

2013 - 2023

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ANNE ARUNDEL COUNTY, MARYLAND
TEN-YEAR
SOLID WASTE MANAGEMENT PLAN
2013 - 2023

Prepared For:

Anne Arundel County
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The Anne Arundel County (County) Solid Waste Management Plan (the Plan) was prepared in accordance with the requirements of the Environmental Article, Title 9, Subtitle 5 of the Annotated Code of Maryland and the Code of Maryland Regulations (COMAR) 26.03.03. The Plan covers the succeeding ten (10) year comprehensive planning period of August 2013 – August 2023.

The County received a Certificate of Conformance from the County Office of Planning and Zoning dated October 3, 2013. It was submitted for adoption by the Anne Arundel County Council. Subsequently, the County received formal approval from MDE. Referenced Approvals from the County and the State of Maryland for the Plan are included under **Appendix C**.

The Plan will be revised in the future as necessary to reflect changes in the solid waste management and recycling programs of the County and to comply with the requirements of the Annotated Code of Maryland and COMAR. Any future Amendments to the Plan will be included under **Appendix D** for incorporation in the next comprehensive ten (10) year Plan update.

Summary of Additions and Changes to the Plan

The following additions and changes have been incorporated into this County Plan from the previously adopted and approved County Plan.

- 1) **New** – Statement that identifies document version, approvals and amendments.
- 2) **New** – List of additions and changes from the previously approved Plan dated 2003.
- 3) **New** – Incorporation of County Plan Amendments and/or Revisions dated 2006, 2009 and 2010.
- 4) **New** – Description of the Master Plan for Water Supply and Sewerage Systems dated 2013.
- 5) **New** – Description of the Disaster Debris Management Plan and Activities dated 2009.
- 6) **New** – List of Action Items for the succeeding ten (10) year planning period.
- 7) **Updated** – General revisions to format, text and regulations.
- 8) **Updated** – Descriptions and tabulations for Population Projections based on 2009 data from the County General Development Plan and a description of its goals, actions and policies.
- 9) **Updated** – Descriptions and tabulations for Tonnage Projections based on the most recent MDE Solid Waste Management and Diversion Report (dated November 2011 representing Calendar Year 2010 data) and the most recent County Waste Management Services Fiscal Year End Tonnage Report (dated September 2012) representing Fiscal Year 2012 data (July 1, 2011 to June 30, 2012).
- 10) **Updated** – Descriptions of currently utilized and proposed Solid Waste Management and Recycling Support Facilities by the County.
- 11) **Updated** – Descriptions of current mechanisms available to the County for procuring support resources for professional and operational services.
- 12) **Updated** – Descriptions of the Landfill Gas Control and Collection System and the recently commissioned Landfill Gas-to-Electricity Facility.

- 13)**Updated** – Descriptions of the Lifespan of Cell 8 and Cell 9 at the Millersville Landfill and Resource Recovery Facility (MLFRRF).
- 14)**Updated** – Descriptions for the Future Needs Assessment regarding the conservation of air space and the longevity of the Cell 8 and Cell 9 landfill areas.
- 15)**Updated** – Descriptions of enhancements and alternatives to the existing solid waste management and recycling systems. Description of the compatibility of such enhancements and alternatives with the existing systems, facilities and surrounding communities.
- 16)**Updated** – Descriptions for the Future Needs Assessment regarding alternatives to landfilling. Description of the compatibility of such alternatives with the existing systems.
- 17)**Updated** – Description of the Municipal Solid Waste Ten-Year Assessment.
- 18)**Updated** – Descriptions regarding recycling program implementation, recycling collection, material management as well as new programs for electronics, fluorescent lights and recycling at public schools and colleges.
- 19)**Updated** – Designations for the Millersville, Glen Burnie and Sudley Convenience Centers have been changed to the Central, Northern and Southern Recycling Centers, respectively.

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Glossary of Terms

- A -

Agricultural Wastes - domestic animal manure or residuals in liquid or solid form generated in the production of poultry, livestock, fur-bearing animals, and their products. Agricultural waste includes residuals generated in the production and harvesting but not of subsequent processing of all agricultural, horticultural, or aqua-cultural commodities. Agricultural waste does not include land clearing debris unless the cleared land is intended solely for agricultural purposes.

Ash - residue from the burning of wood, solid waste, coal, and other combustible materials (also referenced as combustion ash).

- B -

Bulky Item - items whose large size or weight precludes or complicates their handling by normal collection, processing, or disposal methods. The County's curbside program handles many bulky items such as furniture, mattresses, boxsprings and similar items.

- C -

Clean Fill (refer to Rubble) - clean earthen fill containing rock, concrete, non-refractory brick, and asphalt created as a result of construction excavation activities, mining, or regarding projects.

Closure - the cessation of operation of a solid waste management facility and the act of securing such a facility so that it will pose no significant threat to human health or the environment.

Code of Federal Regulations (CFR) - document containing the rules established in the Federal Register (FR) by the Executive Departments of the Federal Government.

Code of Maryland Regulations (COMAR) - the State regulations containing regulations for the processing and disposal of solid waste.

Compost – the product of composting.

Composting - the controlled aerobic organic decomposition of organic waste material.

