

# Caroline County Solid Waste Management Plan 2021-2030



Caroline County Department of Public Works  
May 2021

**Public Hearing Date: May 11, 2021**

**Official Adoption Date: May 19, 2021**

**CAROLINE COUNTY  
SOLID WASTE MANAGEMENT PLAN  
2021-2030**

**CAROLINE COUNTY COMMISSIONERS**

Larry C. Porter, President  
Daniel J. Franklin, Vice President  
Wilbur Levensgood Jr.

Jeremy Goldman, County Administrator

**CAROLINE COUNTY PLANNING COMMISSION**

John Schmidt, Chair  
Keith Neal, Vice Chair  
Daniel Franklin, Commissioner Member  
Nancy Minihan  
Charles Mosca  
Jeffrey Powell  
Dr. Derek Simmons

**CAROLINE COUNTY AGENCY STAFF**

Ryan White, Director of Public Works  
Katheleen Freeman, Director of Planning and Codes

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# Planning Commission Recommendation

## *Caroline County Department of Planning & Codes*



Katheleen Freeman, Director  
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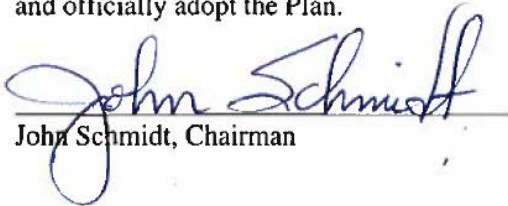
### **Planning Commission Recommendation**

**Subject: Solid Waste Management Plan**

**Staff Contact:** Katheleen Freeman, Director

**Recommendation:** On March 10<sup>th</sup> the Planning Commission Reviewed the Draft 2021-2030 Solid Waste Management Plan for Caroline County. The Planning Commission found the plan to be consistent with the Comprehensive Plan for Caroline County.

The Planning commission Recommends that the County Commissioners hold a public hearing and officially adopt the Plan.

  
John Schmidt, Chairman

# Statement of Adoption

## RESOLUTION #2021-006

### ADOPTION OF CAROLINE COUNTY SOLID WASTE MANAGEMENT PLAN 2021-2030

**WHEREAS**, the County Commissioners of Caroline County, Maryland (the “County Commissioners”) are empowered by Environment Article, Title 9, Subtitle 5, of the Annotated Code of Maryland to adopt and amend a Solid Waste Management Plan; and

**WHEREAS**, the proposed Solid Waste Management Plan (2021-2030) has been developed with the assistance of the Caroline County Department of Public Works and the Caroline County Department of Planning and Codes;

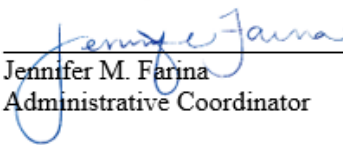
**WHEREAS**, the Caroline County Planning Commission has reviewed the proposed Solid Waste Management Plan (2021-2030) and recommended it to the County Commissioners for adoption; and

**WHEREAS**, the County Commissioners held a duly advertised public hearing on the proposed Solid Waste Management Plan (2021-2030) on May 11, 2021

**NOW THEREFORE, IT IS HEREBY RESOLVED BY THE COUNTY COMMISSIONERS OF CAROLINE COUNTY, MARYLAND** that the Caroline County Solid Waste Management Plan (2021-2030) is hereby adopted.


**ADOPTED/EFFECTIVE:**  
May 18, 2021

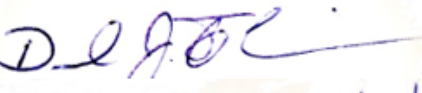
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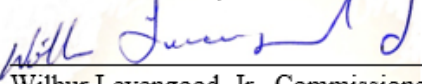
  
\_\_\_\_\_  
Jennifer M. Farina  
Administrative Coordinator

(SEAL)

**COUNTY COMMISSIONERS OF  
CAROLINE COUNTY, MARYLAND**

  
\_\_\_\_\_  
Larry C. Porter, President

  
\_\_\_\_\_  
Daniel J. Franklin, Vice President

  
\_\_\_\_\_  
Wilbur Levensgood, Jr., Commissioner



# Maryland

## Department of the Environment

Larry Hogan, Governor  
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary  
Horacio Tablada, Deputy Secretary

July 15, 2021

Ms. Katheleen Freeman, AICP., Director  
Caroline County Department of Planning and Codes  
403 S. Seventh Street, Suite 210  
Denton, Maryland 21629

Dear Ms. Freeman:

The Maryland Department of the Environment (“MDE”) has completed its review of Caroline County’s (the “County”) adopted Resolution No. 2021-006 for the County’s 2021-2030 Solid Waste Management Plan (the “Plan”). The County Commissioners adopted the Plan on May 18, 2021 and the County forwarded the Plan to MDE for its review and approval. MDE received the adopted Plan on May 20, 2021.

Based on this review, MDE determined that the adopted resolution satisfies the requirements of Sections 9-503, 9-505, and 9-1703 of the Environment Article, Annotated Code of Maryland, and Code of Maryland Regulations 26.03.03. In accordance with Section 9-507(a) of the Environment Article, Annotated Code of Maryland, the Plan is approved, provided the following change is made to the text of Twin Maple Composting Facility on Page 33:

1. Under “Permit Status,” replace “2016-GCF-0007” with “2021-GCF-0007” and “March 27, 2021” with “March 27, 2026.”

Section 9-506(b)(2) of the Environment Article, Annotated Code of Maryland, requires the County to submit a progress report to MDE at least every two years including any revisions or amendments to the County Plan that have been adopted. Since the County’s Plan was adopted on May 18, 2021, the County must submit to MDE its progress report on or before **May 18, 2023**.

Thank you for your continuing interest and cooperation in providing sound and long-term solid waste management planning for the County. If you have questions or need additional clarification on these matters, please contact me at 410-537-3304 or by email at [kaley.laleker@maryland.gov](mailto:kaley.laleker@maryland.gov) or Mr. John Sullivan, Manager of Resource Management Program at 410-537-3314 or [john.sullivan1@maryland.gov](mailto:john.sullivan1@maryland.gov).

Sincerely,

Kaley Laleker, Director  
Land and Materials Administration

cc: Ryan White, Caroline County Department of Public Works  
John Sullivan

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# Introduction

“Solid waste management” as used in this plan means those activities which provide for the collection, separation, storage, transportation, processing, treatment, re-use, or disposal of solid waste. “Solid waste” is the formal term for what we refer to as “garbage” or “trash” in our daily lives. However, solid waste has a broader meaning, which encompasses many of the unwanted by-products of our modern society. In addition to the trash and garbage produced in our homes, solid waste includes any refuse, sewage sludge, or liquid from industrial, commercial, mining, agricultural, or community activities.

Solid waste is material which has served its useful purpose and now has been, or soon will be, discarded. At this point it enters the “waste stream.” It may be temporarily stored, but will ultimately flow to a final end such as burial in a landfill, incineration, or recycling into a new product.

The purpose of this Solid Waste Management Plan (SWMP) is to provide a comprehensive strategy for managing the solid waste stream in Caroline County for the 2021-2030 planning period. The Plan has been prepared in accordance with Title 9, Subtitle 5, of the Environment Article, Annotated Code of Maryland, and the Code of Maryland Regulations (COMAR) 26.03.03 and was adopted by the County Commissioners on \_\_\_\_\_. It includes the following major items:

- Caroline County goals regarding solid waste management.
- The objectives and policies necessary to achieve these goals.
- Discussion of relevant Federal, State and local laws and regulations.
- Present and projected population.
- Current zoning requirements as they relate to solid waste management.
- Public participation in siting decisions, via zoning hearing requirements.
- Procedures for siting solid waste acceptance/disposal facilities.
- Discussion of the current status of the county comprehensive plan.
- Solid waste generation, existing and 10 year projected, by type of waste.

- Types and quantities of waste entering and leaving the county.
- Description of existing solid waste collection systems.
- Description of existing public and private solid waste acceptance facilities.
- Assessment of needs for solid waste disposal systems during the next 10 years.
- Constraints imposed by topography, soils, wetlands, growth patterns, etc.
- Recycling options, including source separation, reduction, and recovery.
- Ten-year plan of action for all types of solid waste and facilities.
- Mechanisms for managing the waste stream.
- Schedule for new or improved solid waste facilities.
- Provisions and methods for financing proposed systems.
- Procedures for updating and amending this Plan.

## Legal Requirements & Authority

Maryland law requires that each county maintain a current, comprehensive solid waste management plan which covers at least the following 10-year period. The regulations of the Department of the Environment (MDE) establish detailed requirements for the plan.

A SWMP would be important to Caroline County even if not required by State law. Solid waste collection and disposal is a critical and costly public service. Protection of the environment and community values requires that solid waste be properly handled, transported and disposed. Conservation of resources, energy, and disposal capacity can be accomplished by recycling and other management techniques.

The original Caroline County Solid Waste Management Plan, adopted in 1973, was prepared by Greenhorne & O'Mara, Inc. of Riverdale, Maryland. At the time the 1973 plan was written, there were 4 open dumps in Caroline County, no sanitary landfill, no rural collection system, and no recycling program. The 1998 plan was prepared by Vitech Consulting Services, Inc. In January of 2011, the Midshore II Regional Landfill ("MS II") opened in Caroline County. Caroline County staff from both the Planning and Codes Department and the Department of Public Works prepared the 2009-2019 Comprehensive Solid Waste Management Plan.

## Plan Approval Process

Plan preparation was performed by the County staff responsible for solid waste management operations in Caroline County. Outside agencies reviewed the Plan and submitted comments, and public input was solicited. A draft plan was also submitted to the Maryland Department of the Environment (MDE) for preliminary review. Comments were received and modifications made to the document.

A formal public hearing on the proposed SWMP was held by both the Caroline County Planning Commission and the County Commissioners per the County ordinance requirements. Notice of the public hearing was given by publication in local newspapers for two weeks preceding the hearing. Written notice of the hearing was also provided to MDE.

Public input and participation is an important part of the facility siting process. In Caroline County any solid waste disposal facility must be approved by the Board of Zoning Appeals as a special use exception, excluding operations owned or operated by the State or the Maryland Environmental Service. This requires a formal advertised public hearing. Chapter Two under “Zoning Requirements” includes a detailed discussion of Caroline County’s zoning requirements and public input process for solid waste acceptance facilities. In addition, any publicly owned or operated solid waste disposal facility will require budgeting and/or other approvals by the County Commissioners, who hold public hearings on their budget and weekly public meetings.

# Chapter 1: Goals and Regulatory Framework

## Solid Waste Management Plan Goals

This Caroline County Solid Waste Management Plan fulfills the following goals:

1. Promote the provision of solid waste collection and disposal services in an economical and efficient manner.
2. Protect the overall public health, natural resources and environmental quality of Caroline County.
3. Continue to participate in Midshore regional recycling program and help the program meet the mandated goal for recycling 20% of Midshore solid waste.
4. Provide planning so that adequate solid waste management facilities will be available during the next 10 years.
5. Comply with State and federal laws and regulations governing solid waste management.
6. Be consistent with the Caroline County Comprehensive Plan.
7. Encourage, where appropriate, regional cooperation and solutions to solid waste management problems.
8. Provide opportunities for public participation in solid waste planning and facility siting.

Specific objectives and policies to accomplish these goals are developed and discussed in Chapter Five, which contains the County Plan of Action.

## County Comprehensive Plan Conformance

The current Caroline County Comprehensive Plan (CCCP) was adopted by the Planning Commission and County Commissioners in 2010. Caroline County remains an agricultural county, and the overall goals of the CCCP of agricultural preservation and maintaining a rural character and economy have remained consistent over the years.

The overall comprehensive planning goals are:

1. To direct new growth toward municipalities and Transferable Development Right (TDR) Receiving Areas.
2. To preserve the rural character of Caroline County.
3. To encourage economic development that is consistent with the rural character of the County.
4. To improve and expand public facilities, particularly public safety, health and emergency services.
5. To develop guidelines for new growth in TDR receiving areas.
6. To preserve and enhance agriculture as economically and historically important to the character of the County.
7. To preserve Caroline County's historic buildings and sites important for the development of tourism and maintenance of the County's heritage and character.
8. To protect the County's wealth of natural and mineral resources, especially water resources.

The Planning and Zoning Enabling Act (the "Enabling Act"), codified as the Land Use Article, requires that county and municipal plans be implemented by laws, ordinances, and regulations consistent with the Enabling Act and its "Visions." The Visions were revised by State law in 2009 and are now stated as follows:

1. 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;
2. Public participation: citizens are active partners in the planning and implementation of community initiatives and are sensitive to their responsibilities in achieving community goals;
3. Growth areas: growth is concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers;
4. Community design: compact, mixed-use, walk-able 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;
5. Infrastructure: growth areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner;
6. 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;

7. Housing: a range of housing densities, types, and sizes provides residential options for citizens of all ages and incomes;
8. 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;
9. 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;
10. Resource conservation: waterways, forests, agricultural areas, open space, natural systems, and scenic areas are conserved;
11. Stewardship: government, business entities and residents are responsible for the creation of sustainable communities by collaborating to balance efficient growth with resource protection; and
12. Implementation: strategies, policies, programs, and funding for growth and development, resource conservation, infrastructure, and transportation are integrated across the local, regional, state, and interstate levels to achieve these visions.

The Community Facilities element of the CCCP contains information about and recommendations pertaining to solid waste management. Goals related to solid waste management in the CCCP are focused on ensuring the public is aware of the County's landfill and enhancing recycling in the County. Caroline County is part of the Mid-Shore Landfill Cooperative which was formed in the late 1980's with Kent, Queen Anne's, and Talbot Counties. Caroline County's Holly Road solid waste transfer station was designated to serve as the Mid-Shore II landfill site (MS-II) to serve the regions solid waste management needs from 2011-2030. Per the Cooperative agreement, after 2030 Queen Anne's County will host Mid-Shore III.

Generally, the Community Facilities Element of the CCCP recommends that the County provide community facilities that meet the changing needs of County residents. The CCCP has two specific recommendation regarding Solid Waste Management as follows:

- Residential development within the defined landfill impact zone should be discouraged. MS-II and surrounding areas are located within the planned greenbelt for the Town of Ridgely, and therefore these areas are targeted for preservation and/or conservation.
- The CCCP recommends enhancing recycling programs in Caroline County. In 1993 the Mid-Shore Landfill Cooperative established the Mid-Shore Regional Recycling Program.

When the CCCP was adopted, the regional landfill was located in Talbot County. The intent of the 1<sup>st</sup> goal was to discourage development in the vicinity of the future site of MS-II, which is now open and active.

## County Government Organization

The Department of Public Works (DPW) has primary responsibility for solid waste management within Caroline County. DPW operates all residential collection sites located within Caroline County, except the Holly Road facility which is operated by Maryland Environmental Service (MES). This includes administration, supervision, site attendants, transport of refuse to the MS-II, and recycling operations (except igloo containers). The Maryland Environmental Service operates trucks which service igloo recycling centers located throughout Caroline, Queen Anne's and Talbot Counties.

The Midshore Regional Recycling Program (MRRP) is a cooperative program by Caroline, Kent, Queen Anne's and Talbot Counties to promote recycling by sharing equipment, technical, financial, and other resources on a regional basis. It is funded through a \$5.00 per ton recycling surcharge on the base tipping fee at MS-II. The DPW is the County agency designated to administer the County's recycling program in cooperation with MRRP.

The following organizational charts show the structure of the Midshore Regional Cooperative and Caroline County & State government relative to solid waste management. An additional chart is provided of the Solid Waste Division organization (see Figures 1-1, 1-2 & 1-3).

