesses that supply and cater to marine activities and needs.

However, seafood production in the county has decreased significantly since the early 1900s with the decline in stocks due to poor water quality, overfishing, and poor fisheries management. The total weight in seafood production for commercial landings has decreased throughout the state of Maryland since 2010. Both the blue crab and oyster populations in the Chesapeake Bay have declined significantly, which negatively affects the county's seafood industry.

Health Care

Health care is a major employer for Calvert County with 3,500 people employed. Calvert Memorial Hospital, a 141-bed acute care facility in the northern end the Prince Frederick Town Center, is the third largest employer in the county with a work force of 1,200. A concentration of medical services has developed around the hospital complex. The county is also home to about 20 assisted living facilities providing a range of care levels. As the county residents continue to age and the regional demand for health care services continues to grow, the sector can be expected to expand. A specialty healthcare industry focus on retirees' specific health concerns would have a strong advantage in Calvert County.

Retirement

Over the past several decades Calvert County has attracted retirees drawn to the area's natural beauty, waterfront location and proximity to Washington, DC. In-migration of retirees creates substantial economic impacts such as increased sales, labor income, and part-time employees. The population of people over 65 increased significantly between 2005 and 2014 and these older residents are increasingly staying in Calvert County. Retiree spending and Medicare spending in the county provide a boost to local businesses and to healthcare providers. Medicare payments to hospitals, doctors, and other medical providers are substantial.

Calvert County is in a strong position to continue attracting retirees, particularly to Town Centers, if those locations provide a range of housing types, access to quality health care, walkable environments that do not require vehicle ownership and activities that entertain and educate.

Energy

Calvert County has two large energy-related facilities that serve as strong employers in the county: Calvert Cliffs Nuclear Power Plant and the Dominion Cove Point Liquefied Natural Gas facility.

Calvert Cliffs Nuclear Power Plant has operates on a 1,500-acre site in in Lusby and is the county's fourth largest employer. Its two units can generate 1,757 net megawatts (MW) of energy per year. Most the plant's 900 employees live in communities in Calvert County.

The Dominion Cove Point Liquefied Natural Gas facility, scheduled to open in late 2017, will provide bi-directional service of import and export of liquefied natural gas (LNG). This LNG export project offers substantial job and tax benefits to Calvert County, with estimated tax revenue to exceed \$40 million annually, in addition to the approximate \$17 million already received. Dominion Cove Point will continue to be a significant employer in the county when it opens for operation.

Payments in Lieu of Taxes (PILOTs) from the county's energy industries are a large component of the county's revenues. The Exelon/Calvert Cliffs Nuclear Power Plant provides approximately \$20 million each year. The county government and Dominion Cove Point entered a 15-year PILOT and tax credit agreement. In FY18, the county government will receive a one-time \$25 million payment from Dominion

Cove Point, before the facility is operational. The PILOT locks in the existing equipment value at \$15.1 for the first 5 years of the PILOT (without the agreement, the existing equipment was projected to decline). A tax credit begins in the sixth year of the PILOT, providing a 42 percent tax credit on new and repurposed equipment. The county will receive approximately \$40 million (on average) per year in tax revenue once the facility is operational.

Calvert County's Emerging Industries

As Calvert County seeks to expand its economic base and attract residents, it should encourage development of solar energy and growth in its high tech, commercial and retail sectors, with attention to developing incentives and resources for entrepreneurship and innovation.

Solar Energy

The Maryland Renewable Energy Portfolio Standard Program (RPS) requires that 2 percent of the state's energy come from solar by 2020. Incentives such as the State of Maryland's Renewable Energy Credit (REC) and the Federal Business Energy Investment Tax Credit have accelerated solar farm development in Maryland to meet the state's goal and tap into the accompanying business opportunity. Maryland's agricultural land is well suited for solar farm installation and solar companies have rented rural land throughout the state of Maryland to install solar panels across fields formerly used for agriculture.

While Calvert County does not currently have solar farms, the county's large agricultural land area indicates an opportunity to consider solar energy production. Solar farms entail the loss of tillable farmland, but are a source of consistent income.

High Tech Industries

Because Calvert County is a peninsula with limited transportation access and alternatives, it is unlikely to become a major manufacturing, transportation, or logistics hub. However, the county may be successful in attracting new economy industries such as software development or professional services jobs that produce ideas instead of physical goods. Because many of these jobs can locate anywhere, the quality of life and cost of living offered in Calvert County will be key decision points for employers and employees. These businesses and their employees depend upon secure high-speed and uninterrupted, high-capacity internet connections.

Commercial and Retail

A 2011 retail leakage report estimates how much Calvert County residents are spending outside the county in retail and personal service categories. Residents frequently request two of the top three categories- food service & drinking places and clothing & clothing accessories- as new businesses in the county. The report also estimates the additional gross leasable area needed to accommodate the local demand for retail services. Growth in commercial and retail space should be targeted primarily towards Town Centers.

Table 8-8 Estimated Lost Spending and Additional Retail Space Demand from County Resident Retail Spending Outside of the County, 2011

Retail Category	“Lost” Spending	Additional Retail Space Demand (Square Feet of Gross Leasable Area)
Furniture & Home Furnishings	\$30,389,414	202,596
Electronics and Appliances Stores	21,282,271	35,470
Building Materials, Garden Equipment Stores	113,020,637	452,083
Health & Personal Care Stores	27,513,762	29,906
Clothing & Clothing Accessories	73,462,961	222,615
Sporting Goods, Hobby, Book, Musical Instrument Stores	27,386,688	127,380
General Merchandise Stores	55,511,443	170,804
Miscellaneous Store Retailers	23,494,797	78,316
Foodservice & Drinking Places	88,665,383	264,673
Total	\$460,727,356	1,583,843

Source: Retail Purchase Power Analysis, Calvert County, Maryland (Conducted by Fore Consulting, December 2011)

Recreation & Tourism

Calvert County has many natural, cultural, recreational, and historical resources that draw residents and visitors to the county. The impact of the tourism industry on the county’s economy is significant. In 2015 the tourism industry employed 2,071 workers in Calvert County. Total tourism tax receipts were \$37.7 million. Calvert County’s 2015 visitor counts increased by 109,264 visitors, or 33.4 percent, over 2010. Total tourism industry sales increased from \$125 million in 2010 to \$146.8 million in 2015. However, there was less spending per visitor in 2015 than in 2010.

Calvert County’s prehistoric and colonial history, its natural features and waterfront location, and its agricultural heritage offer numerous settings and experiences that can attract visitors from throughout the Baltimore-Washington region for day, weekend and overnight adventures. Programs to increase these offerings can include training for hospitality jobs, supporting research into local history and

archeology, creating festival events and locations to showcase local attractions, and appropriately balancing the need to protect residents' quality of life with the demands of running tourist-oriented businesses on sites that may be distance from major roads and commercial centers.

A key goal of expanding Calvert County's tourism industry is to increase the amount of money each visitor is spending while continuing to increase the number of visitors. Expanding the per visitor expenditures is challenging because many of the county's attractions are natural assets, which are relatively inexpensive attractions. In addition, because of Calvert County's location, it is easy for visitors to spend only the day. The county should continue to develop strategies to increase the number of visitor attractions so that a visitor needs more than one day to see them and to create "destination" accommodations and dining so that people spend the night.

Tourism can also be supported in Calvert County by expanding local dining and shopping; creating more walkable, bikeable, and connected Town Centers and Villages; attracting travelers who may be visiting the area without cars; and providing more and better access to the water.

Strategies

Town Centers

The Town Centers and incorporated municipalities are the focus of the county's commercial and employment activities. These places are designated for the higher intensity and greater variety of commercial and residential development within the plan boundaries. There is a mix of uses intended to serve a community of all ages, with special attention paid to senior citizens and young adults. Additional retail such as restaurants, clothing stores, and personal service businesses would increase the local tax base and satisfy these residents' currently unmet needs. One approach would be to assign a county staff person to each Town Center with the responsibility to coordinate development activities, to promote special events, and to facilitate cooperation between and among businesses and residents.

Directing commercial, retail, and housing development to Town Centers is a central element in strengthening economic vitality in Calvert County and an important counterpart to policies designed to preserve the county's rural land.

The built form plays a significant role in the success of Town Centers as economic centers. A denser pattern of businesses, housing, and office space in Town Centers would reduce the travel time to work and shopping locations and create more vibrant and accessible centers of commerce. Walkable communities with a range of housing opportunities and attractive recreational facilities are important in retaining and attracting young professionals and entrepreneurs. A well-connected road system, public transit, bike connectivity and pedestrian infrastructure between Town Centers and surrounding communities are important links to connect consumers with retail and residents with economic opportunities within the county.

Prince Frederick is the seat of county government and is the logical location for governmental, educational and legal services. Prince Frederick's other attraction is the Calvert Memorial Hospital; many private medical professionals have offices in Prince Frederick. With a location near the geographic center of the county, Prince Frederick also functions as a regional retail center.

Dunkirk has the potential to be one of the county's major employment centers due to its proximity to Washington, D.C. and the area's airports, interstate highways, and metropolitan centers. Dunkirk currently serves as a retail and service center, and significant commercial growth is possible.

In the southern part of the county, Solomons' unique geography, location on the water, and historic atmosphere make it well-suited as a recreation destination. In addition, Solomons continues to be an attractive location for retired persons to locate, both in planned retirement communities and in existing neighborhoods, while Lusby is emerging as a place for growing commercial and office space development.

The incorporated towns of North Beach and Chesapeake Beach are experiencing resurgence in tourism and the development of small businesses. Strong economies in the two municipalities reinforce the county's economy. The county's economic development plans and efforts must coordinate with and reinforce those of the two municipalities.

Education and Workforce Development

The College of Southern Maryland is a hub for career planning, job and life skills training, and internship and job placement services in the fields of Science, Technology, Engineering, and Mathematics (STEM). Encouraging education and training of Calvert County's workforce in these fields provides skills needed by the county's current employers and the possible expansions associated with them. New companies may be interested in locating in Calvert County, attracted by a quality workforce. In addition, the College of Southern Maryland can expand its services as an incubator for local entrepreneurs looking for advice on how to start or expand their businesses. Human resource programs involve universities sharing their research with local businesses.

The Chesapeake Biological Laboratory, located in Solomons, is a University of Maryland research lab with a team of scientists that focuses on fisheries, environmental chemistry and toxicology, and ecosystem science and restoration ecology. The Chesapeake Biological Laboratory provides educational opportunities for graduate level students, in addition to public education and outreach programs for younger students.

These educational opportunities in STEM fields can provide a foundation for the growth of STEM industries in Calvert County.

Developing Entrepreneurs

Maryland ranks third overall and second among larger population states in the Kauffman Index of Growth Entrepreneurship, which is based on the rate of startup company growth, the density of high-growth scale-up companies among other young companies, and the density of fast-growing companies among the business population. Further, the Washington, D.C. metro, which includes suburban Maryland, ranks first among the 40 largest metropolitan areas.