Construction and Demolition (C&D) Debris (includes Rubble) - materials generally considered to be non-hazardous as a part of a construction or demolition project or from the renovation of a structure. Construction debris is structural building material including cement, concrete, bricks (excluding refractory type), lumber, plaster and plasterboard, insulation, shingles, floor, wall and ceiling tile, steel, pipes, glass, wires, carpet, wallpaper, roofing materials, felt, or other structural fabrics. Demolition debris is debris associated with the deconstruction of buildings, roads, bridges, and other structures includes structural steel, concrete, bricks (excluding refractory type), lumber, plaster and plasterboard, gypsum wallboard, insulation, cement, shingles and roofing material, floor and wall tile, asphalt, pipes, wires, and other items physically attached to the structure, including appliances if they have been or will be compacted to their smallest practical volume.

C&D Landfill (also known as Rubble Landfill) - a waste disposal facility, which is an area of land or an excavation for disposal of specifically defined wastes of land clearing, demolition, construction debris and asbestos waste.

Controlled Hazardous Substance (CHS) - means a hazardous waste as defined in COMAR 26.13.02, except as provided in COMAR 26.13.02.06.

County - Anne Arundel County, Maryland.

Critical Areas (Areas of Critical Concern to the County) - specific geographical areas of the State which, based on studies of physical, social, economic, and governmental conditions and trends, are demonstrated to be unique or significant to the State and have been designated for special management attention to assure the preservation, conservation, or utilization of their special values.

- D -

Department of Public Works (DPW) - the department within the Anne Arundel County government that performs all functions involving public works or utilities surveys, reports, maps, drawings, specifications and estimates; the custody of maps and plans of the County; the supervision of the execution of and performance of all contracts for capital projects, as defined in Section 702 of the County Charter, except for school projects; the construction of capital projects by its own employees; the maintenance and cleaning of roads, streets, alleys, other public places, bridges, viaducts, subways and underpasses; the acceptance of roads and dedicated ways as prescribed by law; the maintenance of water mains, sewers, drains and culverts; the maintenance and operation of sewage disposal and treatment plants; the collection of solid waste and the

operation and maintenance of facilities for its disposal; the regulation, operation, maintenance and control of water supply; the control of fire hydrants; mosquito control; the administration and enforcement of rules and regulations relating to water and wastewater; and any other function, not inconsistent with the County Charter, that is assigned by directive of the County Executive or by ordinance of the County Council.

- E -

Enterprise Fund - The County's solid waste enterprise fund is a self-sustaining cost center that is used to account for all of the recycling and solid waste management system activities, revenues and expenditures including long-term commitments. Revenues are obtained from: annual residential fees from curbside collection customers; tipping fees at the Millersville Landfill; the sale of recyclable commodities from residential curbside collection, the three (3) Recycling Centers and the Landfill; and electricity and renewable energy credits from the Millersville Landfill Gas-to-Electricity Facility. All system revenues are deposited in the enterprise fund and pledged to the payment of system obligations, including administration, debt service, operations, maintenance, development, renewal and replacement of system components, and funding for closure and post-closure activities. For purposes of accountability and sustainability, this enterprise fund is segregated from all other public service obligations and operations, including the General Fund.

Environmental Protection Agency (EPA) - Federal agency responsible for providing regulations, guidance, and enforcement of solid waste management activities.

- G -

General Development Plan - The County's General Development Plan, or GDP, is a comprehensive land use plan that establishes policies and recommendations to guide land use decisions in the County over a 10 to 20 year planning horizon. The GDP is used by the County (Local), State and Federal agencies, citizens, developers, consultants, community associations, and others in making decisions about growth and development, land preservation, resource protection, and the provision of infrastructure and services. The County Office of Planning and Zoning is responsible for preparing and periodically updating the GDP. The GDP is formally adopted by the County Council.

Geomembrane - An essentially impermeable geosynthetic material composed of one or more synthetic sheets used for the purpose of liquid, gas or solid containment. Typically used in the construction of a base (bottom) liner or cap (top) liner system for a landfill.

Ground Water - water beneath the surface of the ground, within a zone of saturation.

- H -

Hazardous Waste - solid waste, or a combination of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality, or an increase in serious irrevocable or incapacitating reversible illness, or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated, or otherwise managed.

Household Hazardous Waste (HHW) - hazardous substances for use in the home in small quantities which, when discarded, may contribute to the contamination of natural resources and water supplies and which may be hazardous to public health. Household hazardous wastes include, but are not limited to, oil-based paints, pesticides, herbicides, disinfectants, and drain and oven cleaners.

- I -

Industrial Solid Waste - means any liquid, gaseous, solid, or other waste substance, or combination thereof, resulting from any process of industry, manufacturing, trade or business; or the development of any natural resource, including agriculture.

- L -

Landfill - an engineered solid waste disposal facility, which is an area of land or an excavation where wastes are placed in a manner that minimizes public health and environmental hazards and is designed, installed, and operated according to the provisions of EPA (under CFR) and MDE (under COMAR) regulations; a solid waste disposal facility, which is an area of land or an excavation where wastes are or have been placed for disposal, for which a permit other than a general permit is required.

Land-Clearing Debris – waste generated through land-clearing operations, which includes: earthen material (clays, sands, gravels and silts), topsoil, tree stumps, root mats, brush and limbs, logs, vegetation, and rock. Land clearing debris does not include yard waste which has been collected at the curbside.

