# CHAPTER 2

# COUNTY BACKGROUND INFORMATION

## 2.1 CHAPTER SUMMARY

Chapter 2 presents background information, including general historical and geographical information, on Charles County. Current and projected population, used to develop waste generation projections in Chapter 3, is presented in this chapter. A discussion of the solid waste management practices, policies, and intergovernmental and private sector agreements regarding municipalities and federal facilities within the County is also included. The status of zoning requirements and the *Charles County Comprehensive Plan* is also discussed.

## 2.2 BACKGROUND

### 2.2.1 Location and Setting

Charles County is a rapidly developing area located about 30 miles south of the Washington, D.C. Metropolitan Area. Over the years, Charles County has been able to remain as a diversified community with extensive waterfront, unique environmental resources, agriculture, woodlands, a rich historical heritage, and urbanized areas.

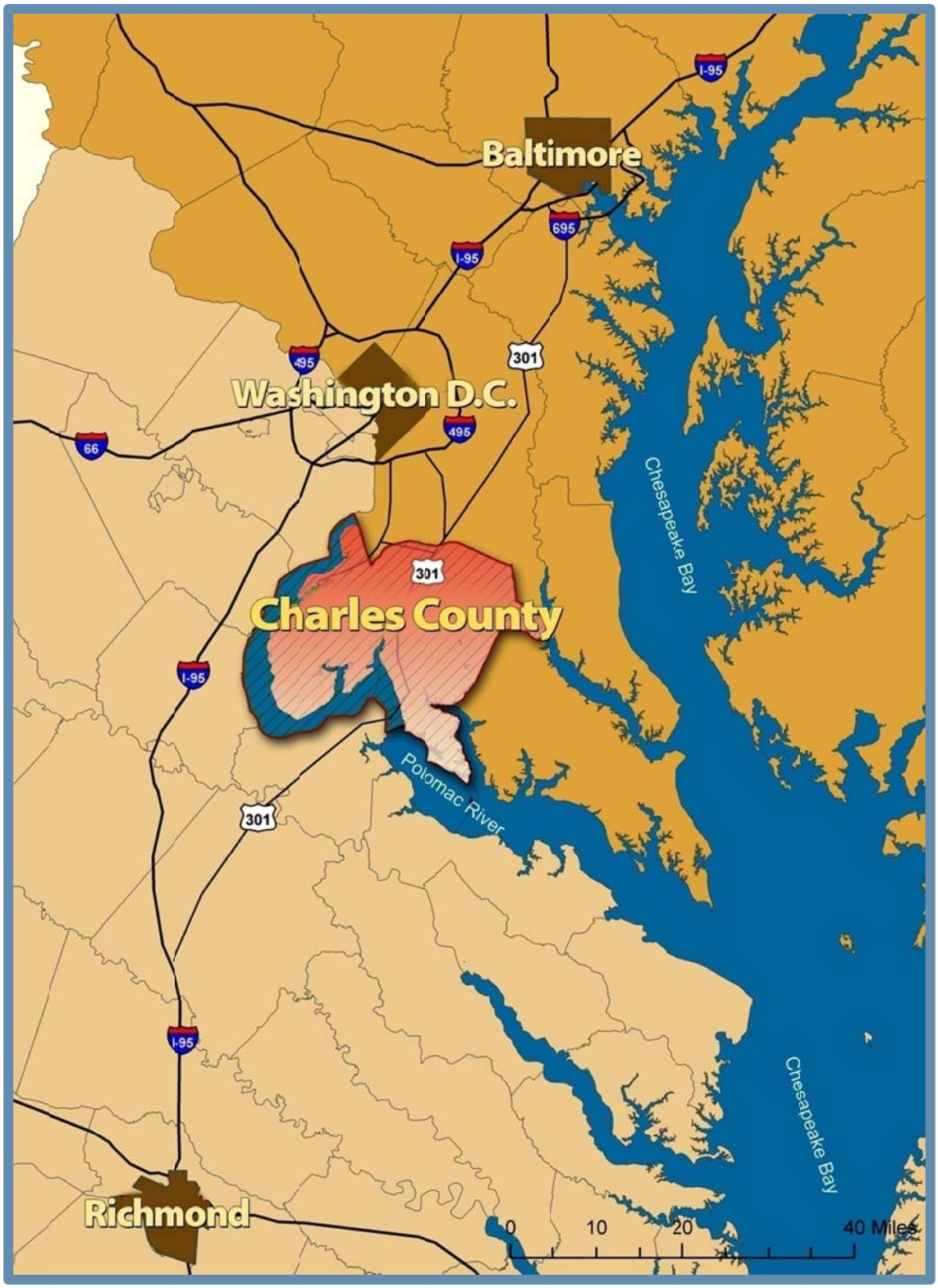
Charles County is located in southern Maryland, bordered by Prince George's County to the north and Calvert and St. Mary's Counties to the east. The County is bordered by the Potomac and Wicomico Rivers to the south, and the Patuxent River to the east (Figure 2-1).