FIGURE 1-1 MIDSHORE REGIONAL COOPERATIVE ORGANIZATION CHART

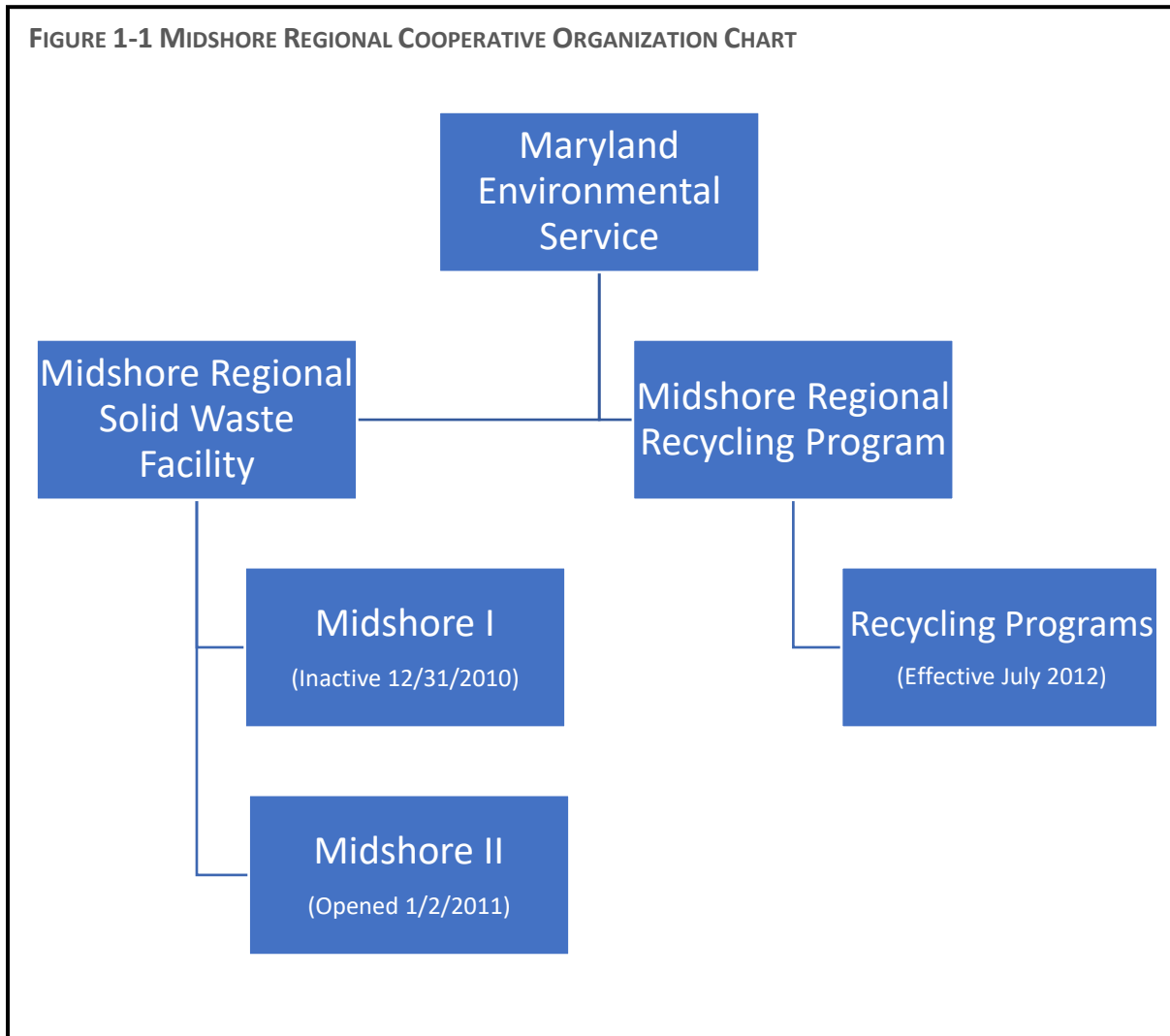
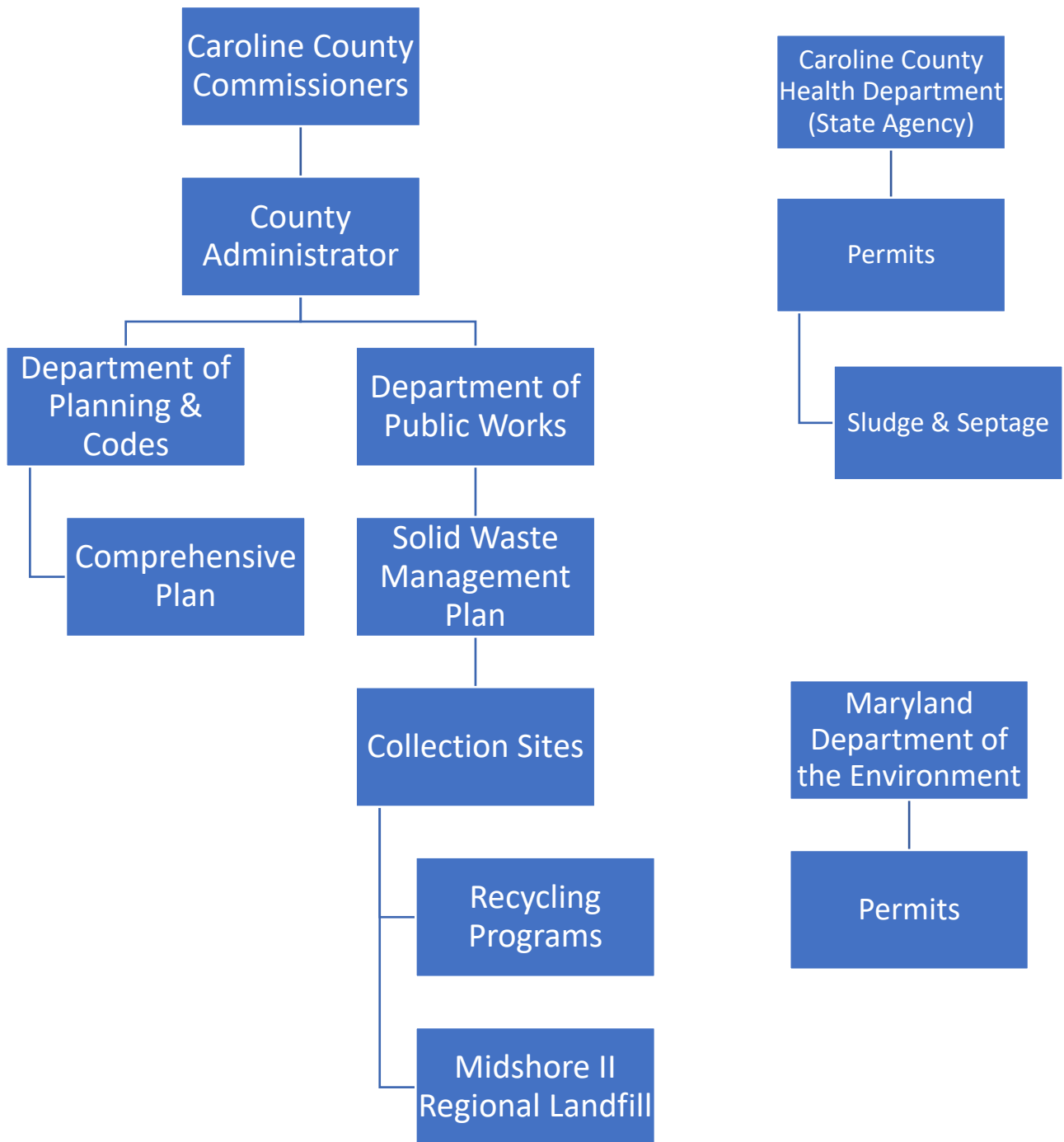
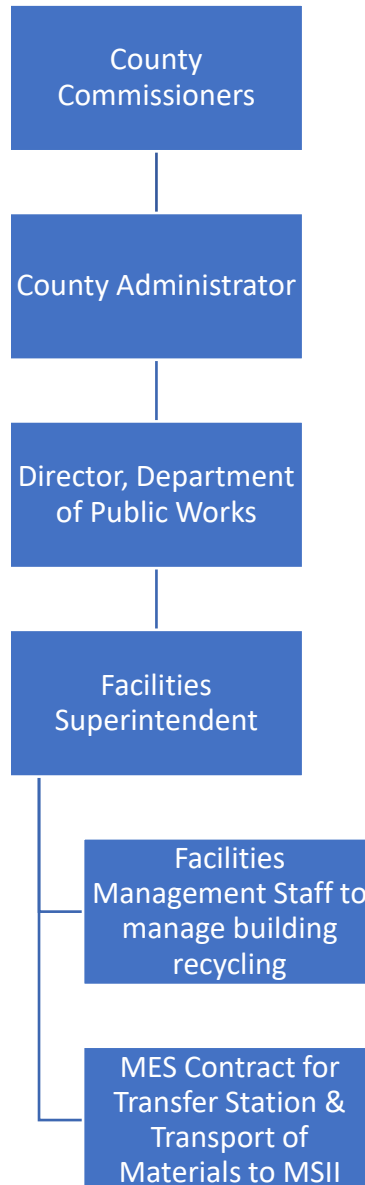


FIGURE 1-2 STRUCTURE OF COUNTY GOVERNMENT & STATE GOVERNMENT RELATED TO SOLID WASTE MANAGEMENT



**FIGURE 1-3 COUNTY ORGANIZATIONAL CHART OF STAFF INVOLVED IN SOLID WASTE MANAGEMENT**



## Federal, State & County Laws Affecting Solid Waste

### Federal Statutes and Regulations

A number of federal statutes affect solid waste management in jurisdictions within the United States. In particular, the legal controls for solid waste were established as an Act of Congress that resulted in the Resource Conservation and Recovery Act of 1976 (RCRA). RCRA requires that responsibilities for solid waste management be clearly delineated and calls upon the United States Environmental Protection Agency (U.S. EPA) to monitor and approve State management of landfills. Subtitle D of RCRA, as codified under 40 CFR Part 258, governs management and disposal of MSW (non-hazardous waste) and specifies criteria for planning, permitting, establishment, operation, and closure of MSW landfills. Hazardous waste management is regulated under Subtitle C of RCRA, within which the U.S. EPA has developed a comprehensive program to provide safe management of hazardous waste from the moment it is generated to its final disposal (a “cradle-to-grave” approach). Subtitle C regulations set criteria for hazardous waste generators and transporters, and for treatment, storage, and disposal facilities. This includes permitting requirements, enforcement, and corrective action or cleanup. The regulations governing hazardous waste identification, classification, generation, management, and disposal are found in 40 CFR Parts 260 to 273.

### Maryland Statutes

1. *Maryland State Implementation Plan (SIP) (1972)*: Limits emissions from specific pollutant sources to prevent air quality from falling below NAAQS.
2. *Sludge Application (1974)*: Regulates land application procedures to maintain the public health.
3. *Chesapeake Bay Critical Area Protection Program (1984)*: Controls human intervention in the Chesapeake Bay drainage area.
4. *Maryland Recycling Act (1988)*: Establishes a requirement for Maryland counties to plan and implement a recycling system by 1994. Calvert County was mandated to reduce the County's waste stream by 15%.
5. *Nontidal Wetland Regulations (1990)*: Prevents net loss of nontidal wetlands by establishing a stringent permitting process.

6. *Asbestos Control - Asbestos Hazard Emergency Response Act (1990)*: Requires completion of a teaming program by those who do asbestos-related work within schools; deals with asbestos controls.
7. *Land-clearing Debris Landfills - Amount of Surety (1990)*: Addresses the amount of surety required for each acre of land-clearing debris landfills.
8. *Medical Waste Legislation (1991)*: Regulates identification, record keeping, treatment, transport, and disposal of special medical wastes; infectious wastes are prohibited in solid waste landfills in the State.
9. *Newsprint Recycled Content Act (1991)*: Regulates newsprint recycling by imposing specified recycling content percentage requirements on the Maryland newspaper industry.
10. *Telephone Directory Recycling Act (1991)*: Regulates telephone directory publishers to meet specified recycling content percentage requirements for telephone directories.
11. *Plastic Material Code (1991)*: Bans rigid plastic containers or bottles from distribution or sale in the State unless appropriately labeled indicating the plastic resin used to produce them.
12. *Natural Wood Waste Recycling Facilities (1991)*: Wood waste recycling facilities must be appropriately permitted and operated, and may accept only NWW.
13. *Scrap Tire Recycling Act (1991)*: Regulates the storage of scrap tires, including prohibition against landfill disposal or scrap tires after January 1, 1994.
14. *Composting Act (1992)*: Includes composting in the definition of recycling. Requires that County recycling plans address composting issues, and bans yard waste from landfills effective in 1994.
15. *Mercury Oxide Battery Act (1992)*: Makes battery manufacturers responsible for collection, transportation, and recycling or disposal of batteries sold or offered for promotional purposes in the State.
16. *Maryland State Senate Joint Resolution 6 (2000)*: Established a voluntary statewide diversion of goal of 40% by the year 2005 in order to reduce the amount of waste going to solid waste disposal facilities.
17. *Statewide Computer Recycling Pilot Program (2005)*: Act establishing statewide Computer Recycling Pilot Program and computer manufacturer registration fee.
18. *Sale of Mercury Containing Thermostats (2008)*: Prohibits sale of mercury containing
19. thermostats by October 2007.
20. *Recycling – Public School Plans (2009)*: An Act requiring a county recycling plan to address the strategy for the collection, processing, marketing and disposition of recyclable materials from county public schools.
21. *Maryland Greenhouse Gas Reduction Act (2009)*: Required the Greenhouse Gas Reduction Plan to have a positive impact on job creation and economic growth in Maryland. The Plan was required to reduce greenhouse gases by 25% by year 2020.
22. *Fluorescent and CFL Recycling (2010)*: An Act requiring a county recycling plan to address the strategy for the collection and recycling of fluorescent and CFLs that contain mercury.
23. *Recycling – Apartment Buildings and Condominiums (2012)*: An Act requiring a county recycling plan to address the collection and recycling of recyclable materials from residents of apartment buildings and condominiums that contain ten or more dwelling

units by property owners or managers of apartment buildings and councils of unit owners of condominiums. Further, if applicable, a method for implementing a reporting requirement for recyclable materials generated at apartment and condominiums that contain ten or more dwelling units.

24. *Recycling Rates and Waste Diversion – Statewide Goals (2012)*: An act revising the 1988 MRA, requiring a county Plan to address a reduction through recycling of at least 20% of the county’s solid waste stream by December of 2015.
25. *Special Event Recycling Program (2014)*: An Act requiring a county recycling plan to address the collection and recycling of paper, bottles and cans and food at events held on public property, having at least an estimated 200 people or more, and serves food or drink.
26. *Recycling Rates and Waste Diversion – Statewide Voluntary Goals (2020)*: The State of Maryland implemented a voluntary waste diversion goal of 60% and a voluntary recycling rate of 55% by 2020.
27. *Office Building Recycling Plan (2019)*: An Act requiring the collection of recyclable materials from office buildings that have 150,000 square feet or greater of office space and requiring owners of the office buildings to provide recycling receptacles by October 1, 2021.

## Maryland Regulations

1. Title 26, Subtitle 3, Water Supply, Sewerage, Solid Waste, and Pollution Control Planning and Funding, Chapter 3, *Development of County Comprehensive Solid Waste Management Plans*: Requires that each county maintain a current SWMP and establishes the content and format for these plans.
2. Title 26, Subtitle 3, Chapter 10, *Financial Assistance for the Construction of Processing and Disposal Facilities*: Stipulates the requirements, priority listing criteria, and ranking system for counties to receive financial assistance from the State of Maryland.
3. Title 26, Subtitle 4, *Regulation of Water Supply, Sewerage Disposal and Solid Waste*, Chapter 7, *Solid Waste, Solid Waste Management*: Regulates permitting, designing, constructing, operating, and closing municipal, land-clearing debris, rubble, and industrial waste landfills, processing facilities, transfer stations, and incinerators.
4. Subtitle 4, Chapter 6, *Sewage Sludge Management*
5. Subtitle 4, Chapter 8, *Storage, Collection, Transferring, Hauling, and Processing of Scrap Tires*
6. Subtitle 4, Chapter 9, *NWW Recycling Facilities*
7. Subtitle 17, Chapter 4, *Construction on Non-tidal Waters and Flood Plains*
8. Subtitle 23, Chapters 1-6, *Non-tidal Wetlands*
9. Subtitle 24, Chapters 1-5, *Tidal Wetlands*
10. Subtitle 8, Chapters 1-10, *Water Pollution*
11. Subtitle 17, Chapter 1, *Erosion and Sediment Control, Disposal of CHS’s*
12. Subtitle 17, Chapter 2, *Stormwater Management*
13. Subtitle 11, *Air Quality*

## Chapter 2: County Background Information

### Present & Projected Population

For most of the 20<sup>th</sup> century, Caroline County has shown a relatively stable population typical of many rural areas. Population growth in Caroline County in recent decades is linked in part to the overall growth of the Eastern Shore resulting from the improved commuting access provided by the Bay Bridge. The development of significant employment opportunities in both Caroline County and neighboring areas such as Dover, Seaford and Easton, combined with affordable housing in Caroline County has also contributed to population growth. A national recession beginning in 2007 led to a decrease in local jobs, longer commutes, and ultimately a slight decrease in population for Caroline County from 2010-2015 with a stabilization by 2020. Population projections have been adjusted accordingly and are lower than projections from the 2009-2019 Solid Waste Management Plan.

The Maryland Department of Planning (MDP) is the primary source of population projections for Caroline County. MDP's most recent projections were revised in December 2020 and cover the period through 2045. Table 2-1 shows historic and projected growth rates for all Counties in the Midshore Regional Cooperative. As shown in Tables 2.1, while the actual population is increasing, the County's annual growth rate has declined over the past 40 years. Table 2.2 shows a corresponding decline in household growth from 1970-2030, but a projected increase in households for 2040-2045. This is due to a projected decrease in household size.

From 1970 to 2010 Caroline County's annual growth rate of 1.7 percent ranked second among the four counties. It was higher than the overall growth rate of the State of Maryland. Compared to its Midshore partner counties, the annual growth rate for Caroline County was lower than

Queen Anne’s County, but higher than that of both Talbot and Kent Counties. From 2020-2045 Caroline County is projected to have the highest annual growth among the partner counties.