Land-Clearing Debris Landfill - a landfill permitted under State law and regulation as a land-clearing debris landfill for the acceptance of land-clearing debris.

Leachate - liquid resulting from precipitation that has percolated through solid waste which has extracted dissolved or suspended material from the waste pile.

Lift - the thickness of waste placed in a horizontal series of cells in a landfill.

Liner - a continuous layer of low-permeability natural or synthetic materials, under the bottom, top, and sides of a landfill, solid waste disposal unit, or leachate surface impoundment which controls the downward or lateral movement of waste constituents, or leachate.

- M -

Maryland Department of the Environment (MDE) – the State regulatory service agency responsible for the protection and restoration of Maryland's air, water and land resources through the enforcement of federal (delegated) and State environmental regulations. MDE is the primary regulatory authority in the State of Maryland for solid waste management programs and activities. MDE creates regulations, issues permits, performs inspections and provides technical assistance to businesses and jurisdictions with pollution control, growth issues, and environmental emergencies. MDE also provides public education and outreach to citizens as well as institutes enforcement actions for noncompliance.

Municipal Landfill (also known as Sanitary Landfill) - a solid waste acceptance facility permitted under COMAR that is designed, installed, and operated so that all types of waste generated by a community, except waste specifically prohibited by the regulations or a permit issued under the regulations, can be accepted.

- N -

Natural Wood Waste - tree and other vegetative refuse. Natural wood waste includes tree stumps, brush and limbs, root mats, logs and other natural vegetative materials. Natural wood waste does not include food waste.

- O -

Office of Planning and Zoning (OPZ) - agency within the Anne Arundel County government that is charged with the responsibility and duty of planning for the physical development and growth of the County, including the preparation and revision of a Master Plan therefore and the preparation and revision from time to time of rules and regulations governing subdivisions. It is also responsible for the preparation,

administration and enforcement of a zoning map and of zoning rules and regulations which shall constitute a zoning code.

- P -

Post-Closure Care - regulations under EPA (CFR) and MDE (COMAR) that establish the minimum requirements for municipal solid waste landfills for compliance by owners and operators once the landfill stops receiving waste and completes closure activities. Post-closure care activities consist of monitoring and maintaining the waste containment and monitoring systems of the landfill to ensure protection of public health and to prevent any releases of contaminants to the environment. Specific post-closure care requirements consist of maintaining the integrity and effectiveness of the: final cover (cap) system; leachate collection system; groundwater monitoring system; and methane gas monitoring system. The owner and operator of a closed municipal solid waste landfill must prepare a written post-closure care plan that provides for continued monitoring and maintenance of the landfill closure systems. The required post-closure care period is thirty (30) years from site closure, but can be modified with approval of an approved State program as necessary to ensure protection of human health and the environment.

- R -

Recycling - any process in which recyclable materials that would otherwise become solid waste, are collected, separated, reused or processed and returned to the market place to use in the form of raw materials or products.

Recycling Center - a facility or location primarily for residents to drop off recyclables, yard waste and trash. Small quantities of recyclables are also accepted from business customers at Recycling Centers.

Refuse - synonymous with solid waste.

Residential Waste - mixed household wastes, including yard wastes, generated by the general population.

Resource Conservation and Recovery Act (RCRA) - the Federal Law that provides guidelines and standards for the management of both hazardous (RCRA Subtitle C) and non-hazardous (RCRA Subtitle D) waste. More specifically for Subtitle C, RCRA gives EPA the authority to control hazardous waste from "cradle-to-grave." This includes the generation, transportation, treatment, storage and disposal of hazardous waste. With respect to Subtitle D, RCRA sets forth a framework for the management of non-

hazardous solid wastes (such as the disposal of municipal solid waste in landfills). For Subtitle D, EPA developed detailed technical criteria for solid waste disposal facilities, which includes specific provisions on location, operation, design, ground water and gas monitoring, corrective action, closure and post-closure care and financial assurance. These regulations are contained in the Code of Federal Regulations (40CFR), Parts 257 and 258. EPA delegates authority for oversight of Local and State-level solid waste programs to authorized State agencies such as MDE.

Resource Recovery Facility - a processing facility at which component materials of solid waste are recovered for use as raw materials or energy sources.

Rubble - Wastes acceptable for disposal in a permitted rubble landfill or cell including: demolition debris, construction debris, asbestos, and land clearing debris (MDE definition). The County classifies “Rubble” as brick, block, stone, etc. that fits the definition of clean fill for materials received at County facilities.

- S -

Sanitary Landfill - (also refer to Municipal Landfill) - an engineered method of disposing of solid wastes on land in a manner that minimizes public health and environmental hazards, and is designed, installed, and operated according to the provisions of COMAR.

Site - the area of land within the property boundaries of a solid waste management facility where one or more solid waste processing, resource recovery, recycling, storage, or disposal areas are located.

Sludge - normally a term applied to residual solids resulting from the treatment of wastewater; consisting of: organic solids, grit, inorganic solids, and chemical precipitates. Sludge can also be referred to as biosolids.

Solid Waste - recyclables, garbage, trash, refuse, yard waste, construction and demolition debris, white goods, special waste, ashes, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations.