Most of the land area in Charles County contains elevations ranging from 0 to 230 feet above sea level and is drained by tributaries of the Potomac River. The County is part of the Atlantic Coastal Plain, which forms the western shore of the Chesapeake Bay Region. Charles County is 458 square miles (293,120 acres) in area, with 183 miles of shoreline primarily on the Potomac River.

Growth and economic development is strongly influenced by the Baltimore and Washington highway corridors. Military installations, agriculture, and seafood harvesting industries also contribute to the local economy. As the County continues to urbanize, increasingly built-up areas are concentrating along the major highways (U.S. Route 301 and Maryland Routes 228 and 210).

Links with other cities in the Washington, D.C. suburban area and beyond are facilitated by Interstates 495 and 95, Maryland Routes 3, and 4, and US Route 50, as well as points south via the Potomac River Bridge.

*Figure 2-1*
*Charles County, Maryland*
*Vicinity Map*



### 2.2.2 History

Founded in 1658, Charles County is steeped in the traditions of Southern Maryland and retains many of the tobacco customs dating back three centuries. It is Maryland's fifth oldest county and is unique among the old counties in that it has all of its official records. Until 1895 the county seat was Port Tobacco, which also served as the business and cultural center of Maryland in colonial days. By 1890, Port Tobacco was losing its eminence as a port due to the silting of the river and the resulting impacts on the sailing vessels. The burning of the Port Tobacco courthouse in 1892 added to this loss of eminence and, in 1895, the county seat was relocated to La Plata.

Charles County was one of Maryland's least known counties until 1940 when the Potomac River Bridge was constructed. The opening of the bridge created an important north/south travel corridor on U.S. Route 301. Since 1950, population, housing and commerce have all expanded greatly due in part to the proximity to the Washington metropolitan area. The County is now a mixture of suburban development in the north-central and northwest sections of the County, interspersed with older rural and semi-rural development patterns elsewhere in the County.

### 2.2.3 Natural Characteristics and Resources

#### 2.2.3.1 Geography

Charles County has a land area of about 458 square miles, seventh in size among Maryland's 23 counties. The County measures approximately 29 miles from north to south and 32 miles from east to west. It is bounded by the Potomac River on the west and south; by Prince George's County on the north; and by St. Mary's County on the southeast. Elevations vary from sea level along the Potomac River to 230 feet near Waldorf. The Washington Beltway (I-495) is only 15 miles from Waldorf, affording access to Washington, Baltimore, and other points on the eastern seaboard.

#### 2.2.3.2 Drainage Basins

All streams and water bodies in Charles County empty into the Potomac or Patuxent Rivers, and ultimately the Chesapeake Bay. Major water bodies within the County include the Wicomico River, Zekiah Swamp, Gilbert Swamp, Port Tobacco River, Nanjemoy Creek, Mattawoman Creek, and the Pomonkey Creek. The eastern half of the County is drained by the Zekiah Swamp and its tributaries, including the Gilbert and Jordan Swamp Runs. The northern portion of the County is drained by the Mattawoman and Pomonkey Creeks. The central and southwestern portions of the County are drained by the Port Tobacco River, Nanjemoy Creek, Wards Run, and Mill Run.

#### 2.2.3.3 Water Resources

Although Charles County is bordered by both the Patuxent and Potomac Rivers, their use as surface water supply sources is constrained because of their salinity concentrations. The County also has a large number of smaller rivers and streams which are not capable of any large-scale water supply. There are presently three lakes in Charles County with a surface water area of about 12 square miles.