**TABLE 2-1 HISTORIC AND PROJECTED POPULATION DATA FOR COUNTIES IN THE MIDSHORE REGIONAL COOPERATIVE**

	1970	1980	1990	2000	2010	Actual Average Annual Growth Rate	2020	2030	2040	2045	Projected Average Annual Growth Rate
<b>Caroline</b>	19,781	23,143	27,035	29,772	33,066	1.7%	33,660	37,700	42,200	44,500	1.3%
<b>Kent</b>	16,146	16,695	17,842	19,197	20,197	0.6%	19,700	20,900	21,800	22,250	0.5%
<b>Queen Anne’s</b>	18,422	25,508	33,953	40,563	47,798	4.0%	50,810	56,320	62,040	64,650	1.1%
<b>Talbot</b>	23,682	25,604	30,549	33,812	37,782	1.5%	37,550	39,650	41,000	41,440	.4%

Source: Maryland Department of Planning State Data Center

**TABLE 2-2 HOUSEHOLDS AND PROJECTED INCREASE**

	Households	Increase	% Increase	Household Growth Rate
1970	6,360	-	-	-
1980	8,219	1,859	29.23%	2.9%
1990	9,983	1,764	21.46%	2.5%
2000	11,097	1,114	11.16%	1.2%
2010	12,150	1,053	9.49%	.9%
<b>MDP Projections (December 2020)</b>				
2020	12,275	125	1.02%	.1%
2025	13,000	725	5.9%	.6%
2030	13,900	900	6.9%	.7%
2040	15,625	1,725	12.4%	1.2%
2045	16,525	900	11.5%	1.2%

Source: Maryland Department of Planning State Data Center

## Municipalities and Federal Facilities

Caroline County has 10 incorporated municipalities. Part of the Town of Templeville lies in Queen Anne’s County, the incorporated portion of the Town of Marydel lies in Maryland and the unincorporated portion lies within the neighboring State of Delaware, Table 2.3 shows the municipal historic and projected populations. COMAR 26.03.03.03B requires that the Solid Waste Management Plan reference the subsidiary plans of the incorporated municipalities or other entities within the County. All 10 of the municipalities listed above have their own planning and zoning authority. The subsidiary comprehensive plans of these municipalities are hereby incorporated by reference. However, none of these municipalities have a plan for solid waste management services or facilities. Excluding the Town of Preston, the municipalities provide for residential solid waste collection services only, and operate no solid waste acceptance or disposal facilities. Preston provides no such services. A detailed description of each town’s solid waste collection services is included in Chapter Three.

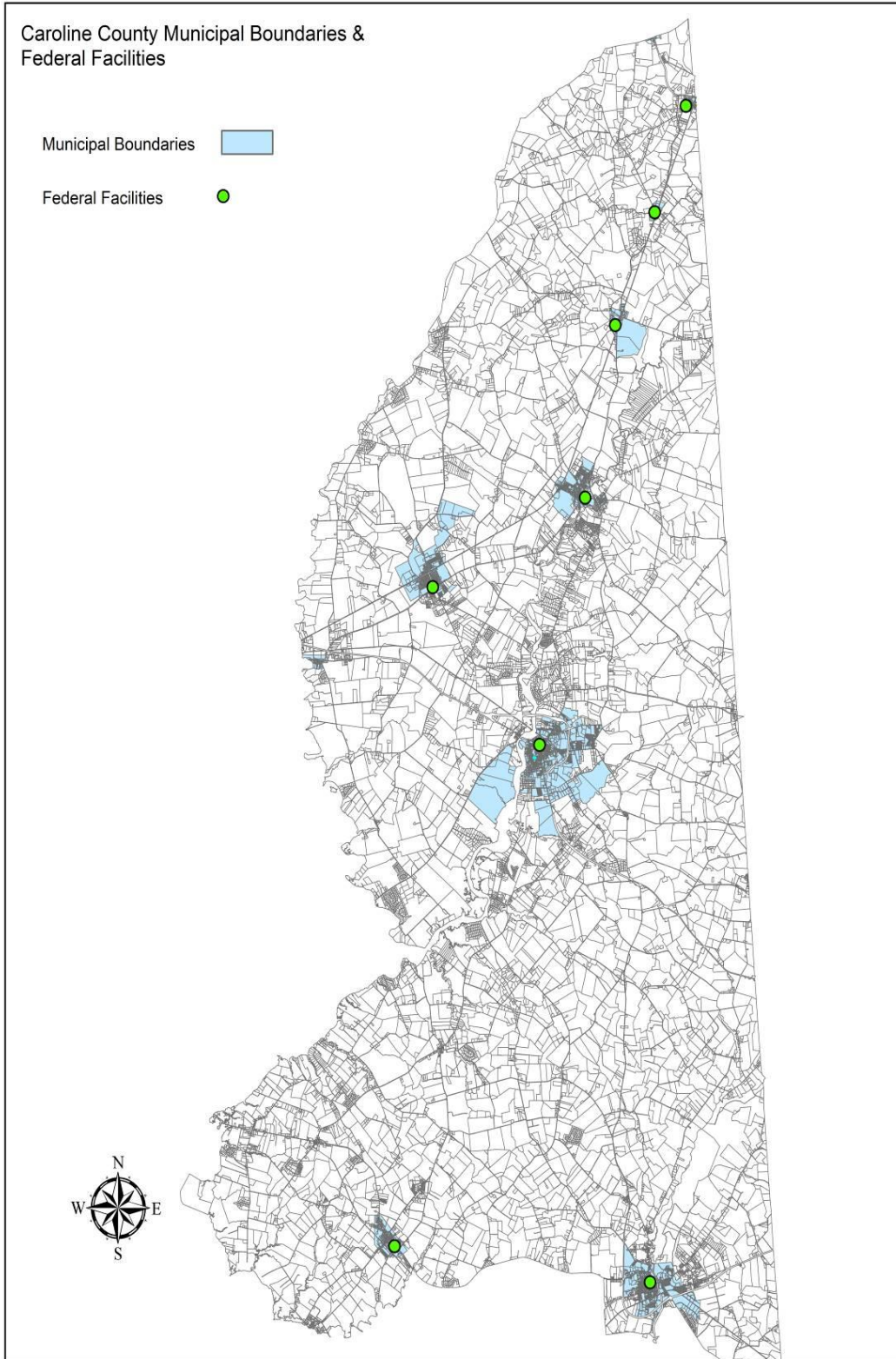
**TABLE 2-3 MUNICIPAL POPULATIONS IN CAROLINE COUNTY**

	<b>2010 Actual</b>	<b>2019 Projected</b>	<b>2020 Projected</b>	<b>2030 Projected</b>
Denton	4418	4512	4520	5062
Federalsburg	2379	2661	2666	2986
Goldsboro	246	230	230	258
Greensboro	1931	1877	1880	2106
Henderson	146	143	143	160
Hillsboro	161	156	156	175
Marydel	141	139	139	156
Preston	719	703	704	789
Ridgley	1639	1657	1660	1859
Templeville	138	117	117	131

*Source: 2010 Actual & 2019 Projected Municipal Population are from Maryland Department of Planning, Estimates for Incorporated Places in Maryland, July 2019. 2020 and 2030 projections were completed by the Caroline County Planning & Codes and calculated using the average annual growth rates provided by MDP for County population growth.*

The only federal facilities located in Caroline County are post offices (one in each municipality). Map 2.1 depicts the municipal boundaries and the Federal Facilities.

## MAP 2-1 MAP OF FEDERAL FACILITIES & MUNICIPALITIES



## Zoning Requirements

The current Caroline County Zoning Ordinance is presently codified as Chapter 175 Code of Public Local Laws of Caroline County. The SWMP is not to be used to create or enforce local land use and zoning requirements. In April 2004, the County Commissioners enacted amendments to the zoning regulations that repealed the previous requirement that all solid waste acceptance facilities located within Caroline County be government owned or operated. It also deleted the only two solid waste acceptance facilities explicitly defined in the zoning ordinance, “sanitary landfill” and “solid waste transfer station,” and replaced them six types of solid waste facilities: collection site, composting facility, natural wood waste recycling facility, resource recovery facility, solid waste disposal facility, and solid waste processing facility.

## Status of the comprehensive Plan

Caroline County Comprehensive Plans were updated in 1991, 1996, 2002, 2003, 2005, and 2010. In 2003, a separate North County Comprehensive Plan was completed and adopted. In 2008, a separate West County Comprehensive Plan was completed and adopted. The current CCCP adopted in 2010 is effective for all regions for the County. The next Comprehensive Plan update will be completed by 2023.

# Chapter 3: Existing Solid Waste Management

## Existing and Projected Solid Waste Management

The waste stream for Caroline County is defined by many complex relationships among the parties that generate, collect, transport, and dispose and/or recycle waste. Defining the exact quantity and composition of the waste stream is difficult; a problem which has become more complex as a result of increasing regionalization of disposal sites, waste haulers, and recycling activities. Data on waste origin must be obtained from the disposal facility, and is subject to the accuracy of record keeping, both in the field and in administrative offices. In many cases the only primary source of information on the origin of a waste load is the vehicle driver, who may have little knowledge or motivation for accuracy. As a result, waste stream data may be viewed as a best estimate, and not as absolute data. Apportioning regional information based on population is another approach that can be used to estimate County activities.

As the County has participated in regional solutions to solid waste management, the distinction between local and other regional solid waste has become blurred. Each truck arriving at MS-II is weighed and the origin of its load is provided by the driver. For loads such as the collection site containers transported by the Caroline County Department of Public Works, the origin is simple and accurate. For commercial haulers, origin is a bit more difficult to determine, as loads originate from more than one county. MES estimates that about 10-15% of loads arriving at MS-II are of mixed county origin. The agencies using this data general deal with this problem by dividing multi-county loads proportionately. This is a reasonable approach, but the resulting County data must be seen as estimates.

The Midshore Regional Recycling Program (MRRP) has also had to identify the total amounts of generated, disposed, and/or recycled refuse as defined in the Maryland Recycling Act (MRA) and reports these amounts annually for the Midshore Cooperative. In 2017, the most recent year of

data, the MRRP reported 64,149 tons of MRA and non-MRA recyclables generated in Caroline County. Because recyclables are reported regionally, this is an estimate based on populations percentages. With Caroline County having 24% of the population in the Midshore Regional Partnership, this estimate is 24% of the regional recyclables. See Table 3-1 below. Data for existing solid waste presented in Table 3-1 are based on data supplied by the Maryland Department of the Environment and show existing and projected solid waste generation for Caroline County. Projected waste is based on a 1.7% annual population growth rate.

**TABLE 3-1 ANNUAL WASTE GENERATION & PROJECTIONS**

Waste Category	Actual Tons Estimated Tons	Projections			
	2017	2020	2023	2026	2029
MSW Residential	12,489	13,137	13,818	14,534	15,288
MSW Commercial	3,522	3,705	3,897	4,099	4,312
MSW Mixed	3,830	4,029	4,238	4,458	4,689
Industrial (solids, liquid,	185	195	205	216	227
Institutional (schools,	0	0	0	0	0
Demolition Debris (C&D)	9,154	9,629	10,128	10,653	11,206
Land Clearing	0	0	0	0	0
Controlled Hazardous	0	0	0	0	0
Dead Animals	14	15	16	17	18
Bulky or Special Waste	0	0	0	0	0
Vehicle Tires	0	0	0	0	0
Wastewater Treatment	837	880	926	974	1,025
Special Medical Waste	4	4	4	5	5
Asbestos	44	46	48	50	53
Soil	4,453	4,684	4,927	5,183	5,452
<b>Total MRA &amp; NON MRA Waste</b>	<b>34,532</b>	<b>36,324</b>	<b>38,207</b>	<b>40,189</b>	<b>42,275</b>
<b>Total MRA and NON MRA Recyclables [(24% (Caroline County population of the Midshore population) of the Total Midshore Recyclables (267,288 tons)]</b>	<b>64,149</b>	<b>67,477</b>	<b>70,977</b>	<b>74,659</b>	<b>78,532</b>
<b>Total Waste Generated</b>	<b>98,681</b>	<b>103,801</b>	<b>109,184</b>	<b>114,848</b>	<b>120,807</b>

Source: Data provided by the Maryland Department of the Environment.

## Solid Waste Entering/Leaving Caroline County

As discussed above, the waste stream in the Midshore Region, which includes Caroline County, is becoming less local and more regional in character. MS-II, the MRRP (Mid-Shore Regional Recycling Program), a reduced number of rubble landfills, and fewer but larger private waste haulers are all factors in this change.

The single largest category of solid waste entering or leaving Caroline County is sewage sludge from Western Shore WWTPs. This material is transported to Caroline County for application to agricultural land. All current sludge permits are for agricultural application. Annual variations are likely due to weather, changes in the contracts available to private haulers that utilized Caroline County, and the availability of alternative agricultural land closer to the Bay Bridge, especially in Queen Anne's County. Generators pay a \$1.00 per wet ton fee for Class I sewage sludge generated in Maryland, and \$2.00 per wet ton for out of State Class I sewage sludge. Class I sewage sludge is suitable for application to agricultural land.

Presently most non-recyclable municipal solid waste generated in Caroline County is delivered to MS-II in Caroline County. It is presumed that all recyclables in Caroline County leave the County for processing, except for some composted and/or mulched yard waste. Rubble disposal is permitted at MRL II.

## Existing Solid Waste Collection Systems

### Municipal Systems

Existing municipal solid waste collection systems operating in Caroline County are described below. The service areas for these collection systems are primarily the corporate limits of the town in question. Some of the 10 incorporated towns provide their own collection service

utilizing town equipment and personnel, however, most contract for this service to private companies. The Town of Preston provides no such services.

- Town of Denton – The town contracts for residential curbside trash collection. Approximately 1,750 customers are served. All waste collected by the contractor is transported to MS-11. Collection is one day per week, on Tuesday. The town does its own bulk item pickup on Wednesday of each week. Residents are encouraged to call the town office before placing items at the curb. White goods are separated and delivered to Schultz & Sons Salvage for recycling. The town uses a brush chipper to reduce wood waste. Yard waste, leaves and wood chips are collected and composted at the Denton Industrial Park. Other bulk items such as furniture are off-loaded to a roll-off container at the Denton Sewage Treatment Facility. This container is then hauled to the MS-11 by the contractor. The Town of Denton offers cardboard recycling service on Wednesday's. The Town of Denton offers a subscription recycling service to residents twice monthly.
- Town of Federalsburg – The town operates its own collection service using its own top loading truck and Town personnel. Residential and downtown commercial collection is one day per week on Tuesday. Approximately 1100 households are served. Several apartment complexes in Town are collected on Wednesday as a separate collection from the remaining residential. All waste collected is transported to MS-II. Bulk items are picked up by the town on the first and/or third Tuesday of each month. Brush is chipped and recycled at the Public Works Department shop on Reliance Avenue. All other refuse collected is transported to MS-II.
- Town of Goldsboro – The town contracts for one day per week curbside pickup. Approximately 80 customers are served. This waste is transported by the contractor to MS-II. The town has no bulk item refuse collection. Residents must transport these items to a County HODO (Home Owner Drop Off), such as the Melville Road site.
- Town of Greensboro – The town contracts for one day per week curbside collection on Fridays. Approximately 700 customers are served. The town schedules bulk item pickups quarterly. The town collects leaves in the fall and spring, and requires residents to use eco-bags. Waste is transported to MS-II.
- Town of Henderson – The town contracts for curbside pickup one day per week. Approximately 60 customers are served. This waste is transported by the contractor to

MS-II. The town has no bulk item refuse collection. Residents must transport these items to a County HODO, such as the Melville Road site.

- Town of Hillsboro – The town contracts for once per week curbside collection. Approximately 80 customers served. Waste is delivered to MS-II. The Town offers weekly curbside recycling pick up for those residents that want to participate. The town has no bulk item refuse collection. Residents must use a County HODO, such as the Holly Road site.
- Town of Marydel – The town contracts for one day per week curbside pickup. Approximately 60 customers are served. This waste is transported by the contractor to MS-II. The town has no bulk item refuse collection. Residents must transport these items to a County HODO, such as the Melville Road site.
- Town of Preston – The town provides no solid waste collection services. The County’s Preston HODO is located within the town. Residents may either carry their waste to that site or can arrange for private collection from one of the several commercial haulers who operate in the area.
- Town of Ridgely – The town contracts for curbside collection one day per week on Monday. Approximately 570 households are served. All waste collected is transported to MS-II. Bulk items are picked up by the town one or two times per week. Brush is chipped and recycled and other items transported to MS-II.
- Town of Templeville – This town contracts collection services. Approximately 35 customers are served. All waste collected is transported to MS-II. Bulk items may be taken to a County HODO, such as the Melville Road site.

### Private Solid Waste Collection Systems

Several private companies provide solid waste collection services within Caroline County. Municipal contracts are subject to change as they are re-bid on a multi-year basis. Acquisitions and consolidations in recent years have changed the make-up of private companies serving the region.