Solid Waste Acceptance Facility - any landfill, incinerator, transfer station, or processing facility whose primary purpose is to dispose of, treat, consolidate, or process solid waste.

Special Medical Waste (SMW) - solid waste that is composed of anatomical material, blood, blood-soiled articles, contaminated material, microbiological laboratory wastes or sharps.

Special Wastes - waste having special characteristics or require special handling.

Subtitle C - subtitle of RCRA concerned with the management of controlled hazardous substances (CHS) and hazardous wastes. Rules implementing Subtitle C requirements are found at 40 CFR, Parts 260-268.

Subtitle D - subtitle of RCRA which establishes a framework for Federal, State, and Local government cooperation in controlling the management of non-hazardous solid waste. Rules implementing Subtitle D are found at 40 CFR, Parts 257-258.

- T -

Title V (of Clean Air Act) - law requiring, among other things, air operating permits for facilities (including landfills) that have the potential-to-emit (PTE) over specified thresholds.

Transfer Station - a place or facility where waste materials are taken from one collection vehicle (for example, compactor trucks) and placed in another transportation unit (for example, over-the-road tractor-trailers, railroad gondola cars, barges or ships) for movement to other solid waste acceptance facilities.

- W -

White Goods - discarded refrigerators, ranges, washers, water heaters, freezers, and other similar domestic and commercial appliances.

Waste Management Services (WMS) - the bureau within DPW of the Anne Arundel County government that is responsible for the systematic planning and implementation of solid waste programs and activities within the County. WMS consists of four (4) primary functional areas that include: administrative operations, the solid waste disposal and maintenance division, the recycling division and the community services division. Administrative operation provides all the administrative support necessary to procure goods and services, manage contracts, maintain operational spending plans, maintain attendance and payroll records, manage landfill commercial customer accounts, maintain landfill scalehouse operations and other miscellaneous administrative functions. The Solid Waste Disposal and Maintenance Division is primarily responsible for the Millersville Landfill and Resource Recovery Facility, the two closed landfills in

Glen Burnie and Sudley, the environmental monitoring and maintenance at the three (3) sites, and the procurement and maintenance of the specialized vehicles and equipment utilized throughout the entire Bureau. The Recycling Division manages all the recycling activities, initiatives, educational programs and customer outreach established to promote recycling as an important choice for our citizens. The Recycling Division is also responsible for managing several contracts that process and recycle government office recyclables, household hazardous waste, electronic devices, and yard waste. The Community Services Division manages the operations of the three (3) Recycling Centers, the countywide curbside collection service, the community clean-up program, and the curbside bulk item pickup service.

Working Face - that portion of a landfill where waste is deposited, spread, and compacted. Also referred to as the active face of a landfill.

- Y -

Yard Waste - vegetative matter from landscape maintenance or land clearing operations such as tree and shrub trimmings, grass clippings, leaves, trees, brush, and stumps.

INTRODUCTION

Introduction

Anne Arundel County (County) is one (1) of twenty three (23) counties in the State of Maryland. The County has had a charter form of government since 1965. The County is governed by a County Executive and a seven (7) member County Council. The County Executive and Council members are elected in the same years Maryland conducts its legislative elections, and elected officials may serve a maximum of two (2) consecutive four-year terms. The County Council has the exclusive power to enact, repeal, and amend local laws. The County is divided into seven (7) Council Districts, which are presented on **Appendix A, Figure INT-1**. A single Council member is assigned to represent each district.

The County is located south of the city of Baltimore, west of the Chesapeake Bay, and forms part of the Baltimore-Washington Metropolitan area. The County encompasses a total estimated area of approximately 416 square miles and maintains a population of approximately 540,000 residents. The County also borders several other Maryland counties, which include: Baltimore County (north), Calvert County (south), Howard County (northwest) and Prince George's County (southwest). The jurisdictional boundaries of the County and borders with the above referenced counties are presented in **Appendix A, Figure INT-2**.

MDE requires each County in the State of Maryland to prepare and adopt a Plan demonstrating adequacy for the management and disposal of solid waste, which covers the succeeding ten (10) year planning period. This Plan must be prepared in accordance with the requirements of the Environmental Article, Title 9, Subtitle 5 of the Annotated Code of Maryland, and COMAR 26.03.03. The governing authority in the County is the County Council, which must approve and adopt the Plan pursuant to regulatory requirements.

Prior to presentation to the County Council, the Plan is provided to MDE for review and comment. The County addresses comments received from MDE to secure preliminary approval. Subsequently, the Plan is presented to the County Council for deliberation, approval and adoption. Upon adoption by the County Council, the Plan is submitted to MDE for final acceptance and approval.

Once the Plan is approved by MDE, the County is required to comply with the requirements of Sections 9-503 (b) and 9-506 (b) of the Environment Article, Annotated Code of Maryland. Section 9-503 (b) requires the County to review its Plan at least once every three years in accordance with the schedule set by the Department. Section 9-506 (b) requires the County to submit a progress report to the Department every two years on the status of the development of the Plan.

County and State Approvals

This update to the County's Plan addresses the succeeding ten (10) year planning period from 2013 to 2023. A Certification of Conformance from the County OPZ was issued for the Plan on October 3, 2013 (refer to **Appendix C**). The Plan was adopted by the County Council and MDE formally approved the Plan (**Appendix C**).