Five major water-bearing formations, or aquifers, are found beneath Charles County, sloping from west to east. They are found in the Patuxent, Patapsco, Raritan, and Magothy formations of the Cretaceous system, and the Aqua Greenstone of the Eocene series. The major water supply sources are the Magothy, Patapsco and Patuxent aquifers. These aquifers are found at depths ranging from 300 to 1,000 feet below the ground elevations. Groundwater provides the vast majority of the drinking water in Charles County, with a supplemental supply of surface water from the Potomac River, via a single connection to the Washington Suburban Sanitary Commission (WSSC) in Waldorf. In a few places, water is available from springs, but in most locations water is drawn from wells.

#### 2.2.3.4 Topography

Located in the Atlantic Coastal Plain, Charles County is a relatively low-lying area. Elevations range from 10 feet above sea level near the Potomac River to approximately 230 feet near Waldorf. Large portions of the County are exceedingly flat, with a gentle slope toward the Chesapeake Bay, or toward local drainage features. Broad plateau formations with sides dissected by drainage features are common throughout most of the County. The dissections show the easily eroded clays, sands, and gravels underlaying the plateaus. In some areas, dissection is incomplete and flat areas, several miles across, have not yet been reached by headward cutting streams. Stream valleys affect local topography throughout the County.

Adjacent to the Potomac and Patuxent rivers are low-lying flats not more than 10 to 25 feet above sea level. Steeply-sided terrace formations are often present in these locations as well. These flats vary in width from a few feet, where the river current of the Potomac River washes strongly against the shoreline (e.g., northern areas near Indian Head and Potomac Heights), to more than a mile in the southern part of the County, such as Allen's Fresh. The interior of the County, along U.S. Route 301 from Faulkner (VA) to Prince George's County, is predominately flat. Outward from this plateau, dissection becomes more pronounced and the land is gently rolling and hilly.

#### 2.2.3.5 Geology and Soils

The geologic formations beneath Charles County are composed of gravel, sand, silt, and clay. These materials were transported by streams, particularly the Potomac River, from the Appalachian and Piedmont regions west and north of the County and were deposited in the form of alluvial fans and deltas. Tidal and marine mud and silt layers overlay dense, hard crystalline, metamorphic, and igneous rocks of the Precambrian Age. The crystalline rocks are deep below

the surface. Diatomaceous deposits are unique to this part of Maryland and are found throughout the County.

In the vicinity of Faulkner County, VA are unique surficial sediments which are a relatively young, thin veneer, approximately 30 feet in thickness, occupying elevations of 30 feet above mean sea level and consisting of gravel, sand, and silt. These sediments were deposited by the eastward flowing Potomac River as the river migrated slowly southeastward to its present location. Beneath this granular deposit is the Calvert formation of the Chesapeake Group, which is composed of the Fairhaven and Plum Point Marls. This formation overlies and tends to seal the surficial granular deposit from the older geologic units.

#### 2.2.3.6 Minerals

There are abundant mineral resources throughout Charles County which are found as alluvial deposits, chiefly in the form of construction-grade sand and bank-run gravel found just below ground surface. These minerals are used by the construction industry as aggregate material. Sand and gravel mining operations and processing facilities are found throughout the County. Clay and diatomaceous earth deposits are also prevalent in the Coastal Plain Province, but have limited distribution in Charles County. These clays and diatomaceous earth deposits are not currently mined in significant quantities. Mining of these materials may accelerate if market conditions change.

#### 2.2.3.7 Climate

Charles County has a temperate climate, affected to some degree by the water masses of the Potomac and Chesapeake Bay. Situated in the mid-Atlantic, the County has four well-defined seasons. The frost-free growing season typically occurs between April 20 to October 20. The coldest temperatures usually are in late January and early February. Snowfall may occur from November to April. The warmest temperatures usually occur in late July and early August. Mean temperatures (Fahrenheit) are 74.1 degrees in the summer and 36.3 degrees in the winter. The prevailing wind pattern is from the northwest during October to April and from the south and southwest from May to September. Annual precipitation averages 42.6 inches.