Calvert County should encourage the young residents of the county to become acquainted with the process of business development in the schools. This would encourage entrepreneurship and increase the number of start-up small businesses in Calvert County. It would also incentivize people to create jobs for themselves rather than waiting for jobs to be created for them.

Utility Extension Policies

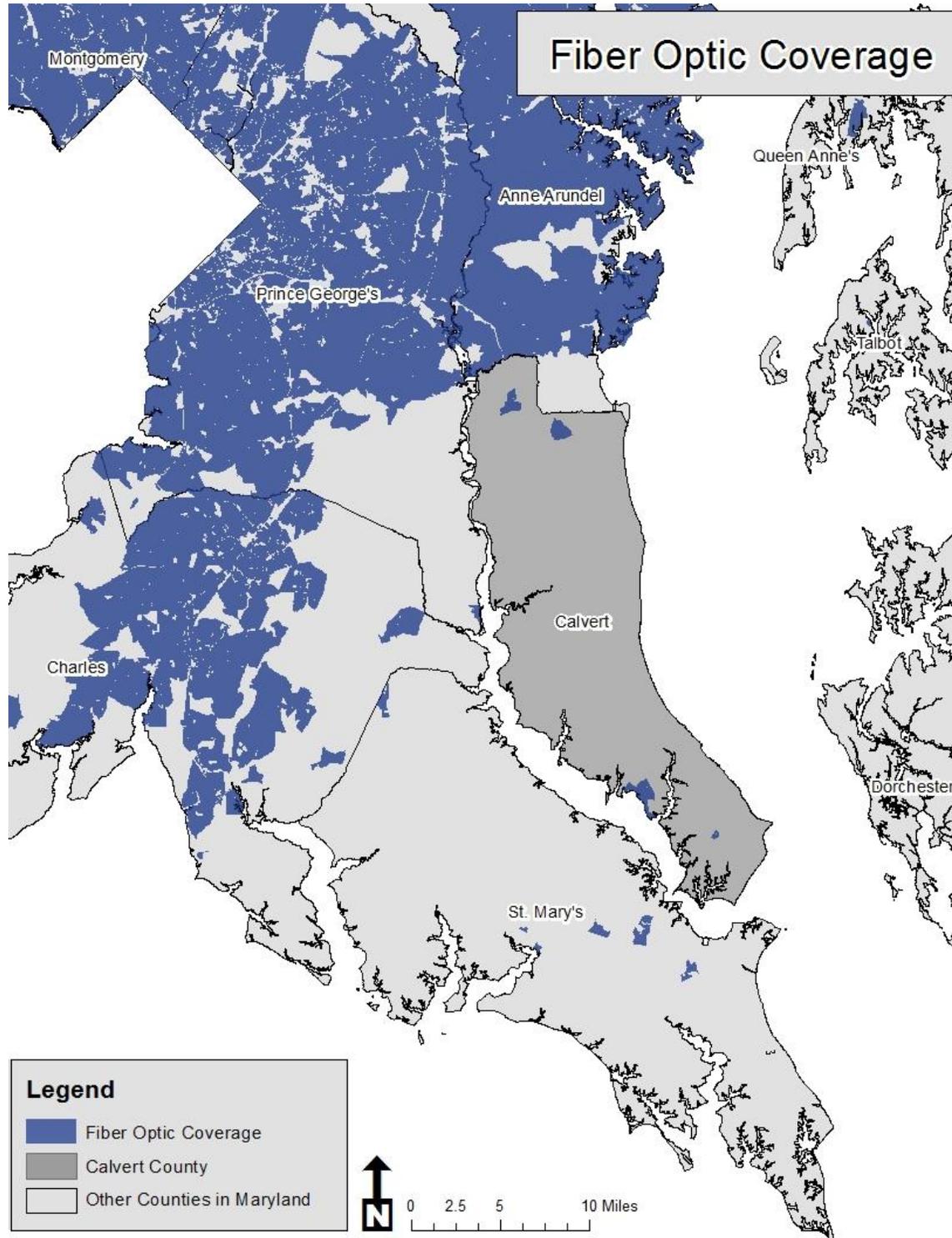
The availability of water supply and wastewater treatment is a crucial improvement to increase economic activity. Calvert County's lack of sufficient water and sewer infrastructure within the Town Centers limits their development potential and economic growth. To achieve higher intensity and greater variety of commercial development in the Town Centers, the county needs to develop a strategy to finance the expansion of sewer and water service in these locations.

Broadband Infrastructure

Fiber optic is infrastructure as necessary as water and sewer in order to attract high tech jobs. Figure 8-1 shows that Calvert County is just outside the regional broadband service area. Anne Arundel, Prince George's, Montgomery Counties, and parts of Charles County have an extensive fiber optic network. However, Calvert County has only four isolated locations where fiber optic connections are available, including Owings and Dunkirk Town Centers and two smaller locations in the southern portion of the county. Fiber optics services are consistently available throughout other areas between Baltimore and Washington, DC. Calvert and St. Mary's Counties are left behind.

More service areas would be needed to start achieving the county's high tech jobs goal. Advanced infrastructure, including fiber optic networks is extremely important for business development over the next 20 years.

Figure 8-1: Fiber Optic Coverage in Calvert County



Source: MD iMap. imap.maryland.gov.

Goals and Objectives

Goal 1: Strengthen economic opportunity in Calvert County.

Objective 1: Support and grow agricultural opportunities.

- Work with farmers and watermen to ensure their industries continue thriving in Calvert County.
- Provide incentives for agribusiness.
- Provide space and support the operations of farmers' markets in Town Centers and Villages.

Objective 2: Develop a path for growth for new businesses.

- Encourage entrepreneurship in Calvert County by providing technical and financial support for new businesses.
- Allow a broad range of home-based businesses with appropriate limitations on size and number of employees.
- Develop incubators for new businesses and encourage businesses to locate in small incubator spaces when their activities are not suitable as a home occupation or have outgrown home-based locations.
- Clarify provisions for temporary uses (e.g. temporary pop-up businesses, outdoor sales, mobile food service, and farmers' markets) on private property.

Objective 3: Attract retirees to Calvert County.

- Define a specialized Retirement Location brand.
- Continue to promote the county's quality of life.

Objective 4: Consider new renewable energy opportunities.

- Develop land use policies for solar energy production.
- Offer farmers opportunities to lease their land for solar farms.

Objective 5: Provide access to broadband throughout the county.

- Prioritize the provision of broadband in Town Centers and Villages

Goal 2: Direct business growth to Town Centers and Villages while preserving agricultural land in the Farm and Forest District.

Objective 1: Encourage development in Town Centers and Villages.

- Streamline the development review process in Town Centers and Villages. Maintain a fast-track permitting process for targeted businesses.
- Provide for adequate amounts of land zoned for business development in appropriate locations in Town Centers and Villages. Provide flexibility in the zoning regulations related to business development.
- Explore the use of TDRs to increase commercial intensity in Town Centers.
- Maintain an online presence of tools and resources for county businesses and businesses looking to locate in the county.
- Provide county staff designated for each Town Center.

- Create more walkable, bikeable, and connected Town Centers.

Objective 2: Provide incentives for business development in Town Centers, Villages, and Employment Centers.

- Consider loans, tax reduction, and changes in taxing policies within State designated Priority Funding Areas (PFAs), grants, infrastructure, and training for workers.

Objective 3: Make improvements to public services and facilities in Town Centers and Villages.

- Direct public investment to infrastructure, services, and support facilities in Town Centers and Villages.
- Develop cost-sharing strategies that leverage private sector investment in water and sewer extensions in Town Centers and Villages in order to protect environmental health or support county-identified economic development goals.

Goal 3: Expand Calvert County's tourism industry.

Objective 1: Increase the number of visitors in Calvert County.

- Provide expanded and improved access to the Chesapeake Bay and Patuxent River.
- Support and coordinate marketing of special events and tourist attractions within the county.
- Explore options, such as weekend shuttles serving Washington, D.C., to attract visitors without cars.

Objective 2: Increase the amount of money visitors are spending in Calvert County.

- Support the establishment of “destination” accommodations and dining to draw overnight tourism.
- Expand small-scale high end retail businesses with a local flavor.

Goal 4: Strengthen educational opportunities in Calvert County.

Objective 1: The county's education system should provide general education, vocational and technical training and retraining to meet the skill requirements for existing and future job trends.

- Support expansion at the Prince Frederick Campus of the College of Southern Maryland programs to support local businesses such as The Corporate Center, the Small Business Development Center.
- Encourage the College of Southern Maryland to expand partnering with Calvert County health care providers that includes classroom instruction and clinical training at locations in the county.
- Strengthen educational programs to support the existing health care, agri-business, hospitality, and energy industries.

CHAPTER 9. WATER RESOURCES

Vision

We waste less, consume fewer natural resources, and properly dispose of waste.

Goals

Goal 1: Ensure sufficient drinking water quantity and quality to support projected population growth.

Goal 2: Ensure sufficient wastewater treatment capacity to support development in Town Centers served by public sewer systems.

Goal 3: Protect public health and water quality in areas outside the Town Centers.

Goal 4: Install or enhance storm water management systems to reduce pollution in the Chesapeake Bay and Patuxent River.

State Vision

This chapter addresses the following Maryland State Visions:

Quality of Life and Sustainability: A high quality of life is achieved through universal stewardship of land, water and air resulting in sustainable communities and protection of the environment.

Growth Areas: Growth is concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers.

Infrastructure: Growth areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner.

Environmental Protection: Land and water resources, including the Chesapeake and coastal bays, are carefully managed to restore and maintain healthy air and water, natural systems and living resources.

Related County Plans

Calvert County Watershed Implementation Plan (WIP) II Strategy, 2011 - This plan contains a strategy to meet Calvert County's 2017 interim watershed target loads for nitrogen, phosphorus and sediment.

Calvert County Comprehensive Water & Sewerage Plan, 2014 Update –This plan provides a framework for the County water supply and sewerage disposal. Source Water Assessment for 49 Non-Transient Non-Community Water Systems in Calvert County, MD 2006

Source Water Assessment for Community Water Systems in Calvert County, MD, 2005 - Source Water Assessment for Calvert Cliffs, Dominion Cove Point LNG, and Naval Research Lab, 2006

Ten-Year Comprehensive Solid Waste Management Plan 2006-2018 – This plan projects future waste generation, and establishes goals to improve the quality of solid waste administration.

Overview

Calvert County’s projected population is a key driver for planning future community water and sewerage service. The Maryland Department of Planning projects a population of 100,450 in 2040, an increase of approximately 10,000 residents from the 2015 population of 90,650.

The Land Use policies contained elsewhere in this Comprehensive Plan direct the majority of the county’s residential and commercial growth into the Town Centers and Villages and minimize future residential development in the Farm and Forest District (FFD). Given these policies, the county must ensure that its water supply and wastewater systems in Town Centers meet current and future needs without jeopardizing the health of local waters, the Patuxent River, and the Chesapeake Bay.