State and County Regulatory Requirements

Solid waste management regulations and policies exist at the Federal, State and local government levels. Traditionally, the Federal government (EPA) has provided the overall regulatory framework for solid waste and sets the minimum standards for protecting human (public) health and the environment. Delegated federal standards that MDE must implement through its regulatory responsibilities include, but are not limited to: the Resource Conservation and Recovery Act (RCRA), the Clean Air Act, the Clean Water Act, and the Safe Drinking Water Act.

The implementation of these standards and regulations are the responsibility of State and Local governments. The State of Maryland established MDE in 1987 to protect and

restore air, water and land resources within the State through the enforcement of Federal and State environmental regulations.

MDE is the primary regulatory authority in the State of Maryland for solid waste management programs, activities and facilities, which includes: waste disposal, recycling, surface and groundwater protection and erosion and sediment control, among others. MDE creates regulations, issues permits, inspects facilities and provides technical assistance to businesses and jurisdictions in the areas of pollution control, growth issues, and environmental emergencies. MDE also provides public education and outreach to citizens and institutes enforcement actions for regulatory noncompliance. In addition, MDE reviews County solid waste management and recycling plans.

Overall, MDE enforces Federal and State environmental laws (i.e. RCRA, the Environmental Articles of the Annotated Code of Maryland) and regulations (i.e. CFR and COMAR) regarding solid waste management.

Purpose and Scope of the Plan

The goals of this Plan are to establish a basis for the conservation of resources and protection of the environment within the County, and to ensure that adequate solid waste disposal capacity exists for at least the succeeding ten (10) year planning period. These goals can be accomplished through enhancing existing programs and developing new programs that maximize waste reduction, support efficient operations and increase recycling. Additionally, alternatives to the current practice of land filling must continue to be explored to create a more diversified system of handling the County's waste stream.

Through implementation of the various elements of this Plan, the County has created an integrated solid waste management system (Integrated System), which will meet the future solid waste disposal needs of the County. The Integrated System utilizes industry standard practices for waste management and the components of the EPA Waste

Management Hierarchy, which are presented in **Appendix A, Figure INT-3**. The hierarchy flows from source reduction and reuse, to recycling and composting, to energy recovery and to treatment and disposal on a most-to-least preferred basis.

The County's Integrated System and the function of its components are geared towards accomplishing one overarching goal: prolonging the life of the only remaining and permitted disposal areas (Cell 8 and Cell 9) of the Millersville Landfill (County Landfill). To assist with achieving this goal, the County implemented a Solid Waste Management Strategy in FY99 (1998-1999), which consisted of the active diversion of 76% of the County-collected residential waste to non-County operating solid waste acceptance facilities. The remaining portion (24%) of the County-collected residential waste stream was disposed of at the County Landfill.

In FY13 (2012-2013), the County refined its Solid Waste Management Strategy, which currently consists of: 45% recycling, active diversion of 31% of the County-collected residential waste to non-County operating solid waste management facilities (e.g. transfer stations), and landfilling the remaining 24% of the County-managed municipal waste stream at the County Landfill. A graphical representation of the County's FY13 Solid Waste Management Strategy is presented as **Appendix A, Figure INT-4**. The strategy will be refined from time to time, to insure that diversion continues as a mechanism to support low, affordable fees for County customers.

To ensure that the County Landfill continues to meet the disposal needs of residents, the County will continue to implement the Integrated System's components, individually and in combination, as well as promote its ongoing waste minimization and recycling programs. In addition, the County will pursue other innovative solid waste management and recycling initiatives within the limits of affordability.

The County will use this Plan as a tool that guides its solid waste management efforts during the succeeding ten (10) year planning period. The Plan provides the context that will support numerous decisions on the implementation of required studies, legislative

initiatives, capital construction and management programs that support the Integrated System and Solid Waste Management Strategy.

Public Participation

The public was afforded the opportunity to comment on the Plan at a scheduled hearing of the Anne Arundel County Council. As required by the Environmental Article, Title 9 of the Annotated Code of Maryland, appropriate notification regarding the public hearing was provided to the residents of the County. Specifically, the principal elected officials of municipal corporations within the County were given a minimum of fourteen (14) calendar days notice before the hearing. Notice of the time and place for the public hearing as well as a summary of the Plan were published in the form of a newspaper advertisement in the Capital Gazette, a newspaper with general County circulation. This newspaper advertisement was run at least one (1) time per week for two (2) successive weeks and at least fourteen (14) calendar days before the public hearing.

Plan Organization

The Plan addresses the management of solid waste and includes discussions of generation, waste reduction and recycling, collection, transportation, processing, and disposal. Topics within the Plan mirror those outlined in the Environmental Article, Title 9, Subtitle 5 of the Annotated Code of Maryland and in COMAR 26.03.03.03. A listing of these regulatory required topics is included at the beginning of Chapters 1-5. A more specific listing of these topics with cross references for locating topic discussions within the Plan is provided with the Plan Transmittal Letter to MDE as the Regulatory Cross Reference Table. A general outline for this Plan is presented as the Table of Contents.