## 2.3 POPULATION AND EMPLOYMENT

### 2.3.1 Regional Setting and Growth Trends

Population distribution reflects the influence of the proximity to Washington, D.C. and the influences of local employment. The County's development district encompasses the northwest quadrant of the County from Waldorf to Indian Head, where the most densely populated areas of the county are located. Since 1990, the County has been achieving the Comprehensive Plan goal of directing 75 percent of new growth in the development district. Other population centers include the election districts of Pomonkey, La Plata, and Bryantown.

According to the 1990 Census, Charles County had a population of 101,154. The 1990 population was approximately 39 percent above the 1980 population of 72,751, making Charles County the third fastest-growing county in Maryland during this period. The latest figures released by the Census Bureau in 2010 showed the County's estimated population was 146,551.

The Metropolitan Washington Council of Governments considers Charles County among the outer suburbs (outside 20 mile radius of Washington, D.C.) which will be influenced by the metro area. The outer suburbs are forecasted to experience a 118 percent increase in employment during the period 1990 to 2020. Employment in Charles County is responding to the increase in residential growth with an increase in retail and commercial services. Industrial and manufacturing sectors generally respond to economic factors rather than residential growth.

In 2000, the largest sectors of employment were trade (retail and wholesale) at 28 percent, services (26 percent), government (17 percent) and construction (11 percent). While in 2010, the largest sectors of employment were services at 20 percent, government (19.4 percent), manufacturing (16.6 percent) and trade (11.7 percent). The largest single employer in Charles County is the Naval Surface Warfare Center at Indian Head.

### 2.3.2 Population and Employment Projections

Population projections for the County were developed using projections for housing units and the average number of persons per housing unit which were developed by the Charles County Planning and Growth Management Department. Charles County population and employment projections for the years 1990 through 2025 are provided in Table 2-1. These projections indicate that the population will increase by approximately 32 percent between the years 2010 and 2025 to a population of 193,914; employment in Charles County is projected to increase by approximately 13 percent from 2010 to 2025 to 68,150.

### 2.3.3 Effect of Growth on the Provision of Solid Waste Management Services

New development activity within Charles County is primarily located in the Development District and along the U.S. Route 301 corridor. The Development District includes the areas of Waldorf, St. Charles, Bryans Road, Indian Head and White Plains.

Increased residential growth provides for increased building and construction waste (rubble) and increased waste from the commercial sectors of the community. Building and construction waste as well as land-clearing waste comprises a large portion of the waste generated in the County and is making an additional demand on existing landfill capacity. The disposal of rubble and land-clearing debris in the County landfill is costly and significantly reduces available landfill capacity. Due to this circumstance, the county has not allowed rubble waste to enter the current landfill. Charles County considers the combined effort of recycling and the diversion of

disposing of rubble and land-clearing debris in other designated landfills an excellent opportunity to significantly extend the life of the sanitary landfill.

Charles County officials realize that the planning of growth is critical to the provision of efficient and cost-effective solid waste management services. The presence of existing development, infrastructure, and transportation reduce the cost and maximize the efficiency of solid waste and recyclable collection services. Controlled growth within development districts would minimize collection costs and increase the opportunity for modifying collection practices to meet the goals and objectives of this plan. Wide-spread growth, resulting in sparsely populated areas, would increase collection costs, increase vagrant dumping to avoid collection fees or trips to the landfill, and minimize the opportunity for modifying collection practices.

The primary growth management and land use concept developed in the *Charles County Comprehensive Plan* is that of the establishment of the "development district" generally located in northwestern Charles County. The development district is intended to serve as the principal center for population growth, services, and employment. Comprising the most suitable area for new population growth, by virtue of existing development, infrastructure, and transportation networks, this area is planned to receive 75 percent of the County's growth through the year 2025.