Water Quality Regulations

The State of Maryland signed the 2014 Chesapeake Bay Watershed Agreement and has committed to reduce its nitrogen and phosphorus contributions to the Bay through the Total Maximum Daily Load (TMDL) program. To comply, Maryland has set nutrient caps for Calvert County wastewater treatment plants as shown in Table 9-1. The Bay Restoration Fund provides some funding to install ENR technology at wastewater treatment plants so they can achieve an effluent quality of 3.0 mg/l total nitrogen (TN) and 0.3 mg/l total phosphorus (TP). Calvert County’s Watershed Implementation Plan (Phase II WIP) sets target loads and reductions for nitrogen and phosphorus. Calvert County’s wastewater plants have met the 2017 target loads level.

Table 9-1: Phase II Watershed Implementation Plan Target Loads

Nitrogen	Loadings			Reductions	
	2009	2017 Target	2020 Target	2017	2020
Agriculture	148,669	109,362	92,516	-39,307	-56,153
Urban	195,663	154,264	136,522	-41,399	-59,141
Septic	299,785	215,492	179,366	-84,293	-120,419
Forest	150,410	160,667	150,776	10,257	366
Wastewater	27,893	32,589	30,313	4,696	2,420
Total	822,420	662,374	589,493	-160,046	-232,927
Total Excluding Ag	673,751	563,012	496,977	-110,739	-176,774
Phosphorous	Loadings			Reductions	
	2009	2017 Target	2020 Target	2017	2020
Agriculture	14,020	11,558	10,503	-2,462	-3,517
Urban	20,777	14,164	11,330	-6,613	-9,447

Nitrogen	Loadings			Reductions	
Septic	0	0	0	0	0
Forest	3,881	3,886	3,888	5	7
Wastewater	12,803	6,917	4,740	-5,886	-8,063
Total	51,481	36,525	30,461	-14,956	-21,020
Total Excluding Ag	37,461	24,967	19,958	-12,494	-17,503

Drinking Water Assessment

Water Supply

All of Calvert County’s drinking water is supplied by ground water aquifers. These aquifers are part of the Coastal Region and have the benefit of being insulated from contamination by layers of low-permeability clay that prevent surface contaminants from entering the aquifers. Only one surface water impoundment of significant size is located in Calvert County, in the Chesapeake Ranch Estates. This surface water impoundment does not supply drinking water.

Calvert County is located within the Coastal Plain, which has experienced significant decreases in groundwater levels over the past several decades. A 2014 study by the Maryland Geological Survey found that Calvert County’s aquifers have declined between 61 to 199 ft. in the aquifers under the county.

Increases in pumping over the past decades have caused groundwater levels in the aquifers within the Coastal Plain to continually decline which could affect the availability of drinking water throughout Southern Maryland, including in Calvert County.¹

Calvert County’s groundwater is actively monitored through the Calvert County Groundwater-Level Monitoring Network, administered jointly by the Calvert County Department of Public Works, Water and Sewerage Division, the Maryland Geological Survey, and the U.S. Geological Survey.² This network consists of 42 wells throughout the county that are monitored on a real-time, monthly, or twice-yearly basis. The network monitors the Piney Point, Nanjemoy, Aquia and Magothy aquifers most frequently because they are deeper, confined aquifers that experience the highest local and regional withdrawal levels.

The Maryland Geological Survey also initiated a study in the tri-county area of Southern Maryland (Calvert, Charles and St. Mary’s Counties) to study the availability of water in the upper Patapsco and lower Patapsco aquifers and monitor local groundwater recharge and drought conditions.

¹Staley, A.W (2014), Potentiometric surface and water-level difference maps of selected confined aquifers in Southern Maryland and Maryland’s Eastern Shore, 1975-2013, *Maryland Geological Survey*.

² <https://md.water.usgs.gov/groundwater/calvert/>

Drinking Water Capacity

The Calvert County Department of Public Works Water and Sewerage Division operates 19 public water systems. Four well systems are operated for industrial sites and eleven private community well systems provide service for areas outside of the municipal service areas.³ Table 9-2 lists all water systems- municipal, industrial and private community- located in Calvert County, their water sources, treatment types, average production, storage capacity, planned expansion, and operating agency.

Table 9-2: Water Systems in Calvert County

Owner	Water Source	Type Treatment	Average Production (MGD)	Storage Capacity (Tank) (MGD)	Planned Expansion (MGD / Dates)	Operating Agency
Municipal						
Calvert County (Cavalier Country)	2 wells in Magothy Aquifer	DI, SE	0.0215	0.02 (0.015)	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Ches. Heights)	2 wells in Aquia Aquifer	DI	0.0476	0.15 (0.1575)	New well FY17	Ca.Co. Div. of Water and Sewerage
Calvert County (Cross Point)	3 wells in Aquia Aquifer	DI, SE	0.0413	0.075	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Dares Beach)	2 wells: 1 in Aquia and 1 in Nanjemoy	DI	0.0284	0.07	Connect to Chesapeake Height in FY2017	Ca.Co. Div. of Water and Sewerage
Calvert County (Highlands/ Summit)	4 wells in the Aquia Aquifer	DI, SE	0.0671	0.15	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Hunting Hills)	2 wells: 1 in Aquia and 1 in Nanjemoy	DI	0.0081	0.008	None	Ca.Co. Div. of Water and Sewerage

³ 2016 Water Quality Report
9-4

Owner	Water Source	Type Treatment	Average Production (MGD)	Storage Capacity (Tank) (MGD)	Planned Expansion (MGD / Dates)	Operating Agency
Calvert County (Kenwood Beach)	2 wells in Piney Pt. Aquifer	DI	0.013	0.0075	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Lakewood)	2 wells in Aquia Aquifer	DI	0.0264	0.075	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Marley Run)	2 wells in Aquia Aquifer	DI	0.15	0.25	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Paris Oaks)	2 wells in Aquia Aquifer	DI, SE	0.0178	0.15	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Prince Frederick)	7 wells in Aquia Aquifer	DI	0.4339	0.5	New well FY16 in Lower Patapsco	Ca.Co. Div. of Water and Sewerage
Calvert County (Shores of Calvert)	2 wells in Magothy Aquifer	DI	0.0242	0.15	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Solomons Island)	2 wells in Aquia Aquifer	DI	0.3971	2	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Southern Pines Senior Center)	1 well in Piney Point Aquifer	DI	0.0035	0.01	Connected to Solomons Water System 2014 Well for Fire Suppression only	Ca.Co. Div. of Water and Sewerage

Owner	Water Source	Type Treatment	Average Production (MGD)	Storage Capacity (Tank) (MGD)	Planned Expansion (MGD / Dates)	Operating Agency
Calvert County (St. Leonard)	2 wells in Aquia Aquifer	DI	0.0281	0.08	0.072/FY08	Ca.Co. Div. of Water and Sewerage
Calvert County (Tara)	2 wells in Aquia Aquifer	DI	0.0062	0.015	None	Ca.Co. Div. of Water and Sewerage
Calvert County (Walnut Creek)	2 wells in Aquia Aquifer	DI	0.0145	0.015	None	Ca.Co. Div. of Water and Sewerage
Calvert County (White Sands)	2 wells in Piney Point Aquifer	DI	0.0045	0.01 (0.008)	None	Ca.Co. Div. of Water and Sewerage
Industrial						
Constellation Energy (Calvert Cliffs Nuclear Power Plant)	Data NA	Data NA	Data NA	Data NA	None	Maryland Environmental Services
Dominion Cove Point LNG	1 well in Lower Patapsco; 2 wells in Aquia	DI	0.044	0.01	None	Dominion
Calvert County / Industrial Park Association (IPA)(Industrial Park)	2 wells in Aquia Aquifer	DI	0.0402	0.555	None	Ca.Co. Div. of Water and Sewerage

Owner	Water Source	Type Treatment	Average Production (MGD)	Storage Capacity (Tank) (MGD)	Planned Expansion (MGD / Dates)	Operating Agency
U.S. Navy (Naval Research Facility, Randle Cliff)	1 well in Aquia Aquifer	Data NA	1	0.0088	None	U.S. Government
Private Community/ Institutional						
Anchorage Mobile Home Park	Data NA	Data NA	0.0075	Data NA	None	
Beaches Water	5 wells in Nanjemoy and 3 wells Aquia	DI	0.118	0.125	None	Beaches Water Company
Buckler Mobile Home Park	Data NA	Data NA	0.00744	Data NA	None	Data unavailable
Calvert Beach Water	1 well Piney Point Aquifer	DI	0.028	Data NA	Data unavailable	Water Services, Inc.
Chesapeake Ranch Estates	4 wells in Aquia Aquifer	Data NA	0.636	0.9	Data unavailable	Chesapeake Water Co.
Calvert County (Detention Center)	2 wells in Aquia Aquifer	DI	0.025		Connected to Prince Frederick water System 2014. Wells for Fire Suppression Only	Ca.Co. Div. of Water and Sewerage

Owner	Water Source	Type Treatment	Average Production (MGD)	Storage Capacity (Tank) (MGD)	Planned Expansion (MGD / Dates)	Operating Agency
Parkers Creek (Parkers Creek Knoll)	Data NA	DI	0.0025	Data NA	Data NA	Independent Licensed Operator
Regency Manor Mobile Home Park	Aquia	DI	0.014	0.005	None	Water Services, Inc.
Scientists' Cliffs Association (Scientists' Cliffs)	1 well in Aquia Aquifer	DI	0.0025	0.03	None	Scientists' Cliffs Association
Tapestry North Condominium Association of Unit Owners (Tapestry North Condominiums)	Data NA	DI	0.01075	Data NA	None	Div. of Water and Sewerage
Walville Acres (Johnson Acres)	Data NA	DI	0.01075	Data NA	None	Johnson Acres Water Co.
Utility Services, Inc. (Western Shores)	Piney Point	DI	0.029	0.0075	FY08	Water Services, Inc.

Source: Calvert County Comprehensive Water & Sewerage Plan 2014 Update

Drinking Water Demand

Calvert County’s per capita daily water demand is currently at 90 gallons per day and is estimated to remain at this level until at least 2040. Based on the county’s projected increase in population between 2015 and 2040, the total countywide daily demand for drinking water will increase by approximately one million gallons per day by 2040.

Table 9-3: Water Demand in Calvert County

Year	1970	1980	1990	2000	2010	2015	2020	2030	2040
County Population	20,682	34,638	51,372	74,563	88,737	90,650	94,600	99,200	100,450
Projected Daily Demand Rate per Capita (gallons per capita per day)	75	80	90	90	90	90	90	90	90
Total Countywide Daily Demand Generated (Millions of gallons per day)	1.55	2.77	4.62	6.71	7.99	8.16	8.51	8.93	9.04

Sources: Population Projections: Maryland Department of Planning, 2017⁴

Daily Demand Generated: Calvert County Comprehensive Water & Sewerage Plan

Well Expansion Policies

An allocation can be required for any project located within a County Sanitary District requiring water and sewer service if there is system capacity and appropriate service category. Projects within the County Sanitary District are prioritized in the following order:

- Failing well or septic systems determined to be a public hazard by the Health Department
- Projects in the Capital Improvement Program
- Target industries included in the Five-Year Economic Development Plan
- Affordable housing projects given Transferable Development Rights or Excise Tax Waivers
- Other failing well or septic systems

The supplemental allocation policies for water and sewer systems in North Beach and Chesapeake Beach, Lusby, Prince Frederick, and Solomons should address prioritization of projects located within the Town Centers and funded by others.