Description of Plan Chapters 1-6

Chapter 1: Goals, Objectives and Policies

The goals and objectives guiding solid waste management in the County are presented in this Chapter. These goals and objectives are included in the Chapter 4 discussion of enhancements to the existing solid waste management and recycling systems and the evaluation of alternatives to the existing systems. They are also included in Chapter 5 in the formulation of recommended actions.

Regulatory requirements and input from the public guide solid waste management planning, policy, operations and decision making. Chapter 1 also describes the structure of the County Government as it relates to solid waste management, and the impact of existing Federal, State, and Local regulations on the planning, establishment, and operation of solid waste disposal and recycling systems in the County.

Chapter 2: County Background

Historical and geographical information about the County is presented in this Chapter. A description of the regional setting and history provides the background for discussing the effect of growth on solid waste management and recycling services and facilities.

Population projections for the County are presented in Chapter 2. Projections are the basis for the prediction of solid waste and recycling management needs (by quantity of each material, in tons) and the need for solid waste management and recycling facilities based on the remaining capacity of current systems and facilities. Also included in this Chapter are summaries of the requirements and policies of the County's 2009 General Development Plan (GDP) and the zoning requirements relating to solid waste management and recycling.

Chapter 3: Solid Waste Management Systems

The purpose of this Chapter is to present the current solid waste management practices and associated historical and most recent data for solid waste and recyclable materials managed in the County. This information will serve as a baseline for the development of recommendations in the Chapters that follow. An analysis of the County's waste stream is provided, including historic data, projections of waste generation, waste stream composition, and quantities of imported and exported wastes and recyclables (in summary format). This Chapter also presents descriptions of the existing collection, recycling and disposal systems for solid waste and recyclables as well as the existing and proposed waste and recyclables management facilities.

Chapter 4: Assessment of Solid Waste Management Systems

Using the data presented in the Chapters 1-3, Chapter 4 presents an assessment of the adequacy of the existing integrated solid waste disposal system to meet the goals and objectives of the County for the succeeding ten (10) year planning period. The assessment includes a review of existing and proposed solid waste and recyclables management facilities and programs. Enhancements and alternatives to the existing systems for attaining the stated goals and objectives are evaluated and implementation plans are discussed. Compatibility of such enhancements and alternatives to the existing systems are also discussed.

Chapter 5: Plan of Action

Based on the future needs assessment and associated enhancements, alternatives and compatibilities to the existing systems presented in Chapter 4, a plan of action for solid waste management and recycling activities is presented in Chapter 5. The recommended plan of action includes a description of: the programs to be implemented and facilities to be utilized over the succeeding ten

(10) year planning period, the methods to manage the County's solid waste and recycling streams, the strategies for ensuring adequate landfill capacity, the beneficial use of solid waste residues, and the financing of programs and facilities.

Chapter 6: Reference Documents of the Plan

Numerous County documents were reviewed to obtain updated information to assist with the preparation of this Plan. A summary list of these documents is provided in Chapter 6.

Regulatory Topic Summary
COMAR Title 26.03.03.03(B)

Chapter 1 – Goals, Objectives and Policies

“Chapter 1 shall contain:

- 1) Statement of the county’s goals regarding solid waste management, the objectives and policies necessary to achieve these goals, and a discussion of the conformance of these objectives and policies with those of State, regional, and local comprehensive land use plans and programs;*
- 2) Brief discussion, with charts, of the structure of the county government as it relates to solid waste management; and*
- 3) Brief discussion of State, federal and local agencies, laws, and regulations which affect the planning, establishment, and operation by the county of solid waste disposal systems.”*

CHAPTER 1

1.0 Goals, Objectives and Policies

State regulations require the County to identify solid waste management goals, and the objectives and policies necessary to achieve those goals. Furthermore, the extent to which these goals and objectives conform to the objectives and policies of State, Regional, and Local comprehensive land use plans, and programs, must be examined. In addition, the structure of the County's government as it relates to solid waste management and Federal, State and Local agency laws and regulations that affect the planning, establishment, and operation of solid waste disposal systems needs to be reviewed and presented.

Environment Article 9, Subtitle 5 of the Annotated Code of Maryland and COMAR requires each County to develop and present guidelines for solid waste management including collection and disposal, within a County Plan. The Plan must evaluate and assess the extent, adequacy, sizing, staging, and other characteristics of such facilities and services to support the existing and future solid waste management needs of the County. The modification, extension or expansion of solid waste management systems must also be consistent with the County's GDP.

1.1 Goals

The purpose of this Plan is to describe the County's procedures and mechanisms to manage solid waste over the succeeding ten (10) year planning period. In addition to meeting State regulatory requirements, the County has set forth a set of solid waste management goals as a basis for setting future objectives and evaluating future policy decisions. The goals of the Plan include:

- Reduce, reuse and recycle solid waste in accordance with the current standard industry practices and approved programs of the County.