*TABLE 2-1*
*POPULATION AND EMPLOYMENT PROJECTIONS*

| Year | Housing Units | Population | Employment |
|---|---|---|---|
| 1990 | 34,487 | 101,154 | 39,400 |
| 1995 | 38,941 | 111,600 | 45,900 |
| 2000 | 43,903 | 120,546 | 49,800 |
| 2010 | 53,532 | 146,550 | 60,300 |
| 2020 | 65,245 | 177,181 | 66,900 |
| 2025 | 72,754 | 193,914 | 68,150 |

*Source: 2006 Charles County Comprehensive Plan*

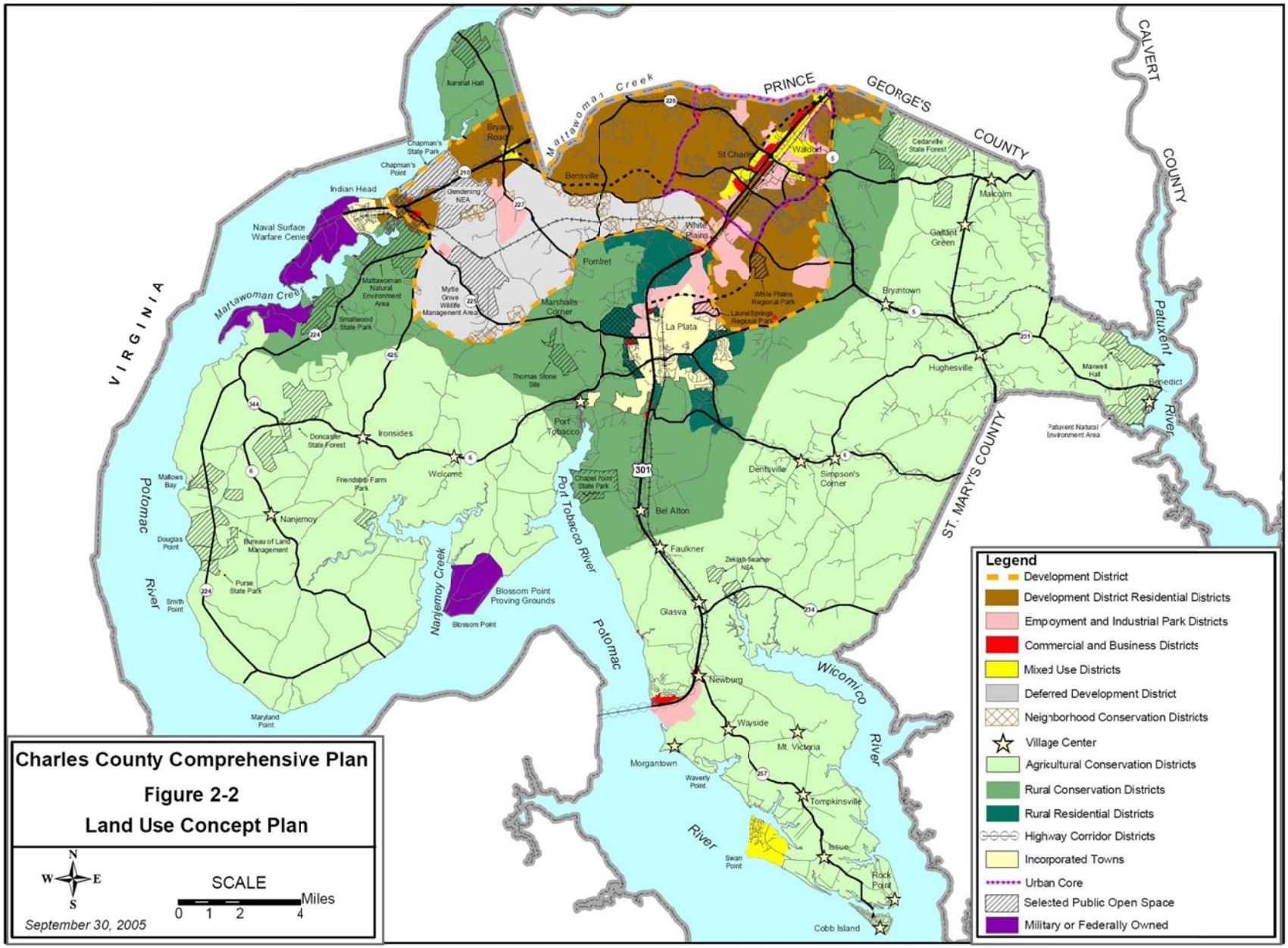
## 2.4 INCORPORATED TOWNS

There are three incorporated towns within Charles County: the Town of Indian Head, the Town of La Plata, and the Town of Port Tobacco. The locations of the three incorporated towns are shown in yellow in Figure 2-2.