## County Public Solid Waste Acceptance Facilities

MES operates a system of 3 residential collection sites and recycling centers, Old Denton Road, Preston, and Melville Road. These centers are in the northern and southern areas of the County. They are intended to provide a location for residents of to dispose of their solid waste and to recycle materials. Users are required to purchase a permit to utilize the facilities. Permits are \$100.00 for a full year and costs are prorated if purchased after the start of the year. The site operation costs, including hauling and landfill tipping fees, are paid by the County general fund, as part of the budget of DPW (partially offset from the permit fees). As noted above, MES operates the Holly Road transfer station in the central part of the County. The collection sites have a variety of operating hours.

The following waste materials are accepted at the collection sites:

- Household trash in bags or garbage cans
- Separated recyclables:
  - Glass bottles and jars
  - Plastic bottles and jugs (#1 and #2)
  - Aluminum and tin cans
  - Mixed paper including newspaper, magazines, catalogs, office paper and paperboard
  - Corrugated cardboard
  - Used motor oil and antifreeze
  - Scrap metals
  - Brush – less than 4” in diameter (Hobbs only)
  - Used clothing (at Hobbs and Holly only)

The following waste materials are not accepted at the collection sites:

- Commercial waste
- Farm waste
- Animal carcasses
- Hazardous substances
- Firearms
- Gas cans/tanks, propane containers

- Stumps, wood, brush over 4” in diameter
- Burned Material

The public solid waste acceptance facilities owned and/or operated by Caroline County or MES are described below and shown on Map 3-1 (note: all three of the County operated sites are candidates for closure in the future):

1. **Holly Road Collection Site** – This collection site is located on Holly Road, southeast of Ridgely. The site is operated by MES on land leased from the County.
 

Tax Description:	Tax Map 23, Grid 11, Parcel 94 Tax Map 23, Grid 22, Parcel 130
Ownership:	Caroline County Commissioners
Size:	216.12 acres
Zoning:	R-Rural
MD Grid Coordinates:	403,500 N; 1,126,700 E
Service Life Remaining:	No limit

The Holly Road Collection Site was opened in 1978 at the entrance to the former Holly Landfill. Its service area includes all of the jurisdictions included in the Midshore Regional Landfill group, but is primarily used by Caroline County residents. The site was expanded and redeveloped in 1993 to become a full-service household waste disposal site and recycling center. In 2011, the site was taken over and is operated by MES. There are no permits required or fees charged to users of this site.

This site is equipped with 2 stationary compactors/roll-off containers and 1 open top roll-off container for bulk items. The compactors are for household waste. When full, these containers are transported by MES to MS-II for disposal.

Recycling facilities at Holly Road include: 1 open top roll-off container for brush & yard waste, 1 open top roll-off container for scrap metal, 2 open top roll-off container for corrugated cardboard, 2 containers for used clothing, 1 battery shed for used lead acid batteries, 3 recycling bins for plastic bottles & containers and aluminum & tin cans, 1 recycling bin for clear glass, 1 recycling bin for brown & green glass, 1 recycling bin for mixed paper, 2 recycling bins for cardboard, a tank for used oil, a tank for used antifreeze.

The recycling bins at this site are emptied by trucks operated by Maryland Environmental Service as part of the MRRP.

2. **Melville Road Collection Site** – This collection site is located on Melville Road, southwest of Henderson, and northeast of Goldsboro.

Tax Description:	Tax Map 8, Grid 8, Parcel 75
Ownership:	Eugene D. Racz, Jr. (leased to Caroline County Commissioners)
Size:	66.056 acres (1 acre leased)
Zoning:	R-Rural
MD Grid Coordinates:	450,400 N; 1,145,800 E
Service Life Remaining:	No limit

The Melville Road Collection Site was opened in 1978 at a privately owned site which was leased by the County Commissioners. The County made all site improvements including fencing and a ramp for the roll-off containers and compactor. Recycling facilities at this site are limited, and most materials must be deposited at the resident drop-off recycling site in Goldsboro.

The target service area for the Melville Road site is all of Caroline County lying north of Greensboro. This includes the areas around Goldsboro, Henderson, and Marydel. This site is equipped with 1 stationary compactor/roll-off container and 1 open top roll-off container for bulk items and overflow. A concrete ramp for cars is located between the compactor and open top container to facilitate their use by residents. The compactors are for household waste. When full, these containers are transported to MS-II for disposal.

Recycling facilities at this site are limited but include: 1 open top roll-off container for scrap metal, 1 open top roll-off container for corrugated cardboard, a tank for used oil, and barrels for used antifreeze.

3. **Old Denton Road Collection Site** – This collection site is located north of Federalsburg at the intersection of Old Denton Road and Maryland Route 313.

Tax Description:	Tax Map 55, Grid 20, Parcel 97
Ownership:	Haines B. Holt (leased to Caroline County Commissioners)
Size:	Approximately 1 acre
Zoning:	R-Rural
MD Grid Coordinates:	326,300 N; 1,146,500 E
Service Life Remaining:	No limit

The Old Denton Road Collection Site was opened in 1978 at a privately owned site which was leased by the County Commissioners. The County made all site improvements including fencing and a ramp for the open top roll-off containers. The existing site is too small to include a complete recycling center. Traffic at this site frequently backs up onto Old Denton Road.

The target service area for the Old Denton Road site is the Federalsburg area. This site is equipped with 1 stationary compactor/roll-off container and 2 open top roll-off containers for bulk items and overflow. A concrete ramp for cars is located between the compactor and open top container to facilitate their use by residents. The compactor is for household waste. When full, these containers are transported to MS-II for disposal.

Recycling facilities are limited, but include: 1 open top roll-off container for corrugated cardboard, 1 open top roll-off container for scrap metal, a tank for used oil, and barrels for used antifreeze.

- 4. Preston Collection Site** – This collection site is located inside the Town of Preston, east of Back Landing Road and adjacent to the Preston sewage treatment lagoons.

Tax Description:	Tax Map 600, Parcel 223
Ownership:	Commissioners of Preston (leased to Caroline County Commissioners)
Size:	15.411 acres total, approximately 0.5 acres leased
Zoning:	Industrial (Town of Preston)
MD Grid Coordinates:	319,960 N; 1,112,400 E
Service Life Remaining:	No limit

The Preston Collection Site was opened in 1979 on property owned by the Town of Preston and leased by the County Commissioners. The County made all site improvements.

The target service area for the Preston site is unique in that it includes the Town of Preston. Preston is the only incorporated town in Caroline County which does not include curbside trash collection as a municipal service. This site is equipped with 1 stationary compactor/roll-off container and 2 open top roll-off containers for bulk items and overflow. The compactors are for household waste. When full, these containers are transported to MS-II for disposal.

Recycling facilities at this site include: storage area for tires, storage area for white goods, 1 open top roll-off container for scrap metal, 1 open top roll-off for corrugated cardboard, and a tank for used oil and barrels for used antifreeze. This site also includes recycling bins which are located outside of the fenced area and available to the public at all times. There are 2 bins for plastic bottles & containers and aluminum & tin cans, 1 bin for clear glass, 1 bin for brown & green glass, 1 bin for mixed paper, 1 bin for cardboard. The recycling bins at this site are emptied by trucks operated by Maryland Environmental Service as part of MRRP.

**5. MidShore Regional Landfill II** – This facility located on River Road, southeast of Ridgely.

Tax Description:	Tax Map 23, Grid 11, Parcel 94 Tax Map 23, Grid 22, Parcel 130
Ownership:	Maryland Environmental Service, 259 Najoles Rd, Millersville, MD 21108-2515
Size:	216.12 acres
Zoning:	R-Rural
MD Grid Coordinates:	403,500 N; 1,126,700 E
Permit Status:	Active Refuse Disposal Permit #2019-WMF-0608, Expiration Date 2/25/2024
Service Life Remaining:	Reach Capacity in 2048

An original 18-acre parcel was acquired by the County Commissioners in 1965 (former “Holly Road Landfill”). Caroline County operated that sanitary landfill at this site until

1979, and thereafter operated a transfer station at the site. MES now operates a homeowner drop-off (“HODO”) at the Holly Road site. A second parcel of approximately 200 acres was acquired in 1975 to provide for future landfill expansion, and as a source of sand, gravel, for County roads construction and coverage for MS-II.

From 1979 to 1981 the Holly Road site was operated as a rubble landfill. Prior to the collapse of the Choptank River Bridge in Denton in 1976, this site was planned to become the single sanitary landfill for Caroline County. The bridge collapse and the improvement and permitting of the Hobbs Landfill resulted in the closure of the site.

The County Commissioners designated this site as the future site of MS-II, pursuant to their obligation under the Midshore Regional Landfill agreement.

The MS-I located in Talbot County closed in 2011. In January, 2011, MS-II formally opened for business. Holly Road continued to operate as a HODO under MES management and control. The County transferred ownership of the properties to MES in January 2009.

### **Composting Facilities**

**Twin Maple Composting Facility** – This collection site is located on Clarks Lane to the north of Ridgely. The site is operated by Mid-Atlantic Organic Resource Company.

Type and quantity of feedstock composted in 2019: The facility composted a cumulative total of 13,374 tons of hatchery waste, poultry products, seafood, and wood waste.

Location Address:	14130 Clarks Lane, Ridgely, MD 21660
Ownership:	Private
Size:	3 acres
Zoning:	R-Rural
MD Grid Coordinates:	1150/375
Permit Status:	Active Composting facility permit #2016-GCF-0007, expiring on March 27, 2021.



## Public Regional Solid Waste Acceptance Facilities

The following solid waste acceptance facilities are located outside of the County, but have been identified as accepting solid waste generated in the County:

**MidShore Regional Landfill I (MS-I’)** – This regional landfill was the first of the regional sites that originated from the Midshore Regional Landfill agreement between Caroline, Queen Anne’s and Talbot Counties and MES. Kent County joined the agreement in May 1992. The project began in the early 1980s when Caroline, Queen Anne’s and Talbot Counties asked MES to investigate a waste to energy facility. Rising energy prices and new State and Federal landfill regulations were the motivating factors. MES conducted a feasibility and economic study which determined that a solid waste incinerator generating electricity was not economically feasible. However, each county still faced the impending closure of its existing landfills and the need to design and construct a modern landfill with a liner and leachate collection and treatment and methane gas collection and dispersion.

Further investigation by MES determined that a regional approach to solid waste management would allow economies of scale that were impossible for individual rural counties to achieve on their own. Land adjacent to the Easton Landfill in Talbot County was selected for the first site, with an initial planned life of 20 years. It opened in March 1991. Under the agreement, each county is obligated to designate its site for the regional landfill. When the Easton site closed, MS-II in Caroline County’s opened. MS-II also has an expected 20 year life, though the partnership is exploring options to extend the use of MS-II. Queen Anne’s County will follow Caroline County as the next regional landfill host county.

If tipping fees are inadequate to support the facility operation, MES can require the counties to make supplemental payments. The four counties have a right to take over and pay the MES bonds, and assume operation of the facility themselves.

The MS-I is now closed. Two additional facilities have been constructed at the MS-I since the initial development of the regional landfill. The first of these was the Midshore Recycling Consolidation Facility, which opened in October 1993. At this location, MRRP consolidates materials collected from igloo sites. Equipment at the site is operated by MES for MRRP. The Midshore Transfer Station was opened in 1998 in cooperation with Waste Management, Inc. This facility is used to consolidate and load solid waste for shipment by tractor trailer truck to WMI's landfill facilities in Virginia. The transfer station is owned and operated by MES and is equipped with a tipping floor and a grapple loader.

MES origin reports for MS-I and MS-II were reviewed to estimate the portion of the waste stream that originates in Caroline County. Because these are or were regional facilities, no precise origin data is available. Each driver is asked to identify the origin of the load, but many loads are mixed and the information provided may not be accurate. It is currently estimated that 10-15% of loads are mixed county loads.

### Private Regional Solid Waste Acceptance Facilities

There are no private solid waste acceptance facilities in the County that are permitted by MDE. However, there are several privately owned facilities in adjoining counties that receive solid waste from Caroline County. These are described below:

**R.B. Baker & Sons Rubble Landfill** is located in Queen Anne's County. The facility opened in October 1992 and is operated under a permit from MDE. Acceptable materials include structural steel, concrete, bricks (excluding refractory types), lumber, plaster and plasterboard, insulation, shingles and roofing material, floor and ceiling tiles, pipes, glass, wire, asphalt, carpet, wallpaper, felt or other structural fabrics, and paper or cardboard packaging. Unacceptable waste includes industrial waste or by-products, commercial or domestic waste, paint thinner or other solvents or containers, creosote or other preservatives or containers, and paneling or carpet cement.

Acceptable waste includes land clearing waste, clays, sand, gravel, silt, topsoil, tree stumps, root mats, brush and limbs, logs, vegetation, rock and clean brick or concrete. Unacceptable waste includes animal manure, fertilizer, pesticides, herbicides, animal bedding, agricultural produce, animal feeds, and putrescible waste.

**Dependable Sand, Stone and Recycling Co.** is located in Talbot County. Certain demolition wastes and land clearing debris is accepted at this facility. Accepted at no charge is clean concrete, asphalt, brick, block and rock which is crushed for aggregate. This waste can contain no wood, plastic, paper, steel, wire, metal, dirt content exceeding 10 percent, used septic tanks, or concrete bridge material.

This facility will also accept brush, stumps, leaves, woodchips, and dirt. Material must be removed from plastic bags and must be free of concrete, brick, rock, stone, asphalt, plastic, paper, metal, wire, and processed or pressure treated wood. Only raw, natural wood materials are accepted.

## Drop-off Recycling Sites

There are currently 9 drop-off recycling sites in Caroline County. These include the sites at the County's collection sites that have recycling facilities. These are shown on Map 3-1. Each drop-off site is equipped with 8,4 and 3 cubic yard front load recycling containers. All recycling centers accept glass (brown, clear, green), cardboard, #1 & #2 plastic bottles and containers, mixed paper, and metal food and beverage containers. Current drop-off recycling site locations are:

1. Holly Road, 11930 Holly Road, Ridgely, MD 21660
2. Denton Plaza, 2 Denton Plaza, Denton, MD 21629
3. Ridgely, E. Railroad Street, Ridgely, MD 21660
4. Greensboro, 13755 Holly Road, Greensboro, MD 21639
5. Choptank Marina, 21843 Water Street, Preston, MD 21655
6. Goldsboro, 518 Main Street, Goldsboro, MD 21636
7. Preston Transfer, 105 Back Landing Road, Preston, MD 21655

8. Marydel, 199 Main Sreet, Marydel, MD 21649
9. Federalsburg, 111 Morris Street, Federalsburg, MD 21632

## Public School Recycling

The Annotated Code of Maryland, Environment Article 9-1703, requires the County to address recycling in public schools in Caroline County. Article 9-1703 (b), 10 states that the county plan shall address *the strategy for the collection, processing, marketing, and disposition of recyclable materials from County public schools*. A plan has been developed in collaboration with the Caroline County Public Schools.

### Description of Public School Recycling Plan

For the current 2020-2021 school year, the recycling plan will be to continue existing recycling activities and enhance these recycling activities where feasible as determined by a recycling committee. Currently every school has Single Stream Recycling. It is envisioned that the recycling committee will determine annually if additional materials can be included in the existing system-wide recycling strategy. The recycling committee will regularly evaluate the recycling program, modify the recycling program, as needed, and report to stakeholders the status, successes and challenges of the recycling program. BOE Staff are encouraged to use recycling programs for ink cartridges available from Staples and other vendors.

The system-wide recycling strategy for paper provides continuity for students as they graduate up through the grades. Uniformity via a system-wide recycling strategy is also beneficial to staff using the system as well as those responsible for overseeing facility operations. Adding other materials will broaden the impact of recycling and divert additional material from the waste stream, thereby further avoiding costs and impacts associated with disposal.

Materials collected for recycling will be limited to those for which available outlets exist, any costs are affordable, the logistics to collect and store the materials are compatible to the

school's facilities and labor capabilities, and there are affordable means available to transport, process and market the materials either in-house or by third parties.

Materials that will initially be targeted for recycling, pending that feasible outlets and collection services continue to exist, include:

- Paper, including white and colored paper, newspaper, catalogs, and magazines
  - Paper with sensitive information is consolidated at the Support Services facility and shredded on site by Shred-It of Baltimore. The firm then transports the paper to a recycling market.
  - The Midshore Regional Recycling Program (MRRP) accepts mixed paper at seven recycling drop-off sites throughout the county.
  
- Cardboard
  - A free cardboard recycling drop-off site opened in January 2011 at the Midshore Regional Solid Waste Facility in Ridgely, MD. Caroline Board of Education (BOE) staff may elect to use this site using existing staff and equipment.
  - Recycling service providers including Infinity Recycling, Delmarva Recycling and Republic Services offer recycling collection for a fee. Currently, cardboard is collected at each school by Republic Services.
  
- Books
  - Books are a unique recycling stream that are likely best sent to reuse and recycling firms that specifically handle books, in particular textbooks. Infinity Recycling also accepts books. MRRP accepts books without hardback covers with mixed paper.
  