⁴ Population figures are Census numbers 1970 through 2015, while 2020 through 2040 are population projections. Source: Maryland Department of Planning, July 2017.

Drinking Water Quality

Calvert County's drinking water undergoes regular testing in compliance with the U.S. EPA's requirements and the Federal Safe Drinking Water Act requires public systems to conduct a Source Water Assessment to understand the vulnerabilities of drinking water sources.

All of Calvert County's drinking water comes from ground water sources protected by confining layers, it is protected from many sources of surface water contamination. The unconsolidated sediments and soil over the aquifers provide protection from microbiological contamination as water percolates through the overlying soil and aquifer. The most significant sources of ground water pollution are naturally occurring elements, such as arsenic, and contamination from septic systems.

Point source contamination in some of the county's water systems include on-site septic systems, ground water discharge sites, underground storage tanks, and hazardous substance generators in commercial areas. Non-point source contamination is transported primarily through runoff and drainage. Contamination from point source and non-point sources is a primary cause of bacteriological problems, nitrification, and sedimentation in waters in Maryland. Abandoned wells that penetrate the confining layers pose the greatest threat to drinking water quality because they allow surface contaminants direct access to source water.

Natural contaminants are a more common source than land surface contaminants in the aquifers supplying drinking water to Calvert County. Arsenic is naturally occurring in the aquifer material of Maryland's Coastal Plain, which causes elevated arsenic levels in groundwater drawn from aquifers in this area. This presents concerns for the County's drinking water quality, as most of the county's drinking water is supplied from the Aquia aquifer. The Maryland Geological Survey actively monitors the arsenic levels in the Aquia and Piney Point aquifers and reports arsenic levels on an interactive map.⁵ Calvert County and central St. Mary's County arsenic concentrations are generally lower than other areas in the Aquia aquifer⁶. Marley Run and Chesapeake Ranch Estates water systems have arsenic removal systems installed.

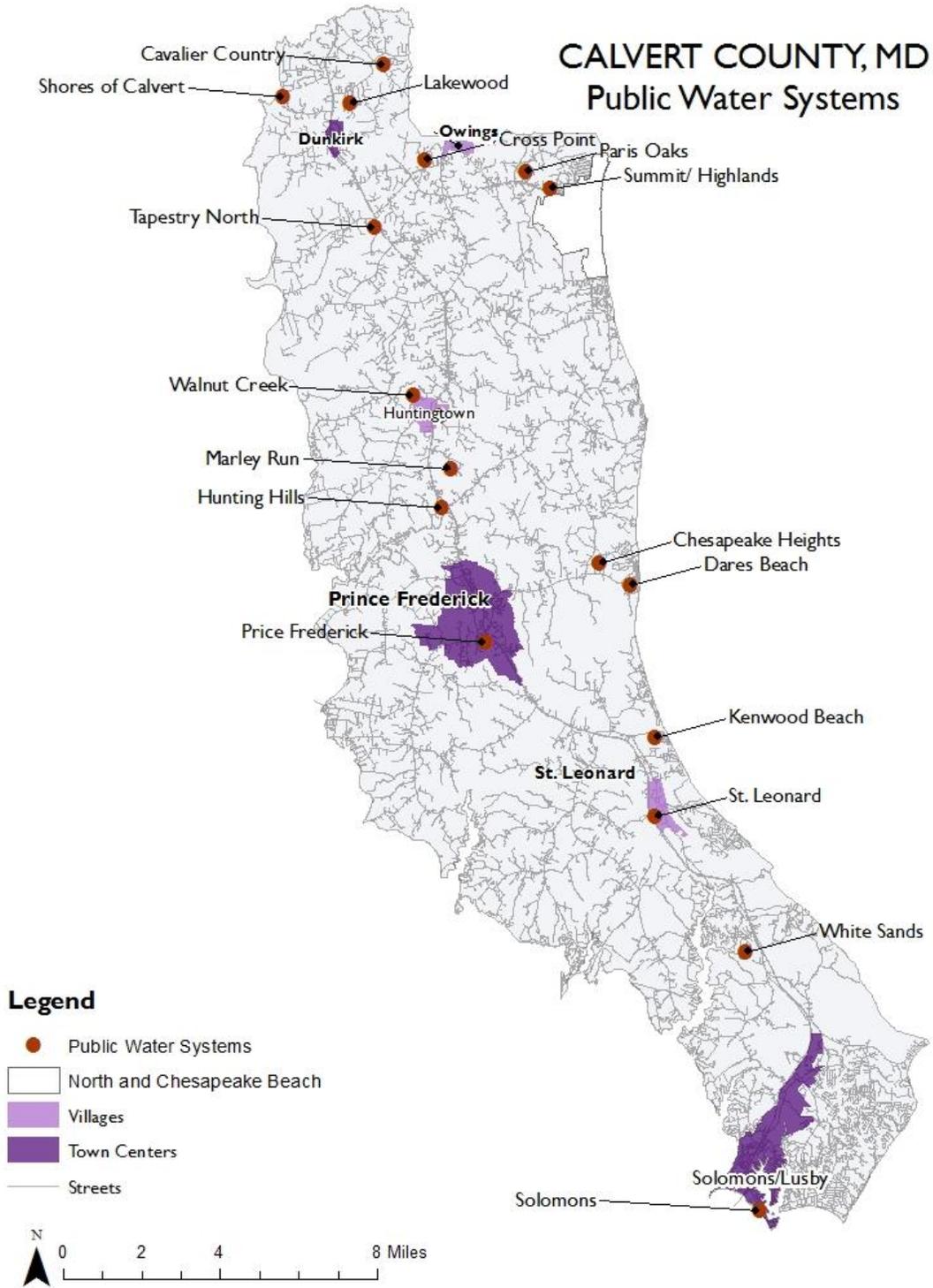
Drinking water in Calvert County has also tested positively for traces of hydrogen sulfide (H₂S) odor, iron and other minerals in the water in scattered instances.⁷ Chromium, lead and nitrate were the only iodized organic compounds detected at or above 50 percent of their respective MCLs in the Source Water Assessments. Groundwater testing found that groundwater systems were found to not be susceptible to synthetic organic compounds, volatile organic compounds, microbiological contaminants, or other inorganic compounds.

⁵Maryland Geological Survey, <http://www.mgs.md.gov/groundwater/arsenic%20interactive.html>

⁶ Drummond, D.D and Bolton D.W. (2010) Arsenic in ground water in the Coastal Plain aquifers of Maryland

⁷ Water and Sewerage Plan 2014

Figure 9-1 Calvert County Public Water Systems



Wastewater Assessment

Directing Calvert County’s population and employment growth to the Town Centers over the next fifteen years depends upon expansion of the county’s publicly-owned wastewater treatment systems. Outside the Town Centers, Calvert County relies heavily on individual septic systems to serve households. Septic systems, particularly those systems that are failing, present significant threats to the quality of the county’s drinking water and the health of the Chesapeake Bay and Patuxent River.

Directing growth into the Town Centers where households and businesses will be connected to public sewer systems is an important step in minimizing the growth of septic system usage in the county and reducing the pollutants associated with them.

Land Use and Sewer Systems

No new point source discharge systems have been constructed in Calvert County in the last 33 years. Instead, Calvert County has opted to serve multiple lots with land application systems so that the nutrients from sewerage treatment systems don’t make their way into surface water.

Wastewater Treatment Capacity and Demand

Ten wastewater treatment plants (WWTP) are located in Calvert County, including one inter-jurisdictional system serving Calvert County, Chesapeake Beach, North Beach and Anne Arundel. Four of these systems are publicly-owned municipal systems with a combined capacity of 2.685 MGD: Chesapeake Beach Inter-jurisdictional, Prince Frederick, Solomons Island, and Marley Run. Calvert County’s six additional wastewater treatment plants are smaller-scale operations that only process between 40,000 and 75,000 gallons per day for industrial and private community users. The facilities with their respective capacities and operating agencies are shown in Table 9-4.

Most of Calvert County’s residents are not served by community sewerage systems and instead use on-site septic systems.

Table 9-4: Wastewater Treatment Facilities in Calvert County (Less than

	Existing Capacity (MGD)	Maximum Capacity (MGD)	Average Flow (MGD)	Operating Agency
Municipal (Public)				
Chesapeake Beach Inter-Jurisdictional System	1.32	1.5	0.63	Chesapeake Beach
Marley Run	0.015	0.04	0.011	Div. of Water and Sewerage
Prince Frederick WWTP I and II	0.65	0.75	0.429	Div. of Water and Sewerage
Solomons Island	0.7	1.03	0.406	

	Existing Capacity (MGD)	Maximum Capacity (MGD)	Average Flow (MGD)	Operating Agency
Industrial				
Calvert Cliffs Nuclear Power Plant	0.0665	-	0.0126	Maryland Environmental Service (MES)
Randle Cliff Naval Research Facility	0.075	-	0.03	U.S. Navy
Regency Manor (Communal Septic)	0.014	-	0.028	Water Services, Inc.
Northern High School	0.025	-	0.0105	Div. of Water and Sewerage
Tapestry North Condominium Association (septic)	-	-	-	Div. of Water and Sewerage

Source: 2014 Water and Sewerage Plan Update

The Calvert County Industrial Park WWTP was closed in 2015. Wastewater from locations previously treated at this facility is now connected to the Prince Frederick land application WWTP.

Three of Calvert County’s wastewater treatment plants process over 500,000 gallons per day. Both the Chesapeake Beach and Solomons plants currently have the capacity to meet projected 2030 flow levels. The Prince Frederick plant, on the other hand, requires an additional capacity of 25,000 gallons per day to meet projected 2030 flow.

Effluent Impact to Water Resources

Effluent from wastewater treatment plants (WWTPs) and tanks are major sources of contamination for waterways and present threats to drinking water quality. Calvert County focused on making improvements to its wastewater treatment plants to meet its TMDL target loads for nitrogen and phosphorus through the Phase II Watershed Implementation Plan.

Wastewater Treatment Plants

Effluent from WWTPs in Calvert County has little effect on groundwater resources because of the confining layers protecting aquifers from surface contaminants. WWTPs have a more direct influence on the water quality of the Chesapeake Bay and Patuxent River. Until the past two decades, wastewater effluent was directly discharged into waterways. However, because of the threats WWTPs present to water quality, Calvert County now uses land application systems in most of its major WWTPs rather than directly discharging treated wastewater into waterways. Land application can recharge groundwater supplies, allows recovery and reuse of nutrients, and can be used for agricultural purposes. Techniques

include irrigation, rapid infiltration, over land flow, landscape irrigation, woodland irrigation, and wetland treatment.

The MDE issues National Pollution Discharge Elimination System (NPDES) permits to WWTPs every five years, establishing discharge limits for each WWTP.