The 2010 Census reports that the population for the Town of Indian Head is 3,844, the Town of La Plata is 8,753, and there are approximately 50 people in the Town of Port Tobacco. Due to its small size, the smallest incorporated town in the State, the Town of Port Tobacco is generally discussed as part of Charles County rather than as an incorporated town. The Town of La Plata serves as the center of the Charles County Government's administrative and institutional services.

## 2.5 FEDERAL FACILITIES

Federal facilities in Charles County include the U.S. Naval Surface Warfare Center and Naval Explosive Disposal Facility in Indian Head and the Blossom Point Proving Grounds. In addition, there are two properties owned by the National Parks Service in Charles County: the Thomas Stone Historical Site and the Piscataway National Park. The locations of these federal facilities are also shown in Figure 2-2.


Charles County Comprehensive Plan
Figure 2-2
Land Use Concept Plan
SCALE
Miles
0 1 2 4
September 30, 2005
Legend
Development District
Development District Residential Districts
Empoyment and Industrial Park Districts
Commercial and Business Districts
Mixed Use Districts
Deferred Development District
Neighborhood Conservation Districts
Village Center
Agricultural Conservation Districts
Rural Conservation Districts
Rural Residential Districts
Highway Corridor Districts
Incorporated Towns
Urban Core
Selected Public Open Space
Military or Federally Owned
PRINCE GEORGE'S COUNTY
CALVERT COUNTY
ST. MARY'S COUNTY
VIRGINIA
Potomac River
Mattawoman Creek
Nanjemoy Creek
Port Tobacco River
Wicomico River
Patuxent River
Indian Head
Naval Surface Warfare Center
Bryans Road
Bensville
St Charles
Waldorf
White Plains
Pomfret
Marshalls Corner
La Plata
Port Tobacco
Bel Alton
Faulkner
Glasva
Newburg
Wayside
Mt. Victoria
Morgantown
Tompkinsville
Issue
Rock Point
Cobb Island
Ironsides
Welcome
Nanjemoy
Dentsville
Simpson's Corner
Hughesville
Bryantown
Malcolm
Galtont Green
Benedict
Blossom Point Proving Grounds
Blossom Point
Marshall Hall
Chapman's State Park
Chapman's Point
Gendering NEA
Mattawoman Natural Environment Area
Myrtle Grove Wildlife Management Area
Smallwood State Park
Thomas Stone Site
Doncaster State Forest
Friendship Farm Park
Mallows Bay
Douglas Point
Bureau of Land Management
Purse State Park
Smith Point
Maryland Point
Chapel Point State Park
White Plains Regional Park
Laurel Springs Regional Park
Zekiah Swamp NEA
Waverly Point
Swan Point
Cedarville State Forest
Maxwell Hall
Patuxent Natural Environment Area

## 2.6 COMPREHENSIVE LAND USE POLICIES

The County Commissioners adopted the *Charles County Comprehensive Plan* on April 24, 2006. The Plan is the result of a joint effort of elected and appointed officials, professional land use planners, and a Citizens Work Group. The Plan presents policies and guidelines to serve the County for the duration of the 20-year planning horizon (2025).

The *Charles County Comprehensive Plan* consists of a land use map (Figure 2-2), goals, objectives, policies, and recommendations that will guide future land development. Other elements of the Charles County overall comprehensive planning program include: documents prepared to complete the comprehensive plan (e.g., *Charles County Critical Area Program*, and *Charles County Land Preservation, Parks, and Recreation Plan*); documents which will serve to implement the comprehensive plan (e.g., *Zoning Ordinance, Subdivision Regulations*); and documents which influence the comprehensive plan (e.g., *Comprehensive Sewer and Water Plan, Capital Programming, Comprehensive Plan for Schools, Charles County Comprehensive Solid Waste Management Plan, Public Safety Plan, Emergency Operations Plan, and Fire and Rescue Plan)*. The *Charles County Comprehensive Solid Waste Management Plan* coordinates the siting and operation of solid waste management facilities with the land use goals, objectives, and policies of the *Charles County Comprehensive Plan*.