- Plastic Bottles
  - Plastic bottles collected by the Midshore Regional Recycling Program include Number 1 & 2 bottles, without caps. "Igloo" receptacles for plastic bottles are located at seven locations in Caroline County.
  
- Metal cans
  - Tin and aluminum cans collected by the Midshore Regional Recycling Program can be mixed together. "Igloo" receptacles for mixed cans are located at seven locations in Caroline County.
  - Aluminum cans may be collected by student groups as a fundraiser. Infinity Recycling, Delmarva Recycling and several other firms offer buy-back centers in nearby counties.
  
- Electronics

- Currently computers and other electronics can be recycled by many electronics recycling firms. The fate of the material and data should be considered as to how, where and by whom the equipment is recycled. Consideration could be made to determine if recycling services can be incorporated into purchase agreements of new equipment.
- Ink and Toner cartridges
  - Various firms, including Staples offer rebates for recycling ink cartridges.
- Oil, antifreeze, lead acid batteries and rechargeable batteries
  - These items that are generated by Caroline BOE can be recycled using the currently available recycling stations or by recycling firms that service Caroline County.
- Pallets, fluorescent bulbs, shrink-wrap and other items may be targeted at certain locations that generate these items and recycled by firms that provide affordable recycling services.

Other materials that may be targeted in the future or at specific locations include:

- Glass – Since a small volume of glass is typically generated at most schools, this material is a lower priority than other commodities or can be implemented at certain facilities in the school system, as appropriate.
- Vegetable oil and grease – Currently Valley Proteins provide recycling services in the county. Receptacles should be located well away from food preparation areas.
- Landscaping debris such as leaves, brush, branches, grass clippings. Stakeholders shall determine what options exist to recycle this and similar material.
- Food waste – currently there is no food waste composting facility in the region. Since food waste is a significant portion of the current waste stream, the committee shall explore options that may become feasible in the future.
- Construction and Demolition debris – Recycling options will be explored for construction projects in order to divert materials from the waste stream, reduce disposal costs, gain LEED credits and other benefits.
- Other materials – the committee shall investigate via contacts with recycling markets and waste audits to determine other materials that may be feasible to recycle.

The Recycling Committee will primarily determine how materials are collected. The “in- house” resources available to Caroline BOE and the cost, type and extent of services provided by recycling firms are factors in determining the collection approach. These variables likely will change over time and the committee shall regularly explore whether any changes are appropriate.

The users of the recycling system are critical to the success of the recycling program. Therefore, suitable, clearly identified recycling receptacles should be used throughout the school buildings to provide convenient recycling and to deter contamination of the recycling stream. Caroline BOE custodial staff, who are already collecting trash within the schools, shall collect recyclables from classrooms, offices and common areas. Teachers, administrators, students, volunteers and others may also assist in collecting recyclables within the school buildings. In some instances, students could assist with recycling collections to meet community service requirements. Once collected within the building, materials will typically be placed into suitable containers outside of the building, likely adjacent to waste disposal dumpsters, or on a loading dock, depending on the material and logistics.

The Recycling committee will determine the entities that are capable of handling and transporting recyclables. The capabilities and costs associated with each entity will impact how materials are managed. These entities include:

- Private recycling service providers. Firms that currently provide recycling services in Caroline County, include, but are not limited to, Infinity Recycling, Delmarva Recycling and Republic Services. These firms offer collection services using various receptacles and equipment to collect and transport recyclables, such as bins, carts, trucks, dumpsters, roll-offs, trailers and compactor trucks.
- County programs such as the Midshore Regional Recycling Program currently uses igloo-shaped receptacles at seven locations in Caroline County to collect six types of recyclables:
  - Mixed Paper
  - Mixed Metal Cans
  - Plastic Bottles, number 1&2
  - Clear Glass Bottles & Jars
  - Brown Glass Bottles & Jars
  - Green Glass Bottles & Jars

- Mail-back Programs such as:
  - mail-back programs for printer toner cartridges, cell phones and other items for fundraisers
  - mail-back programs of computers by manufacturers as part of a “take-back” program that is part of a “producer responsibility” initiative.
  - Pre-paid recycling services for fluorescent bulbs and other items.
  
- Transporting directly to, or arranging for pick-up by, recycling processors, markets or end-users. Those responsible may be staff, student groups, volunteers or others. Examples include:
  - Collecting aluminum cans and delivering to a buy-back center. A school group may do this as a fundraiser.
  - Collecting scrap metal and consolidating at a designated location and delivering or arranging for pick up with a scrap metal buyer (ex.: Schultz & Son, Denton; Delmarva Recycling, Salisbury & Cambridge; Infinity Recycling, Chestertown).
  - Collect brush & aggregate and delivering to Dependable Sand, Stone & Recycling, Wye Mills. Fees are currently charged for brush. Aggregate is accepted for free.
  - Recycling programs by firms interested in certain materials such as the Paper Retriever program offered by Abitibi in other parts of Maryland. Creafill, a paper processor located in nearby Kent County, is a potential partner for recycling projects at Caroline County schools.
  
- Other Markets as they become available.

Recycling Collection Approaches Include:

- **Source separated** where each type of material is kept separate. The recyclables are either kept separate by providing the users with individual receptacles for each type of material, or if the scale is small, an individual is delegated to separate the items at a consolidation area. The MRRP igloo-shaped receptacles are an example of a source separation collection approach. Unique items, such as toner cartridges, are typically collected individually in receptacles designated for that purpose.
  
- **Dual stream** where two types of recyclables are collected. Typically paper and cardboard are collected together and beverage containers (plastic, cans and glass) are collected together. This requires two sets of receptacles.
  
- **Single stream** where all recyclables are collected together and then sent to a facility where the items are then sorted. It should be noted that existing systems can not easily sort and capture shredded paper, glass, small items and other materials. These difficult to sort items are then often used to substitute for aggregate as cover material at landfills. The users should be aware of the fate of the recyclables from this system as compared to the end uses from other recycling collection approaches. Some firms have recently begun offering single stream recycling collection in Caroline County. Currently specialized

processing facilities for single-stream recyclables are located in Maryland in Anne Arundel and Prince George's Counties, as well as in Virginia and Pennsylvania. There are also transfer facilities for single-stream recyclables in Milford and Wilmington, Delaware.

### Roles and Responsibilities for Developing & Implementing School Recycling Plan

The strategy for recycling in Caroline County schools shall be the primary responsibility of the Caroline County Board of Education. Support shall be sought from stakeholders including but not limited to the Caroline County Department of Public Works, the Midshore Regional Recycling Program, and other partners including students, volunteers, non-profit organizations and private firms. It is also proposed that a school recycling committee, or team, will be formed to develop the specific details of the school recycling strategy. Initial committee members may include:

- Director of Facilities for Caroline County Schools and other key staff
  - Staff should include: Those involved with securing contracts or agreements for waste and recycling services; those involved with overseeing custodial staff; those involved with facilities and grounds; those involved with any sustainability and green school initiatives. Responsibilities include evaluating and refining existing recycling efforts, developing and executing new recycling initiatives, securing necessary assistance and services by third parties, obtaining suitable containers, providing “in-house” operations, coordinating logistics and other steps.
- Recycling Coordinator, Caroline County Department of Public Works
  - Assist with planning, development, launch and execution of recycling efforts and assist with obtaining information and resources.
- Coordinator, Midshore Regional Recycling Program
  - Assist with planning, development, launch and execution of recycling efforts and assist with obtaining information and resources.
- Other stakeholders enlisted by the committee members listed above (ex. staff, student, recycling service providers, teacher, citizen volunteer, others)
  - Assist with planning, development, launch and execution of recycling efforts.
  - During key phases in the development and implementation process, participation by representatives from each of the schools will be appropriate.
- Private recycling service providers. Firms that currently provide recycling services in Caroline County, include, but are not limited to, Infinity Recycling, Delmarva Recycling, and Republic Services.

- Provide collection services, general information, specific data for each school, assist with planning, implementation, execution and follow-up for recycling initiatives.
- Within the school buildings, collection may be performed by:
  - Custodial staff who currently handle trash
  - Students
  - Staff
  - Volunteers
  - Private Contractors

### Schools Included in the Recycling Plan

The following schools and facilities are part of the Caroline County Public School System:

- Federalsburg Elementary School, 302 University Avenue, Federalsburg, MD
- Colonel Richardson High School, 25320 Richardson Road, Federalsburg, MD
- Colonel Richardson Middle School, 25390 Richardson Road, Federalsburg, MD
- Preston Elementary School, 225 Main Street, Preston, MD
- North Caroline High School, Ridgely, MD
- Lockerman Middle School, 410 Lockerman Street, Denton, MD
- Denton Elementary School, 303 Sharp Road, Denton, MD
- Ridgely Elementary School, 118 North Central Avenue Ridgely, MD
- Greensboro Elementary School, 625 Main Street, Greensboro, MD
- Career & Technology Center, 10855 Central Avenue, Ridgely, MD
- The Judy Hoyer Center, 323 S. University Avenue, Federalsburg, MD
- Caroline County Early Head Start, 100 North 6<sup>th</sup> Street, Denton, MD
- Caroline County Board of Education, 204 Franklin Street, Denton, MD
- Office of Support Services, 11348 Greensboro Road, Denton, MD
- Any new schools shall also be covered by the recycling plan

Note that Chesapeake College, Wye Mills, MD is included in the school recycling plan for Queen Anne's County.

### Development & Implementation of the School Recycling Plan

The following schedule is proposed to develop and implement a recycling strategy for Caroline County schools. The proposed schedule shall be followed to the extent that staff time, resources, logistics and budgets allow. Variables such as changes in recycling market values and the type of recycling services available are variables that could impact the implementation schedule and are

to some extent beyond the control of Caroline County BOE and other stakeholders. Since each school has existing recycling activities, it is envisioned that stakeholders will assess the existing system-wide recycling program and expand and enhance these efforts, to the extent feasible. Unique programs that individual schools have undertaken shall remain in place wherever feasible, duplicated when possible and appropriate and encouraged to promote creativity and to recognize the unique qualities of each school's community.

Recycling pickup schedule for existing recycling program:

- Paper with sensitive information is collected and transported by BOE staff and consolidated at one location and then shredded every four weeks on-site by Shred-It of Baltimore, MD, document destruction and recycling firm.
- Republic Services collects recycling every week from Caroline County Schools.

The proposed schedule, subject to adjustment as needed, is as follows:

- September – December 2021: Finalize, incorporating comments received during approval process, and adopt Public School Recycling Amendment to Caroline County's 10-year Solid Waste Management Plan.
- October 2021 – July 2022: Recycling Committee will meet regularly to update the strategies of the Recycling Plan. Resources identified to draw from include:
  - [www.vrarecycles.org/Portals/0/documents/Catch\\_the\\_cycle.pdf](http://www.vrarecycles.org/Portals/0/documents/Catch_the_cycle.pdf)
  - <http://www.epa.gov/wastes/education/pdfs/school.pdf>
  - <http://www.schoolrecycling.net/index.htm>
  - <http://www.nyc.gov/html/nycwasteless/html/recycling/schools.shtm>
  - <http://www.recycleguys.org/guidelines.asp>
  - <http://www.ecocycle.org/atschool/greenstarschools.cfm>
  - Other resources as identified
- The Recycling Committee will also:
  - Document existing activities.
  - Perform waste audits.
  - Review waste contracts, current terms, expiration dates, and suggest revisions for recycling, particularly ways to incentivize waste reduction. Determine if current contracts should be modified. Determine if cost savings can be achieved and directed toward recycling program.
  - Determine recycling services available from the private sector.

- Determine in-house resources and limitations.
- Select suitable recycling receptacles and signage for various locations.
- Determine resources available from county, regional, state, and federal governments, nonprofits, businesses, and the community.
- Determine any grant or other revenue sources.
- Promptly implement any initial adjustments that are appropriate and feasible, obtaining any necessary approvals.
- Prepare recommendations to expand the materials collected in the current system-wide school recycling strategy to be implemented by or before the start of the 2011/2012 school year.
- Prepare and submit any budget requests to implement the system-wide school recycling strategy on the schedule for the FY 2012 budget approval process.
- Develop educational information about recycling.
- Report status to interested parties on a regular basis. For example: provide quarterly updates to BOE and county administration.
- Obtain approval for new recycling initiatives.
- Enlist services from service providers or partners (ex. issue request for bids for services; draft and execute inter-agency agreements; join recycling campaigns).

### Evaluating & Maintaining the School Recycling Plan

The recycling committee will regularly evaluate the recycling program. Stakeholders will meet at least twice a year, likely between school years and mid-school year. Information will be gathered that is readily available (such as types and amounts of material collected). Additional information could be gathered from surveys to glean feedback and ideas from each school's community (staff, teachers, students, parents, volunteers, etc.). Since there is always room for improvement, this step will provide a regular opportunity to take a fresh look at the program and to make adjustments as necessary. The school system administration should regularly review agreements for waste disposal and recycling services and seek ways to decrease disposal costs and incentivize recycling (ex. adjusting frequency of pickups and container sizes, and to adjust services during holidays and vacations). An evaluation of the school recycling plan should also occur at each update of the county Solid Waste Management Plan.

In addition to ensuring the recycling program is operating efficiently, the recycling committee may investigate additional ways to practice the 3 R's, reduce, reuse and recycle. Additional initiatives such as the Maryland Green School program may be complimentary to the recycling activities, broaden support for recycling and the network of stakeholders. Where feasible successful recycling activities should be expanded and enhanced, if appropriate. Problem areas should be reviewed to see if adjustments can be made to improve the situation. Communication and "buy-in" among staff involved with overseeing recycling is critical to the success of the recycling program. Oversight and enforcement of service providers is essential to ensure that agreements and contract terms are met. Contingency plans will likely be made on a case-by-case basis and could include implementing contract violation clauses and other actions. Service contracts should require clear terms regarding non-compliance. For example, the agreement could specify that missed pick-ups must be collected within two business days of notification. The agreement should also specify penalties for significant or extended non-compliance. For instance, non-compliance that is not remedied within 30 days could be terms to void the agreement. Certain recycling activities may be deemed to not be feasible or efficient (ex. due to costs, logistics, etc.) and may need to be modified or discontinued and then periodically reviewed to determine if they can be reinstated. The recycling team should adjust accordingly to build on successes and adjust to challenges and to document any modifications in order to learn from both. Stakeholders should regularly explore feasible options to expand activities in order to recycle additional materials. For instance, composting green waste and food discards would capture a significant portion of the current waste stream.

Positive and accurate feedback should be provided to the school community so that the benefits that recycling provides is communicated to the program's users. Communicating the successes in terms of the amount of recyclables and corresponding facts (energy and resources conserved, greenhouse gas reductions, costs avoided, jobs created, etc.), sending letters of recognition to each school, applying for awards and recognizing stakeholders all are examples of steps the recycling team could undertake regularly that celebrates the recycling program.

## eCycling

MRRP has a program for semi-annual collection and recycling of electronic equipment, such as TVs, computers, printers, etc. In cooperation with MRRP, the County's eCycle effort intends to reduce the amount of toxics entering the waste stream (lead, mercury and arsenic), save landfill space in MS-II, conserve natural resources and reduce the rate of electronic waste. MRRP hosts bi-annual eCycling events throughout the Midshore region. For a schedule of these events refer to <http://menv.com>. Also a permanent collection site is setup at the Holly Homeowner Drop-Off Site which accepts computer peripherals Monday through Saturday.

## Fluorescent Bulb Recycling

Under § 9-1703(b)(11) of the Environment Article, Caroline County is required to address the strategy for the collection and recycling of fluorescent and compact fluorescent lights (CFL) that contain mercury. Section 1 meets the requirement of the law. Sections 2, and 3 if implemented, would exceed the requirements of the law. Section 4 indicates that current law also allows for disposal of bulbs up to certain thresholds and for bulbs that pass the TCLP (toxicity characteristic leaching procedure) test.

**Section 1:** The County and Midshore Regional Recycling Program (MRRP) shall continue to refer residents interested in recycling mercury containing fluorescent bulbs to nearby businesses or entities that accept certain bulbs, and mail-back arrangements that are available. The website [www.lamprecycle.org](http://www.lamprecycle.org) provides an extensive list of firms that provide mail-back recycling of fluorescent bulbs. Currently in the Midshore Region, Lowe's of Easton accepts CFL bulbs for recycling at no charge. According to PSC (Hatfield, PA), the firm that currently manages special wastes for Lowe's, bulbs are shipped to A.E.R.C.'s Bethlehem, PA facility for recycling. This portion of the strategy shall meet the requirements of the law *that provides, "That a county may utilize recycling, exchange, and take-back programs voluntarily established by fluorescent and compact fluorescent light manufacturers or vendors in the county's strategy for the collection and*

*recycling of fluorescent and compact fluorescent lighting required under § 9–1703(b)(11) of the Environment Article, as enacted by Section 1 of this Act.”*

**Section 2:** In order to provide additional options and convenience to Caroline County residents, mercury containing fluorescent bulbs will be accepted at the Household Hazardous Waste (HHW) collection events that are currently held in the Midshore Region each spring and fall. Event details such as location, date, hours and other details are available from [www.midshorerecycling.org](http://www.midshorerecycling.org) and other websites, flyers, newspaper advertisements, email and postal mailings and other outreach materials. HHW materials are managed by a licensed hazardous waste collection contractor. The contractor’s responsibilities regarding the fluorescent bulb collection includes proper packaging, transportation and recycling or proper disposal of all collected material. AVC, the firm that currently provides HHW services for the Midshore Region, ships bulbs collected at HHW events to A.E.R.C.’s Bethlehem, PA facility for recycling. Bulbs shall be accepted at no charge, as funding and budget priorities allow. Currently the HHW program costs are funded by the Midshore Regional Recycling Program. Fluorescent bulbs were collected at the Fall 2011 HHW event. A fee may be considered in the future if costs are determined to be unsustainable.