The Prince Frederick, Solomons, and Marley Run land application systems do not discharge any nutrients into the Chesapeake Bay.⁸ The county has further reduced contaminants generated from WWTPs by upgrading the Chesapeake Beach WWTP systems to include Enhanced Nutrient Removal (ENR), significantly reducing the nitrogen and phosphorus present in treated wastewater. According to the Phase II Watershed Implementation Plan, Calvert County is on track to meet its 2020 load caps for nitrogen and phosphorus.

Table 5: Waste Water Treatment Projected Loading Rates and Target Loads

	2009 Loading Rates	2017 Loading Rates	2017 Target Loads	2020 Loading Rates	2020 Target Loads
Flow (mgd)	1.19	1.79	1.79	1.96	1.96
Nitrogen (lbs)	27,893	32,009	32,589	21,271	21,271
Phosphorus (lbs)	12,802	6,908	6,917	4,899	4,899

Source: Calvert County WIP II Strategy⁹

Wastewater Treatment System Expansion Policies

Calvert County’s 2014 Comprehensive Water & Sewerage Plan lays out policies for sewer system expansion based on land use, stressing the establishment or expansion of sewer systems in Town Centers and not permitting sewer service areas in rural and agricultural areas.

Town Centers

Community, multi-use, and shared facility sewer systems will be permitted in all Town Centers when needed to support environmental health and/or support county identified economic development goals, when and if cost effective and economically feasible and when consistent with Town Center master plans.

Interim multi-use systems that propose land (surface or subsurface) application and that have a capacity not exceeding 25,000 gallons per day may proceed without a plan amendment. However, county approval as well as the state's Water and Sewerage Construction Permit and NPDES Permit must be obtained before construction. Systems which are in service during the triennial update of the plan must

⁸ WIP Phase II

⁹

be discussed in the plan. All community sewerage systems and multi-use sewerage systems that either do not include land treatment or have a capacity to discharge greater than 5,000 gallons per day will require an amendment to the Plan before any State or county permits can be issued.

Sewerage Systems for Residential Areas around Town Centers

Developer-funded extensions of public sewer systems are permitted in the designated Residential areas surrounding Town Centers, as identified on the Future Land Use Plan Map.

Affordable housing agencies may apply to extend sewer lines to serve new development

Community, Multi-use, and Shared Facility Systems in Rural Areas

New community, multi-use, and shared facility service areas, sewer systems, and system extensions are permitted on land zoned for industrial, rural commercial and marine commercial use.

Community and shared facility service areas are allowed on land zoned for rural residential and waterfront community only if that area is experiencing septic failures and a community sewerage system or shared facility system is deemed by the Calvert County Health Department and Department of Public Works to be the most appropriate and economically feasible method for correcting the problem. No connections for undeveloped lots are permitted.

Multi-use sewerage systems are only allowed if the use is commercial or institutional (for public or quasi-public uses).

Septic System Upgrades

Septic systems produce high levels of nitrogen pollution. Nitrogen leaks out of functioning septic systems at about eleven pounds per household per year. Ninety percent of households in Calvert County use septic systems, presenting environmental concerns.

Part of the County’s Phase II WIP includes plans to connect the septic systems of at least 672 equivalent dwelling units (EDUs) to the Prince Frederick WWTP, which would generate zero discharge into the Bay.¹⁰

Table 6: Septic System Connections to Wastewater Treatment Plants

Septic System Location	EDUs	Septic System Connection
Dares Beach	121	Prince Frederick WWTP
Bayside Forest	278	Prince Frederick WWTP
Central Village	40	Prince Frederick WWTP
Hallowing Point Trailer Park	33	Prince Frederick WWTP
Department of Natural Resources Building	N/A	Prince Frederick WWTP

¹⁰ Phase II WIP
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Septic System Location	EDUs	Septic System Connection
Calvert County Industrial Park	N/A	Prince Frederick WWTP
Cove Point	200	Solomons WWTP
Cove Point LNG	N/A	Solomons WWTP
Huntingtown High School	N/A	Marley Run WWTP
Total	672	

Source: Phase II WIP

Directing future development away from rural areas and towards Town Centers reduces the need for the installation of septic systems and allows more of the county’s population to connect to public sewer.

Calvert County’s Phase II Watershed Implementation Plan outlines strategies the county is currently implementing to meet its nitrogen, phosphorus and sediment target load goals.

Septage

Septage is liquid and solid material pumped or removed from chemical toilets, septic tanks, seepage pits, privies, cesspools, or holding tanks when the system is cleaned and maintained¹¹. Most of Calvert County’s residents use on-site septic systems or tanks, which are serviced by septage haulers that periodically pump out the solid and liquid wastes. The septage haulers dispose of most septage at the Solomons Island septage off-loading facility at the Solomons Island WWTP. A small amount of septage is deposited in Washington Suburban Sanitary Commission (WSSC) plants in Prince George’s County and facilities in St. Mary’s County.

Sludge

Three of Calvert County’s wastewater treatment plants produce dewatered sludge that is disposed of in a landfill. These plants are Prince Frederick II WWTP, Solomons WWTP and the Randle Cliff Naval Research Facility. Four other wastewater treatment plants process liquid sludge from their respective facilities through the Solomons WWTP Septage Receiving Station. These include:

- Calvert Cliffs Nuclear Power Plant
- Marley Run
- Northern High School
- Tapestry North Condominium WWTP

The liquid sludge is ultimately processed and dewatered as part of the Solomons WWTP sludge generation and transported to the King George Landfill in Virginia.¹² Wastewater treatment plants are

¹¹ Maryland Department of the Environment, Title 26, Subtitle 04, Chapter 02 Sewage Disposal and Certain Water Systems for Homes and Other Establishments in the Counties of Maryland Where a Public Sewage System is Not Available

¹² Calvert County Comprehensive Water & Sewerage Plan 2014

required to have a Sewage Sludge Utilization (Transportation and Disposal) Permit to dewater, transport and dispose of sludge.

Sewage Problem Areas

Most problems with septic systems in Calvert County are on lots established during the 1960s or earlier. The highest concentrations of failing septic systems due to high groundwater and poor percolation are located in Apple Greene, Breezy Point, Broomes Island, Cavalier Country, Cove Point, Dares Beach, Plum Point and Neeld Estates. While septic system failures can be repaired on individual lots, this method is not sustainable for further development.

Managing Stormwater and Non-Point Source Pollution

Stormwater is a major source of contamination in the Chesapeake Bay and Patuxent River. Calvert County's Phase II Watershed Implementation Plan focuses heavily on addressing stormwater runoff through various methods to meet target loads for nitrogen, phosphorus and sediment.

The county has focused on planning and implementing stormwater management practices such as bioretention, rain gardens, bioswales, impervious surface reduction, shoreline erosion control, urban stream restoration, infiltration practices, vegetated channels, wet ponds and wetlands.¹³

Calvert County adopted a Stormwater Management Ordinance in 2011, which establishes requirements for managing stormwater runoff and encourages the use of environmental site design (ESD) to the maximum extent practicable in new development. Stormwater management plans are required by the Calvert County Department of Public Works for all development and redevelopment projects in the county. These plans must be submitted at three phases in the development process- concept, site development, and final stormwater management construction. Designs must account for additional stormwater runoff volume attributable to new development.

The Stormwater Management Ordinance requires the use of ESD treatment practices such as disconnection of rooftop runoff, rainwater harvesting, submerged gravel wetlands, infiltration berms, rain gardens, swales, and enhanced filters to satisfy the applicable minimum control requirements. The minimum control requirements state that ESD planning techniques and treatment practices must be exhausted before any structural best management practices are implemented (Calvert County Stormwater Management Ordinance, Article IV, § 123-10).

¹³ Phase II WIP
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Goals, Objectives and Strategies

Goal 1: Ensure sufficient drinking water quantity and quality to support projected population growth.

Objective 1: Continuously gather and analyze up-to-date data on the county's water supply.

- Urge the state to conduct groundwater studies to get a better understanding of regional and statewide water consumption and recharge area protection issues.
- If state studies are not conducted, then every six years (or comprehensive plan cycle) work with the Southern Maryland counties to update the aquifer study.

Objective 2: Ensure the safety of the county's drinking water.

- Continue to monitor water quality issues to provide that the water is safe to use.
- Implement procedures to reduce the naturally occurring arsenic in the public water systems to levels that do not exceed the EPA's maximum contaminant level of 10 ppb.
- Develop a wellhead protection plan to address the protection of all municipal and community water systems.
- Work with the Health Department to require that the bottom of all septic systems is greater than four feet above groundwater to protect near surface groundwater.
- Work with the Health Department to ensure that there are no unused wells within the WHPA.
- Water operations personnel inspect and maintain the supply wells and backup wells to ensure their integrity and protect the aquifer from contamination.
- Upgrade wells drilled prior to 1973 that do not meet current construction standards to protect them from contamination.
- Two-piece insect-proof well caps should be installed onto wells that have one-piece caps.
- Work with the county Health Department to conduct a survey of the WHPA and inventory any potential sources of contamination, including unused wells. Keep records of new development within the WHPA and new potential sources of contamination that may be associated with the new use.

Objective 3: Take steps to decrease water consumption.

- Continue to urge residents to consume less water. Maintain an education program to prevent waste of water. Establish a progressive surcharge for excess use of water in public water systems for residential uses. Continue to require the use of water saving equipment in all new development and redevelopment.

Goal 2: Ensure sufficient wastewater treatment capacity to support development in Town Centers served by public sewer systems.

Objective 1: Manage wastewater system capacity to ensure the systems are able accommodate new development in Town Centers served by public sewer.

- Continue to update wastewater capacity management plans for all county-owned or operated sewerage systems.

- Encourage development in the Town Centers provided with public sewage service.
- Implement plans for the expansion of wastewater capacity in Prince Frederick.
- Provide adequate public wastewater treatment facilities to accommodate planned future development in North Beach, Chesapeake Beach, Prince Frederick, Lusby, and Solomons Town Centers.
- Be proactive in the development of wastewater collection infrastructure in the Town Centers served by public sewer systems.
 - Permit community or shared water and sewer in Villages and in the Dunkirk Town Center when needed to support environmental health and/or to support county-identified economic development goals, when and if cost effective and economically feasible.
 - Require septic system to WWTP connections when sewage collection systems are available.

Goal 3: Protect public health and water quality in areas outside the Town Centers

Objective 1: Minimize new sewerage service areas outside of Town Centers.

- Continue the policy of restricting new sewerage service areas for multiple users to Priority Funding Areas, except for connection to septic failure areas. In those cases, only connect to existing developed lots.

Objective 2: Minimize pollution from wastewater treatment plants and septic systems.

- Require new wastewater treatment systems to be land application systems.
- Assure that existing effluent discharges into bodies of water minimize any adverse environmental impacts on oyster beds, spawning areas and fishing areas.
- Develop incentives for the use of nitrogen-removing technologies for new, replacement, and existing septic systems and for shared facilities to reduce nutrient pollution of our waterways.
- Continue and expand the educational program to promote regular pumping of septic tanks.
- Install more nitrogen-removing septic systems per year through the county’s ongoing Bay Restoration Fund (BRF) Grant Program.
- Require new septic systems and replacement septic systems in the Critical Area to be nitrogen reducing systems (as required by Maryland Law)
- Monitor septage haulers and septage quantities to ensure proper disposal is occurring and that adequate capacity for septage is maintained at the county’s WWTP.