Topics discussed in the *Charles County Comprehensive Plan* include the following:

- Growth Management and Land Use
- Economic Development
- Community Facilities and Services
- Historic/Cultural Preservation
- Agricultural and Forestry
- Community Development
- Transportation
- Natural Resource Protection
- Housing
- Implementation

In relation to solid waste management, the comprehensive plan presents goals, policies, and implementation strategies for many public services, including the management of solid wastes.

## 2.7 ZONING REQUIREMENTS

The *Charles County Zoning Ordinance* was adopted by the County Commissioners in August 1992, and has numerous text and map amendments since that time. This plan shall not be used to create or enforce local land use and zoning requirements. The zoning ordinance is designed to implement the comprehensive plan. The *Charles County Zoning Ordinance* presents one conservation zone, two rural zones, two village zones, four residential zones, four commercial zones, two industrial zones, one planned unit development zone, one waterfront planned

community, four planned development zones, and four overlay zones. A brief description of each zone is provided below.

- The Agricultural Conservation zone (AC) provides a full range of agricultural and farming activities, protects these established uses from encroaching development which may adversely affect the agricultural economy of the County, and encourages the right to farm in the County without undue burden on the landowner.

- The Rural Conservation (RC) and Rural Residential (RR) zones are intended to maintain rural character in the County areas consistent with the Charles County Comprehensive Plan objectives.

- The Village Residential (RV) and Village Commercial (CV) zones are located at existing centers of population or commerce in areas of the County outside the development district.

- The Low-density suburban Residential (RL), Medium-density suburban Residential (RM), High-density Residential (RH), and Residential Office (RO), concentrate residential development in areas identified as development districts in the *Charles County Comprehensive Plan*.

- The County has adopted an Urban Design Study to transform the central core of Waldorf into a vibrant urban center for the broader Waldorf area and Charles County. This area, known as Downtown Waldorf, is envisioned to be developed as a cohesive, attractive and walkable urban environment that serves as a hub for public transit. The County adopted new zoning in this area to establish this new type of mixed use development. Those zones are the Waldorf Central (WC) zone in the central core of Waldorf and the Acton Urban Center (AUC) zone, adjacent to the WC zone in the northern portion of the Waldorf core.

- Neighborhood Commercial (CN) and Community Commercial (CC) zones provide standards for the range of commercial uses from neighborhood business to highway-oriented commercial uses. The Central Business (CB) zone provides appropriate locations for high intensity commercial uses and encourages development consistent with a traditional "downtown" area. The Business Park (BP) zone concentrates business and light industrial uses in a park-like setting to promote economic development and job creation while protecting the environment and reducing impacts on the surrounding residential neighborhoods.

- General Industrial (IG) and the Heavy Industrial (IH) zones strengthen the economic environment of the County by recognizing existing industrial uses and promoting industrial development in order to broaden the County's tax base and create new jobs.

- The Planned Unit Development (PUD) zone is designated for St. Charles. Activity within this zone is bound by the requirements of Docket 90 and all other legally binding agreements executed between the County and the developer.

- Swan Point is designated as a Waterfront Planned Community (WPC). The activities within this zone are bound by Docket 250. No additional waterfront planned community zones will be considered.

- Planned Residential Development (PRD), Mixed-use Development (MX), Planned Employment Park (PEP), Transit Oriented Development (TOD), and Planned Manufactured Home Park (PMH) zones encourage innovative and creative design of residential, commercial, and industrial development, and provide a broad range of housing and economic opportunities to residents of the County consistent with the *Charles County Comprehensive Plan*.

- The Intense Development (IDZ), Limited Development (LDZ), and the Resource Conservation (RCZ) overlay zones provide special regulatory protection for the land and water resources located within the Chesapeake Bay Critical Area in Charles County. These zones implement the Charles County Critical Area Program, the Maryland Critical Area Law, and the Critical Area Criteria.

The purpose of the *Charles County Zoning Ordinance* is to regulate land uses in order to protect and promote the health, safety, morals, comfort, and welfare of the present and future inhabitants of Charles County. Zoning requirements implement the land use objectives of the *2006 Charles County Comprehensive Plan*. The solid waste management plan is an important component of the *Charles County Comprehensive Plan* and zoning requirements for solid waste management facilities and activities should support the above requirements.