**Section 3:** In addition, the County and MRRP will periodically investigate the feasibility, logistics, potential locations, costs, funding needs, funding sources and possible fees to residents for providing recycling of mercury-containing bulbs at one or more locations in the county. The County and MRRP will periodically gather information including price quotes from reputable firms. Potential grants and other funding sources, including support from fluorescent bulb manufacturers will be sought as needed. Producer responsibility initiatives, such as take-back programs will be encouraged.

**Section 4:** The County and MRRP will continue to communicate to residents by various means and update information about recycling and disposal options, including the type of products and

quantity threshold requirements that allow and preclude disposal of mercury-containing bulbs with municipal solid waste.

In addition to the various recycling options available, current Maryland laws and regulations allow citizens and many entities with less than 200 kg of mercury-containing bulbs (equivalent of approximately 720 4-foot T12 type bulbs) to dispose of mercury-containing fluorescent bulbs with solid waste. Maryland law does require hazardous waste generators and entities with more than 200 kg of mercury containing bulbs per year that do not pass the TCLP test to send the bulbs to a recycling or hazardous waste facility. Bulbs that pass the TCLP are exempt from requirements to recycle bulbs. Some manufacturers sell bulbs with green colored end caps that claim to pass the TCLP test.

## **Apartment Building & Condominium Recycling Plan (ABCR)**

In April, 2012, the Maryland General Assembly passed House Bill 1, Environmental-Recycling – Apartment Buildings and Condominiums requiring recycling in all apartment buildings and condominiums that contain 10 or more dwelling units. The law becomes effective on October 1, 2012 (amending Section 9-1703 of the Environment Article, Annotated Code of Maryland). Section 9-1703 (b) (12) of the Environment Article, Annotated Code of Maryland required each County and Baltimore City to revise its recycling plan within the Solid Waste Management Plan by October 1, 2013.

### **Apartment Building and Condominium Recycling Program**

Through the cooperation of the Caroline County Department of Public Works (DPW) and owners or managers of apartment buildings or councils of unit owners of condominiums (“apartment and condominium officials”), and other stakeholders involved in the implementation of this law, the County has identified twelve (12) properties that fall under the scope of the law. The Caroline County DPW has met with the apartment and condominium officials and discussed the

requirements of the law including the materials that must be recycled (i.e., plastic, metal, glass containers, and paper) at the identified locations.

Apartment and condominium officials will identify how the materials will be stored, collected, and transported to the recycling markets for the collected materials. Apartment and condominium officials must report to the County on an annual basis details on the required recycling activities. Other program requirements include:

1. Materials included in the Program are plastic, metal & glass containers and paper.

2. Collection of Materials

Apartment and condominium officials are responsible for providing all containers, labor, and equipment necessary to fulfill recycling requirements throughout their buildings. Distinctive colors and/or markings of recycling containers may be provided to avoid cross contamination. The apartment and condominium officials must ensure collection and transportation of recyclable materials from apartment and condominium locations to markets. Eight cubic yard containers are to be used for the collection of a building's recyclable materials. Residents will be responsible for placing recyclables in building recycling bins prior to their removal on the scheduled pick up day.

3. Marketing of Materials

Apartment and condominium officials are responsible for the marketing of their recyclables. The apartment and condominium officials shall submit annual reports (due January 30<sup>th</sup> each year) detailing the recycling and waste tonnage removed from the apartment and condominium and the markets for the materials. *This information will be provided by the recycling companies/agencies collecting and processing the recyclable materials*

Stakeholders that will be involved in implementing the law

1. Caroline County Commissioners – Responsible for adopting the MDE approved language of ABCR Program for the Plan amendment.
2. Caroline County Department of Public Works (DPW) – Responsible for overseeing recycling activities and assuring that all apartment buildings and condominiums that fall under the requirements are included in the ABCR Program. Update a list of participating apartment buildings and condominiums at the time of Caroline County's 3-year Plan review.

3. Caroline County DPW – Recycling Coordinator – Communicate the requirements of the law to the apartment and condominium officials. Assist apartment and condominium officials in developing a recycling program. Monitor the progress and performance of the ABCR Program. Develop the requirements of an ABCR Program in conjunction with input from apartment and condominium officials. Update County’s recycling plan to include the ABCR program and amend the County Solid Waste Management Plan. Develop a recycling reporting survey to be used by apartment and condominium officials in reporting recycling activities. Responsible for amending the Solid Waste Management Plan to include ABCR Program.
  
4. Owners or Managers of the Apartment Buildings or Councils of the Unit Owners of Condominiums - Responsible for providing recycling to the residents of each apartment building or condominium. Secure and manage recycling contracts with the contractor for providing material collection and recycling services from the building locations. Provide material collection bins and containers for transporting the materials from the buildings to the markets. Perform record keeping and may report to the County on annual basis. The list of participating locations and property owners will be updated annually, and the list will be available to the public through the Caroline County Department of Public Works.

### Program Monitoring

The Caroline County Department of Public Works shall oversee the progress and performance of the ABCR Program. However, the apartment and condominium officials will conduct inspections, review service levels, investigate reported or unreported pick-up and disposal complaints, meet with residents or recycling contractor staff to educate or review practices, and review contractor compliance with the recycling contract. Any issues which arise from these visits that are deemed deficiencies on the part of the residents or recycling contractor will be detailed in writing and reported to the violator. The apartment and condominium officials shall initiate actions to correct all deficiencies within 60 days of being notified.

The apartment and condominium officials will also be available to conduct educational seminars and/or tours regarding new materials, practices, and procedures for residents. Also, the owner, manager or council shall be responsible to keep the residents current on new regulations, laws, and mandates affecting recycling in the apartment buildings or condominiums.

## Program Enforcement

The Caroline County Department of Public Works will ensure that the recycling at apartment and condominiums will be implemented in accordance with the Sections 9-1703 and 9-1711 of the Environment Article, Annotated Code of Maryland. The County Attorney's Office will determine if a County should enforce the law and what level of enforcement actions should be used. The law allows for fines to a person that violates the recycling or reporting requirements of the law or a civil penalty not exceeding \$50 for each day on which the violation occurs. Further, any penalties collected under the law shall be paid to the county, municipality, or other local government that brought the enforcement action. A list of Apartment Buildings and Condominiums is shown in Table 3-2.

TABLE 3-2 PARTICIPATING APARTMENT BUILDINGS AND CONDOMINIUMS IN ABCR PROGRAM

Owners Name	Premises Location	City	Unit	Owner's Mailing Address	City	ZIP	Contact Person + Phone
Federal Manor Apartments	101 Rountahn La	Federalsburg	88	410 Severn Ave Ste B413	Annapolis	21403	410 754 5975
Federalsburg Gardens Business Trust	525 Garden Court	Federalsburg	64	PO Box 163	Federalsburg	21632	Lynn Greene 410 754 5872
Case Edwards Management	481 Dutchmans Ln	Greensboro	41	481 Dutchmans Lane	Greensboro	21639	Greensboro Hts Apts 410-482-6261
Greensboro Enterprises LLC	207 Granby Street	Greensboro	10	116 Whitelysburg Road	Greensboro	21639	Gary Wyatt 410 726 6000
Lee Ridge Limited Partnership	502 Sunset Blvd	Ridgely	32	502 Sunset Blvd	Ridgely	21660	Tuckahoe Garden Apts 410 634 2074
Quinn Joseph D & Carville B.Leaf Jr.	Village Cir	Denton	48	PO Box 186	Denton	21629	John Griffith 410 479 0990
Riverview Gardens Business Trust	Riverview Gardens 500 High Street	Denton	64	Cabell Corp PO Box 499	Denton	21629	Rufonda Crumble 410-479-3654
Shade Tree Apartments LLC	507 Market St	Denton	11	PO Box 482	Denton	21629	Jeff Wright 410 479 2000
Laurel Grove Acres	3464 Laurel Grove Rd	Federalsburg	73	People for Better Housing PO Box 208	Federalsburg	21632	Sherita Cottom 410 754 5513
Ober Park Place	107 N. School St	Greensboro	22	240 Shipping Creek Drive	Stevensville	21666	410 924 8676 Dale Jacobson
Denton Elderly Limited Partnership (Edenton Manor)	906 Gay St	Denton	30	Glen Kelly 410 479 3655 Cabell Corporation PO Box 499	Denton	21629	Penny Patrick 410 479 2058
Caroline Associates LLC	301 South 8th St	Denton	63	Case Edwards Management 410 Severn Avenue, Suite B413	Annapolis	21403	410 479 3873

## **Wood Composting**

Wood composting are currently included within the solid waste permit for MS-II. However, due to logistical considerations (i.e. manpower) and market demand, no wood composting is currently being done.

## **Generation of Dead Animals as Solid Waste**

The most common source of dead animal solid waste in Caroline County is poultry and roadkill. The Department of Public Works and State Highway Administration dispose of carcasses at the landfill.

## **Special Event Recycling Plan (SERP)**

In 2014, the Maryland General Assembly passed Senate Bill 781, *Environment – Recycling – Special Events*. The law requires organizers of special events meeting certain criteria to provide a recycling receptacle adjacent to each trash receptacle, ensure recycling receptacles are clearly distinguished from trash receptacles, and ensure that recyclable materials are collected for recycling. Special event organizers must conduct recycling in accordance with the County's Comprehensive Solid Waste Management Plan.

### **A. Special Events Subject to the Recycling Program:**

Environment Article, §9-1712, Annotated Code of Maryland, requires special events organizers to provide for recycling at special events that meet the following three criteria:

1. Includes temporary or periodic use of a public street, publicly owned site or facility, or public park;
2. Serves food or drink; and
3. Is expected to have 200 or more persons in attendance.

Projected attendance may be estimated based on past attendance, number registered to attend, the venue's seating capacity, or other similar methods.

In consultation with municipalities, the County has identified public sites within the County that host or may host special events meeting the above criteria shown on Table 3-3. In addition to the sites listed individually, special events taking place on any local, State, or Federally-owned streets are also included in the Special Events Recycling Program (SERP).

#### **B. Materials and Obligations:**

Special events organizers are responsible for:

1. Providing and placing recycling receptacles adjacent to each trash receptacle at the event (except where already existing on site);
2. Ensuring that recycling receptacles are clearly distinguished from trash receptacles by color or signage;
3. Providing any other labor and equipment necessary to carry out recycling at the event;
4. Ensuring that materials placed in recycling receptacles are collected and delivered for recycling; and
5. Paying any costs associated with recycling at the special event;

Special events organizers may fulfill the requirement to ensure materials are collected and delivered for recycling through one or more of the following methods:

1. Self-hauling the materials to the County recycling drop-off site
2. Contracting with a recycling hauler to collect the materials and deliver them for recycling; or
3. Receiving prior agreement from the site owner to use an existing recycling collection system available at the site.

The special events recycling program must include collection of at least plastic containers, metal containers, glass containers, and paper. The special events organizer must assess the availability of food scraps recycling services for the event. If services are available, the special events organizer must provide for food scraps recycling, including provision of separate containers for organic and non-organic recyclables.

Recycling at a State-owned site must follow the State agency's recycling plan, if available. Recycling at a federally-owned site must follow any applicable federal recycling plan. If no State or federal recycling program is available for the site, the special event organizer must set up a

recycling program in accordance with the SERP. Recycling at municipally-owned sites must follow any additional regulations established by the municipality.

### **C. Stakeholders**

The following stakeholders will be involved in the SERP:

1. Caroline County Department of Public Works: Responsible for overseeing the County Office of Recycling activities and assuring that all properties that potentially host events falling under the recycling mandate in §9-1712 are included in the SERP.
2. Caroline County Department of Public Work - County Office of Recycling: Responsible for communicating the requirements of the law to prospective special events organizers and owners/operators of publicly-owned sites in the County. This office will also assist special events organizers in setting up recycling programs; monitor the progress and performance of the SERP; and develop and communicate any additional requirements for recycling under the SERP at county-owned sites. Develop a recycling reporting form to be used by special events organizers in reporting recycling activity to the County.
3. Special Events Organizer: Responsible for providing recycling bins and ensuring collection for recycling in accordance with the requirements. Perform record-keeping and submit recycling reporting form to the County.

### **D. Program Monitoring**

The Office of Recycling and special events organizers will monitor progress and performance of the SERP. A fact sheet and other informational documents outlining the requirements of the SERP will be distributed with each special event permit issued by the county.

The special event organizer is responsible for monitoring the implementation of recycling at the special event. Special event organizers must oversee placement and labeling of recycling receptacles and collection and recycling of recyclables. Performance of any recycling contractor engaged for compliance with the SERP must be monitored by the special event organizer. The special event organizer must promptly take action to correct any deficiencies in the contractor's performance.

A special event organizer is responsible for maintaining the following records:

1. Any contracts for recycling service;
2. A list of the types of recyclables accepted for recycling;

3. If food scraps recycling is not provided at the event, a description of efforts made to identify available organics recycling services and the reasons organics recycling was determined to be unavailable;
4. The quantity of recyclables collected for recycling at the event;
5. The quantity of solid waste collected for disposal at the event.

No later than 30 calendar days after the final day of the special event, the special event organizer must complete and submit to the County Office of Recycling the Special Event Recycling Report on a form provided by the County.

#### **E. Program Enforcement**

The County Office of Recycling or the equivalent office of the municipality in which the event is located may conduct inspections of the event to ensure compliance with the SERP. If a violation of the SERP is detected, the County or municipality may pursue an enforcement action against the special event organizer. A person that violates the SERP is subject to a civil penalty not exceeding \$50 for each day the violation exists. Any penalties collected for violation of the SERP must be paid to the County, municipality, or other local government that brought the enforcement action.

**TABLE 3-3 PUBLIC SITES AND EVENTS SUBJECT TO SPECIAL EVENT RECYCLING.**

<b>Event</b>	<b>Site Name, Location</b>	<b>Ownership or Authority</b>	<b>Address</b>	<b>Phone</b>
Summerfest	Town of Denton	Caroline County - Parks and Recreation	109 Market Street, Denton, MD 21629	410-479-8120
St. Patrick's Run	Town of Denton and Caroline County	Caroline County - Parks and Recreation	109 Market Street, Denton, MD 21629	410-479-8120
River Run	Town of Denton and Caroline County	Caroline County - Parks and Recreation	109 Market Street, Denton, MD 21629	410-479-8120
Lighting of the Courthouse Green	Town of Denton	Caroline County - Parks and Recreation	109 Market Street, Denton, MD 21629	410-479-8120
Athletic events	South County Regional Athletic Complex, American Corner & Seippes Rd, Federalsburg, Md 21632	Caroline County - Parks and Recreation	109 Market Street, Denton, MD 21629	410-479-8120
Athletic events	Lockerman Middle School Field, 410 Lockerman St., Denton, MD 21629	Caroline County Public Schools	204 Franklin Street, Denton, MD 21629	410-479-1460
Public Gatherings / Events	4H Park	4-H Park Board of Directors	8230 Detour Rd, Denton, MD 21629	410-479-4030
Athletic events	Cedar Lane Park, 398 Cedar Lane, Greensboro, MD 21639	Caroline County - Parks and Recreation	109 Market Street, Denton, MD 21629	410-479-8120
Athletic events	Clark Harrison Memorial Park, 225 Main Street, Preston, MD 21655	Caroline County Public Schools	204 Franklin Street, Denton, MD 21629	410-479-1460
Athletic events	Harmony Community Park, 6265 Harmony Rd, Preston, MD 21655	Caroline County - Parks and Recreation	109 Market Street, Denton, MD 21629	410-479-8120
Athletic events	Federalsburg Elementary School, 302 S. University Avenue, Federalsburg, MD 21632	Caroline County Public Schools	204 Franklin Street, Denton, MD 21629	410-479-1460
Athletic events	Denton Elementary School, 303 Sharp Rd., Denton, MD 21629	Caroline County Public Schools	204 Franklin Street, Denton, MD 21629	410-479-1460
Public Gatherings / Events	Health & Public Services Building, 403 S. Seventh St., Denton, MD 21629	Caroline County Department of Public Works - Facilities Manager	520 Wilimuth St., Denton, MD 21629	410-479-0520
Athletic events	Ridgely Elementary School, 118 N. Central Avenue, Ridgely, MD 21660	Caroline County Public Schools	204 Franklin Street, Denton, MD 21629	410-479-1460
Athletic events	Henderson Community Park, 27040 Bee Tree Rd., Henderson, MD 21640	Caroline County - Parks and Recreation	109 Market Street, Denton, MD 21629	410-479-8120

## Fact Sheet for Organizers of Special Events

### What are My Responsibilities Under the Special Events Recycling Program (SERP)?

Under Maryland Law, special event organizers are responsible for providing recycling at special events that meet the following three criteria:

1. Includes temporary or periodic use of a public street, publicly owned site or facility, or public park;
2. Serves food or drink; and
3. Is expected to have 200 or more persons in attendance.