Objective 3: Take steps to minimize sewage discharge in the Chesapeake Bay and Patuxent River.

- Require existing marinas to provide adequate toilet facilities to eliminate the discharge of raw sewage from water craft.
- Continue to require new marinas and expansion of existing marinas (greater than 10 slips) to provide pump-out facilities to receive raw sewage from water craft.

Goal 4: Install or enhance stormwater management systems to reduce pollution in the Chesapeake Bay and Patuxent River.

Objective 1: Upgrade existing failing and inadequate stormwater management facilities.

- Convert dry extended detention ponds and grass swales to wet ponds, wetlands and bioswales where appropriate.
- Increase current drainage channel repair and stream restoration implementation.
- Provide or upgrade stormwater management facilities on approximately 30 county structures to provide environmentally sensitive design (ESD), to include public schools, the golf course and the County Services Plaza.

Objective 2: Treat unmanaged impervious surfaces

- Convert approximately 200 miles of grass swales to bioswales and install an additional 160 miles of new grass swales along county and private roadways.
- Increase current rate of drainage channel repair from 200 feet per year to 715 feet per year, representing a total of 5,000 feet.
- Pursue implementation of regenerative stormwater conveyances or other vegetated flow attenuation wherever appropriate.
- Construct or upgrade approximately 160 miles of grass swales along currently unmanaged county and privately owned roadways to provide water quality treatment.
- Incentivize removal of unused impervious area, green roof retrofits, and expanded use of permeable pavement.
- Incentivize the use of microscale environmentally sensitive design practices on approximately 600 existing commercial properties that drain to regional facilities or pre-2000 stormwater management facilities to reduce nutrient loading closer to the source.
- Incentivize the construction of bioretention, micro-bioretention and raingarden facilities on approximately 1,250 single family residential lots; focusing primarily on densely populated areas such as Chesapeake Ranch Estates where facilities can treat multiple homes.

CHAPTER 10. COMMUNITY FACILITIES

Vision

Our communities are safe. We care for the well-being of each other.

Our children are well-prepared for the future. We offer robust and diverse educational opportunities with a variety of post-secondary educational and training opportunities.

We are building a strong local economy based on renewable resources, agriculture, seafood, high technology, retirement, recreation, and tourism.

Our government is efficient, open, and responsive to citizen needs and concerns.

Goals

Goal 1: Maintain the high quality of the educational facilities: public schools, college and libraries.

Goal 2: Provide access to a variety of quality recreational environments and opportunities.

Goal 3: Ensure that Calvert County has adequate healthcare facilities and programs.

Goal 4: Support public safety programs, strategies, and facilities development.

Goal 5: Maintain well-managed solid waste and recyclable materials management systems.

State Vision

This chapter addresses the following Maryland State Visions:

Quality of Life and Sustainability: A high quality of life is achieved through universal stewardship of the land, water, and air resulting in sustainable communities and protection of the environment.

Infrastructure: Growth areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner.

Related County Plans

Calvert County Public Schools Educational Facilities Master Plan, FY2018 - This plan assesses the current state of the Calvert County's educational facilities and needs based on student population projections.

Calvert County Public Schools 2016 Five-Year Comprehensive Master Plan - This plan provides a framework for achieving goals related to increasing student achievement and supporting high quality teaching and learning in Calvert County's public schools.

Calvert County Land Preservation, Parks and Recreation Plan, 2014 (incorporated by reference) - This plan presents a comprehensive overview of the county's recreation, parks, and open space. It lists potential sites for land acquisition and park expansion. The plan update is underway in 2017.

Comprehensive Solid Waste Management Plan, (incorporated by reference) - This plan explains the county's waste collection and processing system and assesses future needs.

Planning Framework

This chapter provides an overview of Calvert County’s community facilities, which include the public, private, and not-for-profit agencies and institutions that provide public services to county residents. It assesses the current state of the schools, parks, recreational facilities, emergency services, healthcare facilities, and solid waste disposal service available to residents and plans for future needs.

Calvert County’s population is projected to grow by 10,000 residents between 2015 and 2040. If this growth occurs according to the land use principles in this Comprehensive Plan, most growth will occur in Town Centers and Villages. Community facilities and services such as schools, healthcare facilities and recreation programs are key elements to fostering multi-generational communities.

Establishing Locations for Community Facilities

Community facilities are designed to serve the public through educational, recreational, emergency, health, and solid waste services and should be located where residents are most easily able to access them. Developing community facilities involves substantial public investment, and the siting of these facilities should focus on locations with the greatest population demand. Planning for community facility development should consider future land use patterns, taking into account the Comprehensive Plan’s goals to concentrate development in Town Centers and Villages while focusing on land preservation in rural areas. The following principles should be used to guide the development of community facilities:

- Community facilities should be located within and in close proximity to Town Centers and Villages where infrastructure is available (e.g., water facilities, sewer facilities, roads, sidewalks, public transit). These areas are planned to have future highest population densities that will provide best pedestrian, bicycle, and transit access.
- Community facilities should be sited near other concentrations of civic or commercial buildings.
- Multiple uses should be considered when locating and designing new public buildings, including schools and community centers.
- Development proposals should incorporate community facilities and assist in their construction.

Education

Elementary and Secondary Schools

Calvert County Public Schools (CCPS) is a strong public education system that serves children from pre-kindergarten to high school. CCPS has twenty-five schools, including thirteen elementary schools, six middle schools, four high schools, the Career and Technical Academy, and a special education center. Calvert County’s existing public school facilities have sufficient space to accommodate Calvert County’s current and future student population until at least 2026. School enrollment in the county is projected to decrease slightly through 2026 despite some countywide population growth.¹

¹ Calvert County Educational Facilities Master Plan for FY2018

Table 10-1 Calvert County Public Schools

Grade Level	Number
Elementary	13
Middle	6
High	4
Career and Technical Academy	1
Special Education Center	1

Table 10-2. Full Time Equivalent (FTE) Enrollment Projections by Grade

Grade	2015 Enrollment	Projection 2026
Kindergarten	982	1050
1st	1077	1080
2nd	1130	1100
3rd	1168	1124
4th	1154	1146
5th	1151	1147
6th	1200	1188
7th	1302	1203
8th	1307	1253
9th	1303	1286
10th	1320	1300
11th	1248	1195
12th	1294	1289
Special Education	--	43
Total	15636	15404

While there is no immediate need for construction of additional schools, some of the county’s public school buildings are aging and require renovation or replacement. Northern High School was granted funding in FY 2016 for a full building replacement, which began in fall of 2016. A feasibility study for the

renovation and expansion of Beach Elementary School is scheduled for FY 2020. Calvert Country School received funding in FY 2018 for remodeling and HVAC replacement. Calvert County Public Schools will also undergo smaller facility improvements for many of its school buildings, such as HVAC upgrades, roof replacements, and improvement of stormwater management systems, to keep its facilities up-to-date.²

CCPS is pushing to modernize learning environments within schools to make them consistent with 21st century educational best practices. This initiative is designed to model classrooms after college and workplace environments with open space for collaboration, integration of technology into the classroom, reconfigurable shelving and desks, and robust bandwidth to support online learning.

Several of the Town Centers and Villages have at least one school within their boundaries. The schools serve as centers of community gathering and identity. Strong connections between the schools, residential areas and activity centers can foster vibrancy and a sense of community.

Four private schools are located in Calvert County and provide education to four percent of Calvert County's students.

Higher Education

The College of Southern Maryland has a campus in Prince Frederick, which offers Associate degrees in Arts, Teaching, Science, Engineering and Applied Science. The College of Southern Maryland includes a network of campuses in Southern Maryland that provide more than 100 programs, from Biological Sciences and Environmental Studies to Hospitality and Veterinary Studies. The campus in Prince Frederick is a significant asset to Calvert County that provides higher education opportunities, career development programs, and resources to support local businesses. The College of Southern Maryland and the county government support expanding the College of Southern Maryland to provide four-year degrees in addition to its existing Associate degree programs.

The University of Maryland's Chesapeake Biological Laboratory in Solomons leads national research in fisheries, estuarine ecology, environmental chemistry and toxicology. The research produced at the laboratory informs state and national policy on a range of major environmental issues, such as fisheries management and environmental chemistry. In addition to providing cutting-edge research, the Chesapeake Biological Laboratory provides events and learning opportunities for the public through programs at its visitor center, Science for Citizens seminars, faculty speaking events in the community, and volunteer opportunities for residents.

The Morgan State University Patuxent Environmental & Aquatic Research Laboratory (PEARL) is located in St. Leonard Maryland. Research conducted at the PEARL is designed to increase the understanding of

² Calvert County Adopted Operating and Capital Budget Fiscal Year 2018

coastal ecosystems so that they may be properly managed and protected. It has a primary focus on the Chesapeake Bay and its tributaries.³

These higher education resources can support existing businesses and foster the creation of spin-off entrepreneurial activity and new businesses. Highlighting the programs and activities of these institutions create the sense of a community looking toward the future.

Libraries

The Calvert County library system provides residents with access to physical and downloadable reading and viewing material, public computers and other technologies, classes and events for all ages to build community, knowledge, understanding and engagement to support the county's vision. Calvert Library has four locations and a Mobile Services department. The main library is located in Prince Frederick with three branch libraries: Fairview, Twin Beaches, and Southern. In 2016-2017, Calvert Library conducted an analysis of the current library facilities and services and future needs with the assistance of Providence Associates LLC and input from the public. The Calvert Library Facilities Master Plan 2017-2037 (August 8, 2017) recommends a new library in the Twin Beaches area (Chesapeake Beach/North Beach), a permanent, county-owned library for the Southern Branch, and that the Fairview Branch be renovated and expanded.

Calvert Library provides a variety of resources beyond its traditional role of providing the public with access to information. Calvert Library promotes technological literacy by offering access to computer software and equipment, including 3D printing, Wi-Fi, and computer skills training. The library assists individuals with economic opportunities through the Small Business Resource Center, assistance with career and job search help, online databases for taking classes and practice tests for certifications, and financial education.

Parks and Recreation

Parks and recreation planning and acquisition goals are established in Calvert County's Land Preservation, Parks and Recreation Plan (LPPR Plan), which is currently being updated.

The purpose of the LPPR Plan is provide key information, goals, and recommendations to guide the county's management and enhancement of its system of public parks, open spaces, and preserved lands over the next five years. Another purpose is to maintain the county's eligibility to participate in Program Open Space, the State of Maryland's program which provides funding and technical assistance for the planning, acquisition, and development of recreation and open space areas. The current and the updated LPPR plans include detailed maps showing the locations public parks and recreation sites.