- Develop and implement recycling programs and plans beyond the visions of the 1988 Maryland Recycling Act (MRA) to reduce the amount of solid waste disposed of by the County by specific percentages based on population.
- Collect, transport and manage solid waste safely and efficiently.
- Provide full-service solid waste and recycling acceptance facilities sufficient to meet present and future demands.
- Dispose of solid waste in an environmentally sound and economically feasible manner, utilizing a full array of facilities and procedures.
- Maintain a “good neighbor” relationship with residents in the immediate vicinity of County solid waste and recycling acceptance facilities.
- Consider regional approaches to solid waste and recycling management.
- Maintain programs that promote waste reduction, reuse, and recycling over disposal.
- Assess the demands of the County with respect to the capacity of the existing solid waste management and recycling systems. Evaluate potential enhancements and alternatives to such systems to meet those demands. Implement programs to maximize the efficiency of existing systems as well as support new systems to meet present and future demands.
- Develop and implement strategic plans to maximize the life span of the County’s landfill.
- Focus public education, outreach, operational policies and procedures at facilities that maximize the amount of solid waste that is recycled. Also educate the public on the sound and sustainable solid waste management practices implemented by the County.

1.2 General Development Plan

The County completed the last update to the General Development Plan (GDP) in April 2009. The County’s GDP is a policy document to guide decision making on future growth, development, resource management and protection, and provision of services in the County, which has been adopted by the County Council. Within the GDP, there

are four (4) overarching priorities that when used in combination create an overall Community Vision of the County for 2009 and beyond. The priorities of the GDP include: “Balanced Growth and Sustainability,” “Community Preservation and Enhancement,” “Environmental Stewardship,” and “Quality Public Services.” The GDP also provides policies and actions to fulfill the goals of each priority area. With respect to the Plan, the GDP maintains a specific goal under Quality Public Services – to efficiently manage, reduce, and recycle solid waste, which is planned and implemented by the County Department of Public Works’ (DPW) Bureau of Waste Management Services (WMS).

1.3 Compliance with State of Maryland Recycling Act of 1988

The 1988 Maryland Recycling Act (MRA) gave new responsibilities to jurisdictions in the State of Maryland to reduce the amount of solid waste disposed of by its Counties. Specifically, MRA required Maryland’s jurisdictions to develop and implement recycling programs by January 1, 1994. The recycling programs in jurisdictions with populations greater than 150,000 were required to recycle 20% of their waste and jurisdictions with populations less than 150,000 were required to recycle 15% of their waste. In no case was the recycling rate to be less than 10%. During the enactment of MRA, the County had a population greater than 150,000. The County successfully implemented residential curbside recycling and other recycling programs to exceed the 20% recycling mandate in 1994.

Since then, the County has continued to respond to the legislative intent by implementing various solid waste reduction, diversion and recycling programs. Specifically, the County developed, implemented and enhanced programs for: single stream collection and recycling, community clean-up efforts, bulky item collection, and yard waste processing and recycling. In a similar fashion, other programs for household hazardous waste acceptance (1998), electronics recycling (2002), florescent light recycling (2006), support for commercial recycling (2008), and support for recycling in public schools and colleges (2009) have been implemented by the County. The County also developed a program to implement recycling within multi-family dwelling units

(apartments, condominiums, etc.) in 2012. The County has consistently exceeded the recycling rate of 35%, mandated by House Bill 929 (2012), beginning with calendar year 1997.

An essential component of a successful recycling program has been and continues to be public outreach and education. In conjunction with the solid waste reduction, diversion and recycling programs, the County has also focused on outreach efforts to educate residents on how to maximize the capture of recyclables through segregation, collection and drop-off in order to reduce the amount of solid waste that needs to be disposed of in landfills. Current public education and outreach initiatives include, but are not limited to:

- Utilize a social marketing campaign designed to promote information sharing with County residents, providing them with the tools and motivation needed to be successful in reaching current waste reduction and recycling goals.
- Prepare and deliver various recycling presentations to County schools on a regular basis.
- Explore ways to assist multi-family dwellings in recycling and collection.
- Support small businesses with the establishment of recycling collection programs.

These initiatives are intended to establish recycling as an integral part of landfill preservation, natural resource conservation and fiscal stability.

1.4 Objectives and Policies

Environmental Article, Title 9, Subtitle 5 (§9-501) and COMAR 26.03.03.03, makes the County responsible for providing a comprehensive plan to adequately provide for solid waste acceptance facilities and solid waste collection and disposal systems. Within the GDP, several policies were established to ensure the adequacy of the solid waste management system of the County, which include:

- Policy 1: Optimize recycling programs, systems, and outreach with a clear priority toward recycling over land disposal.
- Policy 2: Capitalize on options to maximize the life expectancy of the Millersville Landfill and delay replacement long into the future.
- Policy 3: Recycle at least 50% of the residential solid waste generated at households within the County.
- Policy 4: Former landfill sites and adjacent properties should not be redeveloped with incompatible land uses. Residential uses and other land uses relying on well water should not be located on or near former landfill sites without appropriate clearance from governmental agencies.
- Policy 5: Prohibit new solid waste landfills in locations near residential areas that rely on water supply wells and near environmentally sensitive areas.

1.5 County Government Structure In Relation To Solid Waste Management

The County Office of Planning and Zoning (OPZ) and DPW participate in the process of comprehensive long-range planning for County-wide solid waste management. DPW is responsible for the implementation of these efforts.

The organizational structure of the Executive Branch of the County Government is presented in **Appendix A, Figure 1-1**. **Appendix A, Figure 1-2** outlines WMS, the Bureau within the County DPW that maintains the primary responsibilities of developing and implementing solid waste management and recycling goals, policies and actions in the County.