You are responsible for providing and placing recycling receptacles adjacent to each trash receptacle at the event (except if already existing on site). Recycling receptacles must be clearly distinguished from trash receptacles by color or signage. You must ensure that the recyclables are collected and delivered for recycling. Finally, you are responsible for any costs and labor to carry out the recycling program at your event.

### Which Materials Must be Recycled?

You must provide for recycling of at least plastic containers, metal containers, glass containers, and paper. If you will be serving food at the event, you must assess the availability of recycling service for food scraps, and if available, provide it. Note that you must provide separate collection bins for food scraps and other recyclables if food scraps collection will be provided. Edible surplus food may also be donated.

### What Steps Should I Take Before the Event?

1. Obtain any required permits, licenses, and/or reservations required for the event.
2. Think about the waste stream that will be generated at the event. Can the quantity of waste generated at the event be reduced? For example, water and condiments may be served from bulk containers rather than in packets or plastic bottles; printed handouts and other materials may be double-sided.
3. Determine which materials will be accepted for recycling and assess availability of food recycling.
4. Contract with a recycling hauler for recycling. Be sure to ask about accepted and prohibited materials and the pickup timing and locations.
5. Visit the event venue and determine the number and location of trash receptacles. Purchase or rent recycling receptacles for placement adjacent to all trash receptacles. Free, printable images for signage are available here: <http://www.recycleminnesota.org/resources-6/free-signs-a-images>
6. Train staff that will be involved in the recycling program. Establish who is responsible for emptying recycling bins and when.

### Where Can I Find More Information?

For more information and assistance in setting up the recycling program, please contact the County Recycling Office at **410-479-0520** or [publicworks@carolinecounty.org](mailto:publicworks@carolinecounty.org) and the manager of the event venue.

Other helpful links:

Maryland Food Bank: <https://www.mdfoodbank.org/>

Capital Area Food Bank: <http://www.capitalareafoodbank.org/> (Montgomery and Prince George's)

EPA's "Recycle on the Go" Website: <http://www.epa.gov/epawaste/conserve/tools/rogo/index.htm>

## Office Building Recycling Plan (OBRP)

In 2019, the Maryland General Assembly passed Senate Bill 370, Environment-Recycling-Office Buildings, requiring the collection of recyclable materials from office buildings that have 150,000 square feet or greater of office space; requiring each owner of an office building to provide recycling receptacles for the collection of recyclable materials and for the removal of certain materials for further recycling by October 1, 2021; authorizing certain enforcement units to conduct certain inspections.

By October 1, 2021, unless otherwise agreed upon between an office building owner and a tenant of the office building, as specified, each owner of an office building must provide recycling receptacles for the collection of recyclable materials and for the removal (for further recycling) of the specified materials, as determined by the county or municipality in which the building is located.

### Collection and Marketing of Materials

Office building owners, tenants, or through contracting with a private sector company, are responsible for providing all containers, labor, and equipment necessary to fulfill recycling requirements throughout their office buildings. The office building owner or tenants must ensure collection and transportation of recyclable materials to markets, or other legal recycling destinations.

### Materials Required to be Recycled

Office building owners/tenants shall recycle the following materials:

- Corrugated Cardboard
- Mixed Paper
- Acceptable Plastic Bottles & Jugs
- Tin/Aluminum Beverage Containers

### Responsible Parties

Entities that will be involved in implementing the Office Building Recycling Program include the office building owners and tenants of applicable office buildings, Caroline County or municipality.

### Newly Established Office Buildings with at least 150,000 square feet of Office Space

At the time of implementation of this requirement, Caroline County had no properties/office buildings that fell within the guidelines. Information was obtained SDAT records.

Newly constructed office buildings that meet the Annotated Code of Maryland, Office Building Recycling Program requirements shall begin participating in the program within three months of being notified by a Caroline County agent or municipality.

### Development/Implementation Schedule for the Office Building Recycling Program

Office building owners/tenants shall provide recycling receptacles for the collection of recyclable materials (cardboard, paper, plastic bottles, tin/aluminum cans) by October 1, 2021.

### Program Monitoring

Monitoring of the collection of recyclable materials required in office buildings will be conducted by the office building owners and/or tenants.

Caroline County may require the office building owner to submit an annual report (recycling survey form) detailing the recycling tonnages removed from the office buildings and the name of markets or legal recycling destinations for the materials.

## Program Enforcement

The County is not required to manage or enforce the recycling activities of an office building located within the boundaries of one of its municipalities; however, an enforcement agent of the County or municipality may conduct inspections in order to enforce this program.

The Planning & Codes Department will notify the office building owners/tenants of the implementation requirements in accordance with Sections 9-1703 and 9-1711 of the Environment Article, Annotated Code of Maryland. The County Commissioners or the County Attorney will determine if the County should enforce the law and what level of enforcement actions should be used.

# Chapter 4: Assessment of Solid Waste Management Alternatives

## Assessment of Solid Waste Management Needs

### Disposal – Municipal Waste

MS-II currently provides for all of Caroline municipal waste disposal needs. As used here “municipal waste” includes residential, commercial, industrial (non-hazardous), institutional, and litter wastes. MS-II began receiving waste on a testing basis in late 2010 and opened for general business on January 1, 2011. The project meets all of the long term municipal waste disposal needs of the County for well past the 10 year period covered by the SWMP, and has a planned useful life of 20 years. If MES is not able to perform satisfactorily in the management of MS-II, the four participating counties have an option to take over its operation. Only if the counties also failed in operation of the facility would Caroline County be forced to locate, design, permit, finance, construct, and operate its own landfill.

### Disposal – Rubble

There are presently only 2 permitted landfills in the Midshore region which accept rubble waste from Caroline County, Baker Rubble Landfill and MS-II. MRL II began accepting rubble January 1, 2011. A limited rubble recycling facility exists in Talbot County.

MES presently accepts rubble waste in the regular landfill cell. The only other permitted rubble disposal facility in the Midshore region is in Queen Anne’s County.

MDE adopted regulations requiring the installation of liners and leachate collection systems at all new rubble landfills permitted after September 22, 1997, including existing rubble landfills that are expanded or require a significant modification to a permit. Existing rubble landfills that were not modified were required to be upgraded to a lined facility by July 1, 2001 or be closed.

For the disposal of certain types of rubble material (such as mixed construction and demolition debris) there are only two options available in the Mid-Shore region: MS-II and the facility in Queen Anne's County, in Queenstown.

### Solid Waste Composting

There are no public in-county or regional solid waste facilities that manage solid waste composting operations. The Twin Maple Composting Facility composts agricultural waste only (hatchery wastes, poultry products, seafood, and wood waste). Caroline County has no plans to initiate this type of operation during this planning period.

### Collection Systems

Caroline County and MES operate a system of 4 residential collection sites, together with MS-II. These collection sites are intended to serve as collection and recycling centers for rural and other residents who do not have curbside collection. The collection sites are located near population centers throughout the County.

The County has no plans to provide urban services such as curbside collection of solid waste for rural areas. Private companies will be encouraged to continue to provide this service.

## Constraints on New Solid Waste Acceptance Facilities

### Topography

Caroline County is located on the Atlantic Coastal Plain. This is a broad expanse of unconsolidated sediments. The topography of the County has been formed over millions of years by the interaction of the Atlantic Ocean and the Susquehanna River. Outwash from the river and its ancestors has laid down thousands of feet of sediments, consisting of sands, clays, silts, and gravels. These sediments have in turn been shaped by periodic inundation by the ocean during sea level rises and eroded during periods of lower sea levels. The Chesapeake Bay and its tributaries within the County were carved during a later period of lowered sea levels during the Ice Ages.

Within the County today elevation changes are slight, with most terrain characterized as flat or gently undulating. Short, steep banks are found along most major streams. Most land has slopes under 5 percent, with less than 2 percent in the County having slopes greater than 10 percent. The lowest elevation in the County is located in the village of Choptank at the southern tip of the County, approximately 5 feet above sea level. The highest elevation is 77 feet above sea level at a site approximately 0.5 miles north of Mount Zion, in the northern tip of the County. Most land in the County is located at elevations lying between 40 and 70 feet above sea level.

As a general rule, topography creates few constraints on the location of solid waste facilities in Caroline County. Steep slopes are uncommon and are usually found adjacent to waterways. On site soils, wetlands, proximity to surface water and similar factors may be more significant as site constraints.

## Soils

Soils information is a critical component of the data required for land use and facility planning. Soils are the primary natural resource which determines suitability of land for various uses. Caroline County soils have been mapped by the USDA Soil Survey of Caroline County, Maryland. Experience has indicated that these maps are best used for planning purposes and cannot be used to precisely pinpoint the soils at specific locations. The suitability of a specific site for a specific use may be determined only after an investigation and evaluation of the actual soil types present.

The Soil Survey identifies 70 soil series found within Caroline County. These soil series are then grouped into four major associations. Each association contains a few major soil series which dominate and several minor soil series which together have fairly common characteristics and management requirements. Suitability for septic tanks will also be generally applicable to solid waste disposal facilities. General characteristics of each association are described below:

1. **Sassafras-Galestown-Fallsington Association** – These soils are moderately coarse textured soils that are predominantly well-drained to excessively-drained. This association runs in a wide diagonal band through the center of the County from the Delaware line east of Greensboro, through Denton, to the Preston and Choptank area. It is bounded on the west by the Choptank River and on the east by the Marshyhope Creek divide. Another small segment extends along the County's southern boundary and up the east side of Marshyhope Creek to include Federalsburg.

Altogether, this association covers 144 square miles or approximately 45 percent of the County. Much of the land is in agricultural production. These soils are easily tilled and well-suited for truck farming and residential development with conventional on-site sewage disposal systems. These characteristics make them the most suitable locations for many types of development, including solid waste acceptance facilities and rural residential development.

2. **Sassafras-Fallsington-Woodstown Association** – These soils are moderately coarse textured soils which vary from well-drained to poorly-drained. The association is found in the Tuckahoe Neck and an area extending north of Ridgely. It is bounded by Tuckahoe

Creek on the west, and the Choptank River on the east. It contains the towns of Hillsboro, Ridgely and Greensboro.

The association covers approximately 67 square miles or 21 percent of the County. Most of the land is in agricultural production. These soils have a greater ability to retain moisture and nutrients making them the best farmlands in the County for general crop production. They are also generally well-suited for solid waste acceptance facilities and development, but somewhat less so than the Sassafras-Galestown-Fallsington association.

3. **Fallsington-Woodstown-Sassafras Association** – These soils are moderately coarse, poorly-drained soils. This association is located in the southeast corner of the County bordering Delaware and generally within the Marshyhope Creek drainage basin. It lies south of Burrsville.

The area covered by this association is approximately 54 square miles or 17 percent of the County. Much of the land within this association is forested and there is relatively little residential development. Percolation characteristics for septic systems range from poor to bad. Extensive agricultural drainage systems have been constructed in this area as part of the Marshyhope Watershed Project. Generally, these soils are poorly suited for most types of development, including solid waste acceptance facilities and rural residential development.

4. **Pocomoke-Fallsington Association** – These are predominantly poorly drained or very poorly drained clayey soils. These soils are located in the northern tip of the County from Greensboro and Bridgetown north. Located within this area are the towns of Goldsboro, Henderson, Marydel, and Templeville.

The area covered by this association is approximately 54 square miles or about 17 percent of the County. Much of the land is wooded. Extensive drainage is required for agricultural use of much of the land. A considerable amount of drainage work was done as part of the Upper Choptank Watershed Project. Generally, the soils in this association are poorly suited for development, including solid waste acceptance facilities and rural residential development.

## Geologic Conditions

Caroline County is a part of the Atlantic Coastal Plain, a wedge-shaped mass of unconsolidated sedimentary deposits which overlie older and harder crystalline rocks. These deposits are nearly

flat lying layers of sand, gravel, silt and clay, generally sloping to the southeast, which overlie crystalline rock.

Known minerals are limited to widespread deposits of sand, clay and gravel. Extractable deposits tend to be concentrated near streams and rivers. There is a minimal local use of these resources, however they are valuable resources to the State of Maryland.

Geological considerations for the siting of solid waste acceptance and disposal facilities are specifically defined in COMAR 26.04.07. The geologic conditions existing in Caroline County do not create any general constraints to the location of solid waste acceptance or disposal facilities. However, geologic conditions must be evaluated on a site-specific basis.

## Location

The importance of location varies with the type of solid waste acceptance facility being considered. For residential collection sites and recycling stations convenient location to residential areas is critical. In Caroline County most residents live within 5 miles of an existing collection site. Igloo recycling stations provide additional convenience to the public.

Rubble landfills should be located to minimize hauling distances from major population centers and from areas with high construction activity. Because rubble waste is often bulky, greater distances to disposal sites can greatly increase transportation costs. Sanitary landfills are the least sensitive solid waste acceptance facilities to location constraints. Virtually all waste delivered to these facilities is in compactor trucks. The MS-II is a sanitary landfill. Both rubble and sanitary landfills should be located on roads with good access to the regional highway system.

## Aquifers

All water supplies for domestic, commercial and industrial use in the County is obtained from ground water sources. Most agricultural withdrawals are also from ground water.

The aquifers underlying the County are layers of sand and gravel which are saturated with water. Silt and clay deposits lying between these formations, being less permeable, do not allow the ready accumulation or movement of ground water. Therefore, they act as barriers or aquiclude which may confine and separate the aquifers.

Shallow or water table aquifers are readily recharged by surface streams and percolating rainfall. These are also referred to as unconfined aquifers. This recharge makes them easily contaminated by a variety of pollution sources, including agricultural applications and septic tanks. Deep or confined aquifers are less subject to contamination but may still be contaminated by leaky casings, poor grouting, natural hydraulic connection with a contaminated aquifer, or contaminated recharge areas.

The major aquifers of the County, listed according to their relative depth and geologic age, starting with the oldest are: Patapsco-Raritan, Magothy, Aquia Greensand, Piney Point, Calvert, Choptank, and Columbia (Pliocene-Pleistocene). The most widely used of these aquifers in the County are the Piney Point, Calvert, and the Columbia. The Piney Point and Calvert are confined aquifers. The Columbia is the shallow unconfined water table aquifer. It yields well in most areas, but is also more subject to contamination. Therefore, the trend in recent years has been to deeper wells for domestic water supply. Other aquifers used less frequently in Caroline are the Choptank and Aquia Greensand.

In Caroline County, the depth below the surface to all deep or confined aquifers increases towards the southeast. For example, the depth to the Piney Point aquifer is about 200 feet below

sea level along a line running from Hillsboro to Marydel. Near Federalsburg, the top of this aquifer lies over 500 feet below sea level.

COMAR 26.04.07.07 establishes standards for the minimum buffer distance for the depth of ground water below the liner of a municipal landfill. In Caroline, Queen Anne's and Talbot Counties, this minimum buffer distance is 1.5 feet unless MDE determines that the site can provide additional buffer.

## Wetlands

Tidal wetlands occur in the County along the Choptank River, Tuckahoe Creek, Marshyhope Creek, and their tributaries. According to the National Wetlands Inventory, the County has 5,422 acres of tidal wetlands. The location of MS-II impacts no tidal wetlands. However, a non-tidal wetlands mitigation plan is required for MS-II.

## Surface Waters, Flood Plains, and Water Quality

Most of the County is included in the Choptank River drainage basin. Major tributaries of the Choptank include Hunting Creek and Tuckahoe Creek. The southeastern part of the County lies in the Nanticoke River drainage basin and its tributary Marshyhope Creek. The Choptank River is tidal to Greensboro and Tuckahoe Creek to above Hillsboro. Marshyhope Creek is tidal to just north of Federalsburg. The lower portions of these streams are brackish. The tidal reaches are bordered by considerable acreage of tidal wetlands and are a valuable wildlife and fishery resource.

Caroline County has both tidal and nontidal riverine floodplains. Floodplains are relatively modest in Caroline County. When flooding does occur, it is typically low in velocity and destructive potential. Much of the floodplain land in the County is also wetland and otherwise unsuitable for development. The County has incorporated restrictions on flood plain development in the Zoning

Ordinance, Subdivision Regulations, and Stormwater Management provisions in its Code. Development of lots can be undertaken only in compliance with certain restrictions, including elevation of all floor levels at least one foot above the 100-year flood plain. All newly created lots must have a sufficient area to build outside of the 100-year floodplain.

### Chesapeake Bay Critical Area

The Chesapeake Bay Critical Area is a 1000' foot buffer along the Choptank River, Tuckahoe Creek and Marshyhope Creek. No new sanitary landfills are permitted within the Critical Area.