³http://www.morgan.edu/research_and_economic_development/patuxent_environmental_and_aquatic_research_laboratory/about_pearl.html. Accessed 10-16-2017

Parks and Trails

Calvert County has a robust system of parks and trails that include natural resource and park facilities on a neighborhood, state, and national scale.

As Calvert County continues to develop its park system, certain principles should be followed to align park development with the county's land use goals to concentrate development in Town Centers and Villages while preserving rural and natural areas. Each Town Center and Village should serve as the focal point of recreation for residents of the Town Center and Village and their surrounding areas. Each Town Center and Village should have:

- A town park or “village green”
- An in-town pedestrian and bikeway system that connects residential areas, activity centers and schools
- An outdoor public facility designed primarily for active team sports
- An indoor community center capable of providing a range of activities for all age groups.

Neighborhood recreational facilities, such as pedestrian and bicycle networks, small community centers and open space should be included in developments with 50 or more units. These facilities would typically be sized to meet the need of the nearby residents and be privately owned and managed.

In addition to park and recreational development within Town Centers and Villages, the county seeks to actively expand its rural parkland by acquiring key natural, cultural and historic sites while they are still available and land banking this land. Calvert County is required to submit a Program Open Space Annual Program to the Maryland Department of Natural Resources and the Maryland Department of Planning each year in order to remain eligible for Program Open Space funds. The county's Open Space Annual Program lists the potential land acquisition and development projects in the county.

Recreation

Calvert County offers a variety of recreational opportunities for residents, spanning from programming at community centers and parks to natural resource areas. Calvert County strives to maintain Town Centers and Villages as the focal points for community-based recreation, and it expanding larger-scale nature-based recreation areas throughout the county.

The Department of Parks & Recreation provides opportunities for healthful, enjoyable, lifetime leisure activities to our entire community through a comprehensive program of recreational activities in the community centers, aquatic facilities, the public schools and the county parks. Community-based recreation is led by the Recreation Division, which plans and implements active recreational programming in Calvert County, such as sports teams, community centers and aquatic facilities. The Recreation Division coordinates recreational activities in the community centers, public schools, and County parks.

The Calvert County Natural Resources Division manages passive recreation opportunities, such as nature observation, hiking areas, horseback riding trails, and canoeing and kayaking facilities. The Natural Resources Division maintains many of the county's natural parks, including the Battle Creek Cypress Swamp Sanctuary and parks along the shores of the Chesapeake Bay and Patuxent River. The division

focuses on preserving, managing, and operating natural resources areas to provide outdoor recreation and educational opportunities for the public.

The county also provides specialized recreation facilities, including public boat access to the Patuxent River and Chesapeake Bay, fishing piers, a campground, a skate park, dog parks, a golf course, an indoor aquatic center, and outdoor pools.

Calvert County has several local, state and national trails that extend through the county. These trails include the Captain John Smith Chesapeake National Historic Trail, Star-Spangled Banner National Historic Trail, National Underground Railroad Network to Freedom, Chesapeake Gateways Network, Fossils and Farmscapes Ramble, and Patuxent Wine Trail. Two historic railways provide the potential for creating linear trails: Chesapeake Beach Railway and the Baltimore & Drum Point Railroad.

The Calvert County Land Preservation, Parks, and Recreation Plan identifies a deficit of recreation facilities for baseball/softball, basketball, tennis, outdoor pools, picnic shelters, skate parks, equestrian trails, kayak and canoeing launch sites, and swimming at beaches and rivers. These recreational facilities should be prioritized as the Calvert County Department of Parks and Recreation and Division of Natural Resources continue to expand recreational opportunities in the county.

Parks and Recreation Funding

Recreational programs and development projects are funded through a recreation excise tax on all new residential dwellings, general obligation bonds, the county's general fund, and the county's local share apportionment from the State's Program Open Space. Program revenue and user fees also support the Parks and Recreation programs and facilities.

Public Safety

Public Safety Facilities

Public safety facilities are police, animal control, fire and rescue facilities that support Calvert County residents in emergency situations. These facilities are distributed throughout the county and sited primarily in Town Centers and Villages, where the county's population density is highest. The county has seven fire stations, six police stations, two rescue stations, and two 911 call centers. The county began construction on a new Rescue Squad building in Prince Frederick in 2017. While Calvert currently uses the shared Tri-County Animal Shelter in Hughesville, Charles County, the county is working to open its own animal control center in Prince Frederick. Table 10-3 provides a list of the public safety facilities.

The Calvert Control Center provides communications to police and fire and Emergency Medical Services (EMS) by receiving 911 emergency calls and dispatching them to the appropriate response agencies.

Police protection is provided by the Calvert County Sheriff's Office and the Maryland State Police, both centrally located in Prince Frederick. The Sheriff's Office also contracts with North Beach and Chesapeake Beach to provide police patrols in the incorporated towns. The Resident Trooper Program is contract service with the Maryland State Police that provides police service to the school system.

The Detention Center/Treatment Facility maintains custody and control of all committed inmates. The county uses monitored home detention and offers a variety of treatment and educational opportunities to address the underlying circumstances that contribute to crimes.

The Fire, Rescue and Emergency Medical Services Division is staffed fully by volunteers, which reduces the burden on taxpayers, but presents challenges with retaining enough volunteers to fulfill the department's needs. EMS faces a key challenge with recruiting and retaining volunteers to provide fire, rescue and emergency services, particularly with an increased demand for advanced life support in the county. A 2016 memo by the Fire-Rescue-EMS Coordinator highlights the EMS system challenges with providing basic life support ambulance and advanced life support paramedic service. It states the need to evaluate the use of contracted or private ambulance services, focus on improving daily EMS operations with Advanced Life Support and Basic Life Support, and implement cost recovery strategies. It also stresses evaluating incentives for increasing recruitment and retention of EMS volunteers through strategies such as property tax reduction and offering health insurance.⁴

⁴ Department of Public Safety Fire-Rescue-EMS Division (2016), Calvert County's Emergency Medical Services-System Challenges, <http://www.co.cal.md.us/DocumentCenter/View/14000>

Table 10-3: Public Safety Facilities in Calvert County

Name	Type
North Beach Volunteer Fire Department – Company 1	Fire
Prince Frederick Volunteer Fire Department – Company 2	Fire
Solomons Volunteer Fire Department – Company 3	Fire
Dunkirk Volunteer Fire Department – Company 5	Fire
Huntingtown Volunteer Fire Department – Company 6	Fire
Saint Leonard Volunteer Fire Department – Company 7	Fire
Solomons Volunteer Rescue Squad and Fire Department	Fire
Solomons Island Police Substation	Police
Chaneyville Police Substation	Police
Calvert County Sheriff's Office	Police
State Police Barrack Prince Frederick	Police
State Police Southern Regional Office	Police
Campus Police: College of Southern Maryland	Police
Maryland Department of Natural Resources Police	Police
Volunteer Rescue Service Company 4 Prince Frederick	Rescue
Calvert Advanced Life Support – Company 10	Rescue
Calvert Emergency Communications – Main 911 Dispatch Center	911 Call Center
Calvert County Backup 911 Center	911 Call Center
Emergency Management Division	Office

Health and Human Services

Healthcare Facilities

The local Health Department is responsible for coordinating all basic public health services in Calvert County. In addition to traditional medical services, the Health Department provides preventative health activities and wellness programs such as nutrition counseling, fitness assessment, and health screening.

Calvert Memorial Hospital in Prince Frederick is the central hub of healthcare in the county. Located in the middle of the county and adjacent to MD 4; it has 100 inpatient beds and 18 subacute beds on the Transitional Care Unit. The Solomons Medical Center is a branch of Calvert Memorial Hospital that offers physicians and specialists, physical therapy, and urgent care. Dunkirk and Prince Frederick also have urgent care facilities.

The County has three nursing homes with a total of 278 beds. New nursing home facilities in the county should be located in Town Centers and Villages.

Other healthcare facilities are located outside of Town Centers and many of them are assisted-living facilities.

Community Support Centers

Community support centers are any institutions that provide basic needs or a community benefit including government buildings, food banks, and substance abuse centers. Calvert County has almost seventy community support centers. Over half of the county's community support centers are in Prince Frederick. There are no community support centers in Owings, Dunkirk, or St. Leonard.

Solid Waste Management

The Department of Public Works, Solid Waste Division monitors the operation of the Appeal Landfill, Appeal Transfer Station, seven convenience center locations, recycling activities, a bulk pick-up item program and environmental monitoring for the Appeal and Barstow landfills.

Calvert County does not provide curbside collection of solid waste or recyclables. Instead, it offers seven Convenience Centers for residents to dispose of their trash and recyclables independently. Approximately 55 percent of the estimated residential waste generated in the county is received at these seven Convenience Centers, while the remaining 45 percent is managed through private waste management companies. Convenience Centers are distributed throughout the county to ensure that residents can easily access them. The county completed a large-scale expansion project of the Mt. Hope Convenience Center in 2017, which enlarged the center, improved access to waste offloading areas, and reoriented traffic patterns to minimize traffic disruptions around the facility. The relocation of the Lusby Convenience Center to the Appeal Landfill began in September 2017. The new Appeal Convenience Center will provide improve waste disposal services for the residents in the southern end of the county.

Commercial waste is not permitted in Customer Convenience Centers; therefore, most businesses hire private solid waste collection contractors. Industrial waste in Calvert County is primarily recycled or reused, self-hauled, or hauled by private hauler to the Appeal Transfer Station.

Calvert County has one landfill, the Appeal Landfill, but very little of the waste generated in Calvert County is deposited in this landfill. Most waste deposited in the Appeal Landfill is household waste, petroleum contaminated soil, asbestos and large animals. The bulk of waste collected in Calvert County's Convenience Centers is taken to the Calvert County Transfer Station and subsequently transported to the King George Landfill in King George County, Virginia.

Calvert County also has two permitted land clearing debris landfills:

- Howlin Land Clearing Debris Landfill
- Hance Land Clearing Debris Landfill

Goals, Objectives and Strategies

Goal 1: Maintain the high quality of Calvert County's educational facilities: schools, colleges, and libraries.

Objective 1: Continue to fund improvements to the Calvert County schools to provide facilities that support education programs meeting the needs of the 21st century citizens and workers.

- Pursue Capital Improvement Program (CIP) funding for facilities upgrades and modernization.
- Continuously evaluate the technology used in the schools to keep up with advances in this rapidly changing environment

Objective 2: Increase higher education opportunities in the county.

- Support the expansion of the College of Southern Maryland to offer four-year bachelor's degree programs.
- Encourage the College of Southern Maryland to offer non-degree technical training required by Calvert County businesses.

Objective 3: Fund construction and renovation of Calvert Library locations to provide 21st century facilities that support public education, accessible to all through multi-modal transportation and communication links.

- Deploy a mobile library to serve underserved populations and neighborhoods in the county.
- Construct a new library in the Twin Beaches area within the Town Centers of Chesapeake Beach and North Beach.
- Renovate and expand the Fairview Library.
- Select a new location for the library serving southern Calvert County within the Town Center of Lusby, in a location accessible by all transportation modes.
- Continuously update available technology to provide citizens with access and expand digital literacy.