### Land Use and Growth Patterns

The Caroline County Zoning Ordinance permits Solid Waste Transfer Stations in certain districts and requires a Special Use Exception for Sanitary Landfills in some districts. Special Use Exceptions must be approved by the County Board of Zoning Appeals which must consider adverse effects on other properties in the neighborhood. The established procedures under the Zoning Ordinance are sufficient to deal with the potential constraints imposed by incompatible land uses and long-term growth patterns of the County. Projects on property owned by MES, such as MS-II are not subject to County zoning processes or authority.

### Asbestos Disposal Capacity

MS-II is authorized to accept friable and non-friable asbestos in the regular landfill cell that is in current use. This facility provides adequate disposal capacity for asbestos waste for Caroline County.

## Hazardous Waste Accident Response

The Caroline County Hazardous Materials Emergency Plan provides detailed procedures for dealing with a hazardous materials emergency. These include concept of operations, direction and control, public information, task assignments, administration and logistics, communications, training, and resource management. This Plan was developed and is updated by the Caroline County Department of Emergency Management. COMAR 26.03.03.03E(4)(e) requires an assessment of the programs and procedures necessary to respond to an emergency spill of hazardous materials within the County. It is hereby determined that the existing programs and procedures as outlined in the Caroline County Hazardous Materials Emergency Plan are adequate, but that they shall be subject to regular review and refinement by the Caroline County Department of Emergency Management.

The Plan is available from the Department of Emergency Management at 9391 Double Hills Rd, Denton, MD 21629 or by calling 410-479-2622.

Non-hazardous, petroleum contaminated soils and other materials resulting from spills and site mitigations cannot be disposed of at any facility located within Caroline County Except at MS-II. Cleanup efforts are coordinated with MDE Materials Emergency Division, Emergency Operations and Technical Support Program.

The Hazardous Materials Emergency Plan also includes procedures for obtaining information from facilities in the County which manufacture, store or use hazardous substances.

## Recycling

In the 2012 legislative session, the Maryland General Assembly passed House bill (HB) 929: Environment – Recycling Rates and Waste Diversion – Statewide Goals, Chapter 692, Acts of 2012 (the “law”). The law takes effect on October 1, 2012, and requires full implementation of the county’s revised recycling plan by December 31, 2015. The law also requires the county to revise its recycling plan by July 1, 2014. The plan must include a provision that provides for a reduction through recycling of at least 20% by weight of their municipal solid waste stream for a county with a population less than 150,000. Only certain materials can be used as the basis for determining the amount of recyclables retrieved from the total waste stream. These materials are designated as “MRA Wastes” and include municipal and commercial solid waste, yard waste, white goods, and metals from homeowners. Excluded from the definition of MRA Wastes are: hospital waste, rubble, scrap metal (except scrap metal that is collected at disposal facilities), land clearing debris, sewage sludge, and waste deposited in a facility dedicated solely for waste from a single generator. These materials are designated as “non-MRA wastes.” Therefore, recycling of any of the excluded materials does not count toward the County’s 20 percent target. White goods and metal cans are considered as MRA wastes, even if collected by junkyards. Tires are considered MRA waste if they are recycled in some fashion. Tires that are used as a fuel source by incineration are defined as non-MRA waste.

The 2012 Recycling Rates and Waste Diversion Goals law sets a voluntary statewide waste diversion goal of 60 percent by 2020. The waste diversion rate is a combination of the MRA recycling rate and a source reduction credit. A source reduction credit of up to 5 percent can be earned by Counties for waste diversion activities such as utilizing Internet resources, demonstration sites (e.g., backyard composting), publication on reuse practices and yard waste reduction and other activities. One aspect related to source reduction in Caroline County and the Midshore Region is the development currently underway by the MRRP of a Reuse Directory and other techniques to divert reusable commodities from the waste stream and even prior to recycling activities.

In July 1990, the Maryland Environmental Service (MES) prepared and submitted separate recycling plans for Caroline, Queen Anne's, and Talbot Counties. Kent County prepared and submitted its own separate recycling plan. This Recycling Plan is incorporated into this Comprehensive Solid Waste Management Plan by reference.

In 1993 all four counties executed an agreement and formally joined together to form a regional consortium, the Midshore Regional Recycling Program (MRRP). Its goal is to share equipment, technical, financial, recycling, and other resources in order to achieve the greatest recycling outcome throughout the region at the least cost. The MRRP has been able to secure guaranteed outlets for recyclables during a time when these markets began to close their doors to smaller, individual programs in favor of larger programs or those who could afford to meet more restrictive specifications. A copy of the agreement between MRRP and Caroline is incorporated by reference.

To fund the regional recycling program, a surcharge is collected on the base tipping fee for each ton of waste disposed at the Midshore Regional Solid Waste Facility. This surcharge is currently set at \$5.00 per ton.

The MRRP has recommended focus areas in which program development is anticipated to yield either greater cost savings to the regional solid waste/recycling management or improvement in current programs for a sounder environmental outcome. These include Source Reduction of Solid Waste:

- Stimulate home composting among regional residents.
- Develop waste reduction/recycling incentive policies.
- Examine opportunities for operating or encouraging reuse and waste exchange programs.
- Discuss the feasibility of solid waste composting in accordance with the requirement in Section 9- 1703(b)(7) of the Environment Article, Annotated Code of Maryland.

Residential recycling programs in the region are typically publicly operated. Chapter Three, “Solid Waste Acceptance Facilities”, describes the recycling centers in Caroline County. These include drop-off centers operated by the Department of Public Works and MES. Recyclables collected throughout the region by MRRP are consolidated at three primary sites: the Midshore Recycling Consolidation Facilities located at the Midshore Regional Solid Waste Facilities in Talbot County and Caroline County; and the Nicholson Drop-off facility in Kent County. These facilities allow smaller loads to be consolidated and then shipped in bulk to processors and markets. In Caroline County there are 12 recycling locations including the 4 county solid waste collection sites and the Holly Road site operated by MES. Full recycling centers are operated at 2 of these sites (Holly Road (MES) and Preston). The other two County collection sites (Melville and Old Denton Road) accept a limited number of recyclable materials. There are also 7 additional igloo recycling sites located in various towns throughout the County.

The MRRP prepares the annual recycling reports for both the entire MidShore region and for the individual counties. The most recent Report available is 2017. The 2017 Report indicates that a total of 32,378 tons were recycled in Caroline, out of a total of 134,907 tons for the Midshore Regional Partnership. The total recycling rate for Caroline County was 53.5 percent in 2017. These totals are estimates based on Caroline County’s share of solid waste being 24% of the total for the partnership.

As described by in the 1992 Annual Report for the MRRP, the economics of recycling are an important issue. From design to implementation, collection to marketing, recycling programs rarely break even let alone turn a profit. Cost-avoidance studies prove to be valuable in streamlining existing programs and making the most of available funds while acknowledging the future dividends of keeping trash out of landfills. The real factor in deciding to maintain or modify a program depends on the price tag of other available disposal methods: on the Eastern Shore, this would be landfilling. Many recycling programs try to justify their costs by demonstrating the program’s ability to help avoid the costs of otherwise disposing of these materials. However, many analyses of cost avoidance fail to account for the whole cost of disposal, reporting tipping

fees but not costs for collection and transportation, transfer site operation, hidden operating costs, or the value of delaying capital outlay for infrastructure associated with landfills such as new roads, electrical upgrades, the rising costs to meet new facility mandates, and the financing, consulting, engineering and infrastructure costs that go with siting a new landfill.

When evaluating the costs of recycling compared with disposal, it is necessary to quantify the environmental and economic impact of both options. With recycling, this includes the savings from avoided groundwater contamination, avoided landfill tipping fees, development of jobs and the local economy, and communal energy savings and greenhouse gas emission reductions. The MRRP program receives bid prices for all commodities, except cardboard, before transporting to markets. The bid price and cost of transportation is used to determine the destination market. Cardboard is currently transported to the Queen Anne's Recycling Center for baling and transportation. Queen Anne's pays the MRRP program based on the market index and signed contract.

The MRRP also sponsors periodic household hazardous waste (HHW) collection events. The location is rotated throughout the region with a spring and fall collection. Materials collected include gasoline, gas/oil mixes, fuels, acids, cleaners, solvents, automotive fluids, bleach, ammonia, pool cleaners, dark room chemicals, household and garden pesticides, insecticides and herbicides, paint products, paint thinner, turpentine, wood preservatives, and wood strippers.

# Chapter 5: Solid Waste Management Plan of Action

## Solid Waste Disposal and Acceptance Facilities

Sanitary Landfills – MS-I was closed on December 31, 2010 and MS-II in Caroline County commenced full service operations on January 1, 2011. MES also operates the residential collection HODO at the Holly Road site.

Rubble Landfills – Caroline County zoning regulations no longer limit future rubble waste landfills to “government owned or operated only” facilities.

Residential Collection Sites – There are five existing collection sites that accept residential solid waste and recyclables: Mid Shore II, Holly Road, Melville Road, Old Denton Road, and Preston. Only the Old Denton Road, Melville Road, and Preston sites are owned or operated by Caroline County.

Resident Recycling Centers – The 9 existing recycling centers, including the recycling centers at the County collection sites, will continue in operation subject to agreement by the property owners. Additional stations may be added as needed to improve convenience and program success.

## System Adequacy for the Planning Period

Through the use of County owned collection sites, long term leases and the development of the MS-II within the County’s boundaries, it is clear that Caroline possesses more than adequate solid waste facilities to span the Planning period. (Table 5.1)

**TABLE 5-1 RESIDENTIAL COLLECTION SITE STATUS**

<b>Site</b>	<b>Status</b>	<b>Term</b>
Melville	Active	Leased
Holly Road	Active	Owned by County; Leased & Operated by MES
MS-II	Active	Owned & Operated by MES
Old Denton	Active	Owned by County
Preston	Active	Leased

In 2019, MS-II accepted 134,946 tons of waste with the majority entering the landfill and some exported off site for recycling. The facility has used approximately 2 million cubic yards of landfill space and has remaining landfill space of over 6 million cubic yards. It is estimated that the facility will reach capacity of landfill space in 2048.

### Management of Waste Streams

The following mechanisms will be used for managing each of the waste streams identified in the Table of Existing and Projected Solid Waste Generation in Chapter Three. Solid waste acceptance facilities within Caroline County are also subject to the requirements of COMAR 26.04.07 “Solid Waste Management” as well as applicable local ordinances and regulations.

### Commercial, Residential, Industrial & Institutional Waste

Most of the waste in these categories is currently disposed of at the MS-II facility, which replaced MS-I, January 1 2011. The counties of the MidShore region will have to carefully monitor the diversion of waste from the region for its impact on the MS-II and its finances. Additionally, an increase in the percentage of the waste stream that is recycled will conserve landfill capacity and thereby extend the life of the MS-II. However, reducing the tonnage of waste received will increase the unit cost of disposal per ton, since fixed and operating costs are somewhat constant.

## Brush, Land Clearing, Construction, and Demolition Debris and Rubble

Caroline County zoning regulations no longer limit disposal facilities for these materials to “government owned or operated only” facilities. MS-II includes facilities for the disposal and/or recycling of brush, land clearing, construction and demolition debris and rubble. This reduces hauling distances for such waste generated within Caroline County, since, prior to MS-II most of this material had to be transported outside of the County to locations such as the MS-I and the C & D Concrete facility near Queenstown.

## Controlled Hazardous Substances

As previously discussed in the Recycling section, MRRP sponsors periodic household hazardous waste (HHW) collection events. The location is rotated throughout the region with a spring and fall collection. Material collected include gasoline, gas/oil mixes, fuels, acids, cleaners, solvents, automotive fluids, bleach, ammonia, pool cleaners, dark room chemicals, household and garden pesticides, insecticides and herbicides, paint products, paint thinner, turpentine, wood preservatives, and wood strippers.

Caroline County has no history as a generator of significant quantities of hazardous waste or as the location of such disposal facilities. The limited needs of local generators can be best served by continued reliance on specialized hazardous waste disposal facilities located outside of the County.

## Dead Animals

This material is primarily road kill and is disposed of at the MS-II landfill site.

## Appliances, etc.

Environmental Protection Agency regulations under the Clean Air Act, Section 608, establish a mandatory recycling program for ozone depleting refrigerants such as chlorofluorocarbon (CFC) during disposal of all air conditioning and refrigeration equipment. The following appliances must be segregated for appropriate disposal by a certified recycling contractor: refrigerators, freezers, air conditioners, water coolers, humidifiers, and any other appliances containing Freon, etc. These appliances are received by the MS-II where CFC removal guidelines are followed.

## Scrap Tires

Section 9-228 of the Annotated Code of Maryland prohibits disposal of scrap tires in a landfill after January 1, 1994. Caroline County does not operate a landfill and disposes of no tires. The County collects tires from the roadsides that are illegally dumped --these tires are transported to the Holly Road site where they are stockpiled in a truck trailer. Collected tires are hauled to recycling locations in either Pennsylvania or Virginia by a contractor. This recycling activity presently costs \$1200 per load. Costs are paid from the MRRP fund. Aside from its high cost, these management practices are adequate.

## Waste Oil

Waste oil is picked up at the collection sites by a contractor. This waste oil is transported out of the County for recycling, mostly for use as heating oil.

## Sewage Sludge

Sewage sludge generated in Caroline County is disposed of by a variety of practices, including hauling to another WWTP, land application, composting, and transport to the MRL. These current management practices are adequate and are expected to continue. It is the responsibility of each

sewage sludge generator to provide adequate storage and management of sewage sludge during the winter months when weather conditions prohibit land application. MDE recommends that a minimum of four months of storage capacity be considered.

## **Septage**

There are presently no approved facilities for dedicated septage disposal located in the County. Septage is currently hauled to approved WWTPs.

## **Collection Systems**

Due to the high cost of establishing and operating collection sites, it is not recommended that additional collection sites be established to serve outlying areas of Caroline County. As previously discussed, the County may consider relocation or consolidation of some sites, or their possible elimination due to costs and competing budgetary needs. As noted above, in September 2011 a 'pay for permit' plan was implemented at \$100 per year.

The County has no current plans to consider County operated, sponsored or franchised curbside trash collection for the unincorporated areas of the County. Arrangements for such services shall be between the private contractors and individual homeowners.

## **Financing Proposed Solid Waste Facilities**

In late 2008 Caroline County transferred ownership of the MS-II property to MES. MES is and has been responsible for financing, construction and operation of MS-II.

## Amending and Updating the Plan

State Law, pursuant to Title 9, Subtitle 5 of the Environment Article, Annotated Code of Maryland, as well as COMAR 26.03.03, requires the governing body of the County, after reasonable opportunity for public hearing, to adopt a triennially revised County Comprehensive Solid Waste Management Plan and have it approved by MDE. The adopted Plan for Queen Anne's County and its incorporated Towns shall be reviewed and updated at least triennially and updated if necessary. For this purpose, municipal and County agencies, as well as owners of private facilities and other federal or State agencies having programmed solid waste management facilities, will be furnished copies of the draft changes for comment. A public hearing with the County Commissioners will then be held. Notice of the public hearing shall be advertised in the Times Record newspaper or other local paper once each week for two consecutive weeks with the first notice appearing at least fourteen days prior to the public hearing. Following the public hearing, the County Commissioners shall take appropriate action. Following the decision of the County Commissioners, the updated Plan shall be sent to MDE for its review and final approval. The updated Plan will not become effective until notification of final approval is received from the State.

In addition, COMAR 26.03.03.05 requires that the comprehensive solid waste management plan shall be revised or amended to include the installation or extension of either a solid waste acceptance facility or solid waste disposal system before the issuance of a permit by MDE. The same public hearing process outlined above for the triennial update shall be used for any revision.

## Summary of Changes and Recommendations

The following is a summary of recommendations and changes in programs, plans, regulations, procedures and policies as a result of the SWMP:

1. Continue with the policy that designates the Midshore Regional Solid Waste Facility as the sole waste disposal facility for municipal solid waste generated in Caroline County.
2. Caroline County should continue to evaluate its permit and fee system for the residential collection sites. User fees, if established, should not be so high as to result in an increase in illegal dumping.
3. New solid waste acceptance facilities should be required to follow the approval sequence outline in the “Amending and Updating the Plan” section.
4. Improvements to the solid waste management system for Caroline County should be included in a Capital Improvement Program which is annually updated and adopted by the County Commissioners.
5. Caroline County should continue to actively promote recycling efforts which fit within the annual budget constraint established by local funding and the MRRP recycling surcharge. Caroline County should continue to pursue the highest diversion of materials from the waste stream that can be economically handled. New recycling programs should focus upon those materials which can provide the greatest weight and diversion for the least cost.

This *Comprehensive Solid Waste Management Plan* is intended to cover the period 2021-2030. The Environment Article, § 9-503(b) requires that the County review its plan at least once every three years in accordance with the schedule set by MDE. In addition, Caroline County will adopt and submit to MDE a revision or amendment to its County plan if the County considers a revision or amendment necessary or if MDE requires a revision or amendment. The County will submit to MDE 2-year progress reports in accordance with the schedule established by MDE.