Objective 4: Connect public schools, the College of Southern Maryland and libraries to the surrounding residential areas and larger communities through programs and multi-modal transportation links.

- Support accessible partnership programming among the public schools, College of Southern Maryland, and Calvert Library.
- Develop public transportation links between public schools, College of Southern Maryland, and Calvert Library.
- Provide bike racks and safe biking opportunities between public schools, College of Southern Maryland, and Calvert Library.

Goal 2: Provide access to a variety of quality recreational environments and opportunities in Calvert County.

Objective 1: Increase the amount of land area dedicated to recreation and natural resources.

- As the county's population grows, the inventory of parks and recreation assets and programs, as well as resources of the Department of Parks and Recreation should increase in a corresponding manner to ensure the continued delivery of high quality programs, facility maintenance, and infrastructure management.
- Target the development of any new indoor and outdoor sports fields or courts, and/or other active recreation components in or near Town Centers and Villages.
- Plan for the creation and/or expansion of centrally located parks and green spaces in Town Centers and Villages.
- Select locations for parks that are easily accessible to pedestrians and bicyclists living in the Town Centers and Villages.
- Continue to evaluate existing linear corridors, rights-of-way, and other potential areas for future trail development.
- Seek to acquire rights-of-way and open space through zoning, or subdivision entitlement process to utilize for future trail creation.
- Seek to acquire waterfront property capable of supporting active and passive recreational usage.
- When selecting sites for community support centers, parks and other community facilities, analyze options for restoration and adaptive re-use of historic buildings and sites.

Objective 2: Ensure that a wide selection of public recreational facilities and programs are provided to meet the interests and needs of all ages, incomes, and abilities.

- Enhance the network of recreational sites and facilities, including hiker/biker and horseback riding trails, based on the unique natural, cultural and historical features of the county.
- Continue to improve and expand opportunities for public access to the Chesapeake Bay and the Patuxent River.
- Continue to create, support, and promote public water trails in Southern Maryland.

- Investigate opportunities to increase access, parking, and comfort features at existing public landings and waterfront park sites to allow for increased boat access and usage, and improved user experience.
- Provide safe access to parks and recreational facilities including, where feasible, pedestrian and bicycle access.
- Create trails and paths within town center areas that connect with outlying parks and open spaces.
- Continue to require onsite neighborhood recreational facilities in townhouse and multifamily developments and in single-family detached neighborhoods of 50 or more houses. Require recreation fees collected through the excise tax for all new houses, and use fees to provide recreational sites and facilities at locations convenient to those who paid the fees.
- Expand recreational opportunities by establishing an intergovernmental review procedure for the design or renovation of all new public buildings including schools, colleges, and community centers to help promote effective and efficient multiple-use of these facilities.

Objective 3: Increase the variety of uses of community facilities.

- Consider increasing the use of schools as community centers and providing community after-hours access when designing renovations or new schools.
- Encourage cultural celebrations at the neighborhood, community, and county level, particularly those that bring together diverse groups.

Objective 4: Expand community involvement in recreational programming.

- Develop community project and service awards and provide “seed money” for such projects.
- Encourage strategies to make it easier for communities to provide recreation and community facilities without an overwhelming insurance burden.

Goal 3: Ensure that Calvert County has adequate healthcare facilities and programs.

Objective 1: Provide education and necessary services to improve the county’s health and wellbeing.

- Maintain a central source of information concerning available health and social programs. Use public access TV, the county’s website, and social media accounts to present wellness programs.
- Encourage health and social services providers to operate at times convenient to those who are unable to make appointments during normal operating hours.
- Investigate the need for and economic feasibility of operating multi-agency facilities in community centers.
- Investigate the need for and ability to develop a standardized data form for clients. Where appropriate, protecting confidentiality, share data among the agencies.
- Encourage the development of supervised teen activities and/or special after-school programs in communities.
- Promote a healthy environment free of alcohol and other drug abuse.
- Support the expansion of school-based substance abuse programs.

- Expand mental health programs for vulnerable populations.
- In collaboration with the Department of Social Services, support an Adult Protective Services Program to prevent elder abuse, neglect and exploitation.
- Develop family resource centers, including classes, support groups, information, library, and reference hotline.

Objective 2: Provide care options for senior citizens in Calvert County.

- Encourage the establishment of additional or expanded assisted-living facilities and nursing homes and the related services to meet current and projected needs.
- Encourage affordable programs that allow the physically and mentally handicapped to stay in their homes and have adequate care and access to services and programs.
- Encourage the development of a long-term care and supportive services plan for Calvert County senior citizens

Goal 4: Support public safety programs, strategies, and facilities development.

Objective 1: Ensure the coordination of efforts and services between state and local governments and between local government departments and divisions in developing effective public safety programs and strategies.

- Plan the expansion of public safety services and facilities to coincide with projected population growth and identified needs.
- Focus primary attention on crime prevention.
- Ensure that adequate space is provided at the Detention Center.
- Expand marketing of community programs that can help provide after school supervision and/or social services.
- Encourage neighborhood crime prevention programs, including community policing.
- Maintain a strong, ongoing drug and alcohol abuse prevention program.
- Continuously analyze the functionality of the 911 telephone equipment and infrastructure at the Calvert Control Center.

Objective 2: Ensure that the Emergency Medical Services is able to meet the county's needs.

- Continue to implement and review for adequacy the county Fire-Rescue-Emergency Medical Services Master Plan.
- Continue to monitor response times and periodically evaluate the need for additional stations and personnel.
- Implement a community awareness campaign.
- Evaluate the use of contracted or private ambulance services.
- Consider cost recovery practices for EMS services.
- Evaluate incentives for increasing recruitment and retention of EMS volunteers.

Goal 5: Maintain well-managed and effective solid waste and recyclable materials management systems in Calvert County.

Objective 1: Implement and maintain programs that promote source reduction, material reuse, and recycling over disposal.

- Promote source reduction, recycling and mulching initiatives in the county to further reduce the amount of waste requiring disposal.
- Evaluate recycling program effectiveness at least annually to measure progress toward meeting the county's recycling goal of 35%; and implement new programs or policies as needed to maximize the effectiveness of county recycling efforts.
- Establish commercial and industrial reporting requirements to ensure that the county can accurately project and report recycling quantities and future waste and recyclables management needs.
- Promote the recycling of land-clearing debris and work with local compost, grinding, and mulching contractors to develop reuse and recycling applications and/or find markets for the recycling and/or beneficial use of these materials.
- Promote the recyclability of construction and demolition debris and work with local contractors to develop reuse and recycling applications and/or find markets for the recycling and/or beneficial use of these materials.
- Continue to promote the recycling of bulky waste items generated in the county.
- Investigate the potential to establish an exchange program for construction waste from home repair/renovation projects.
- Expand and promote the county's "E-cycle" program to maximize the recovery and reuse/recycling of the growing electronics waste stream.
- Expand education for waste reduction and waste minimization.

Objective 2: Ensure cost effective and sustainable material management services to accommodate current and future county-generated and/or county-managed residential and commercial municipal solid waste and recyclables.

- Evaluate the potential for county-administered contract collection for residential waste and recyclables and, if determined to be feasible, implement collection in Town Centers and Villages.
- Evaluate the potential to establish or participate in a hazardous waste exchange where certain household hazardous waste (HHW) materials can be reused or recycled.
- Assist in implementing the county's emergency spillage and leakage plan if a hazardous waste spill were to occur in the county.
- Promote and assist in a medication disposal program initiative.

Objective 3: Ensure adequate facilities and infrastructure to accommodate current and future county-generated and/or county-managed residential and commercial municipal solid waste and recyclables.

- Provide Calvert County Customer Convenience Centers no more than ten miles from their residences.
- Monitor the need for additional land-clearing disposal capacity within the 10-year planning period.
- Monitor the need for additional in-county disposal capacity.
- Monitor the need for additional in-county recycling processing services. Consider private marketing and recycling processing or public/private partnerships.

Objective 4: Collectively plan future initiatives, to the greatest extent possible, with internal county departments and regional county jurisdictions, councils, and other potential partnerships.

APPENDIX A. LIST OF ACRONYMS

ACRONYM	DEFINITION
ACSC	Area of Critical State Concern
ADA	Americans with Disabilities Act
ALS	Advanced Life Support
APD	Agricultural Preservation District
B&F	Department of Budget and Finance
BLS	Basic Life Support
BOCC	Board of County Commissioners
BOE	Board of Education
BRF	Bay Restoration Fund
CA	County Administrator
CCPS	Calvert County Public Schools
CIP	Capital Improvement Plan
CR	Department of Community Resources
CSA	Community-Supported Agriculture
CSM	College of Southern Maryland
DNR	Maryland Department of Natural Resources
ED	Department of Economic Development
EDUs	Equivalent Dwelling Units
EMS	Emergency Medical Services
ENR	Enhanced Nutrient Removal
ESD	Environmental Site Design
ESD	Environmentally Sensitive Design
FFD	Farm and Forest District
FSDWA	Federal Safe Drinking Water Act
GS	Department of General Services
H₂S	Hydrogen Sulfide
HD	Health Department
HHW	Hazardous Household Waste
HVAC	Heating, Ventilation, and Air Conditioning
IDAs	Intensely Developed Areas
LAR	Leveraging and Retirement
LDAs	Limited Development Areas
LE	Listed as Endangered
LNG	Liquefied Natural Gas
LPPR Plan	Land Preservation, Parks and Recreation Plan
LRTP	Long Range Transportation Plan
LT	Listed as Threatened
MALPF	Maryland Agricultural and Preservation Foundation
MC	Marine Commercial
MCL	Maximum Contaminant Level
MDP	Maryland Department of Planning
MET	Maryland Environmental Trust
MPO	Metropolitan Planning Organization

ACRONYM	DEFINITION
MTA	Maryland Transit Administration
MW	Megawatts
MWAQC	Metropolitan Washington Air Quality Committee
NOx	Nitrogen Oxide
NPDES	National Pollution Discharge Elimination System
PAR	Purchase and Retirement
PFA	Priority Funding Areas
PILOTs	Payments in Lieu of Taxes
PPA	Priority Preservation Area
PPP	Public Participation Plan
PTB	Puritan Tiger Beetle
RC	Rural Commercial District
RCAs	Resource Conservation Areas
REC	Renewable Energy Credit
RPS	Renewable Energy Portfolio Standard Program
SHA	State Highway Administration
SSPRA	Sensitive Species Project Review Areas
STEM	Science, Technology, Engineering, and Mathematics
TDP	Transportation Development Plan
TDR	Transferable Development Rights
TIP	Transportation Improvement Program
TMDL	Total Maximum Daily Load
TN	Total Nitrogen
TP	Total Phosphorus
UPWP	Unified Planning Work Program
US EPA	United States Environmental Protection Agency
USDA	United States Department of Agriculture
USGS	United States Geological Survey
VOC	Volatile Organic Compounds
WHPA	Wellhead Protection Areas
WSSC	Washington Suburban Sanitary Commission
WWTP	Waste Water Treatment Plant