1.5.1 Administration

WMS operates as an Enterprise Fund, supported by user and landfill fees. No general tax revenue is devoted to County solid waste management programs or services. WMS provides many services directly to County residents and interacts with them on a daily basis. WMS also responds to information requests,

addresses residents' concerns and directs suggestions to appropriate personnel within the County government structure. The organization is headed by a Deputy Director of the Department of Public Works. WMS is comprised of five (5) divisions: Disposal and Maintenance, Recycling and Waste Reduction, Community Services, Financial Services and Scalehouse Operations, which are overseen by the Solid Waste Operations Administrator.

The Deputy Director for WMS bears responsibility for all aspects of the County's solid waste management program. Specific aspects of the program include the management of the WMS annual operating budget and the Solid Waste Enterprise Fund, controlling and maintaining various expenditure and revenue accounts, developing and overseeing solid waste capital improvement projects, developing and implementing strategies and directing the mission, priorities, goals and objectives of the organization. The Deputy Director is also responsible for compliance with all applicable Federal, State and Local laws and regulations governing various aspects of the operation.

The Solid Waste Operations Administrator oversees the operation of all WMS facilities, divisions, and programs; administrative and financial aspects including management of the scale house; long-term planning; and serves as capital budget liaison.

The ***Disposal and Maintenance Division***, under the guidance of the Solid Waste Disposal and Maintenance Manager is responsible for the following:

- Millersville Landfill and Resource Recovery Facility (Landfill) which includes the active landfill and its recycling areas; storage warehouse; equipment maintenance building; scalehouse, gas management system (including the landfill gas-to-electricity facility); leachate pretreatment plant and collection system; and yard waste composting area.

- Post-closure care for closed landfill cells at the Landfill and closed landfills at Glen Burnie and Sudley.
- Equipment maintenance program.
- Environmental monitoring and reporting.
- Capital Project execution.
- Support of programs implemented by the Recycling Program and the Community Services Program, as necessary.

The **Recycling and Waste Reduction Division**, under the guidance of the Recycling and Waste Reduction Program Manager is responsible for:

- Planning new recycling services and programs throughout the County.
- Managing all recycling processing contracts held by private vendors.
- Marketing recyclable commodities.
- Providing technical assistance to residents, businesses, and other entities of the County Government (e.g. the Board of Education).
- Developing new programs and modifying existing programs.
- Computing the County recycling rate and reporting to the State.
- Developing and implementing Outreach Programs.
- Support of programs implemented by the Disposal and Maintenance Program and the Community Services Program, as necessary.

The **Community Services Division**, under the guidance of the Community Services Manager is responsible for:

- Curbside collection of recyclables, yard waste and trash.
- Community clean-up.
- Environmental clean-ups.
- Curbside collection of appliances and large metal items.

- Central Recycling Center operations (formerly Millersville Convenience Center).
- Northern Recycling Center operations (formerly Glen Burnie Convenience Center).
- Southern Recycling Center operations (formerly Sudley Convenience Center).
- Customer service office, handling complaints and scheduling services.
- Support of programs implemented by Disposal and Maintenance Program and the Recycling Program, as necessary.

The **Financial Services Division**, under the guidance of the Management Assistant II is responsible for:

- Bureau Budget Assembly.
- Landfill Customer Billing.
- Revenue and Expense Tracking.
- Payroll.
- Purchasing Support.
- General Office Support.

The **Scalehouse Operations Division**, under the guidance of the Scalehouse Operations Supervisor is responsible for:

- Accurate tonnage tracking of all in-bound and out-bound materials at the MLFRRF.

WMS also assists and coordinates with other departments, divisions and organizations within the County, including, but not limited to the: Office of Planning and Zoning, Health Department, Office of Law, Bureau of Highways and Bureau of Engineering (Capital Projects).

1.6 County Support Structure In Relation To Solid Waste Management

To assist with the function and implementation of the Integrated System (refer to **Appendix A, Figure INT-4**), the County may acquire support resources through procurements as detailed in the County Purchasing Manual and the County Code, Article 8, Title 2. The support resources may be obtained from private sector vendors, contractors and consultants or via procurements established by other public jurisdictions.

1.7 Regional Support Structure In Relation To Solid Waste Management

To assist with the function and implementation of the Integrated System (refer to **Appendix A, Figure INT-4**), the County may acquire support resources from entities outside of the County procurement process. These entities may include regional authorities or independent agencies.

1.7.1 Northeast Maryland Waste Disposal Authority

The County maintains a partnership with the Northeast Maryland Waste Disposal Authority (NMWDA) as a participating Member. NMWDA is a regional authority that was established as a public corporation by Chapter 871, Acts of 1980 under the Maryland Natural Resources Code Ann. § 3-903 to assist the participating political subdivisions of Maryland (Members) and other public entities in providing adequate solid waste disposal facilities, including facilities for the generation of steam, electricity or fuels and recovery of materials that are derived from or are otherwise related to waste disposal. Member jurisdictions that participate in the NMWDA include: Anne Arundel, Baltimore, Carroll, Frederick, Harford, Howard and Montgomery Counties; and the City of Baltimore. Maryland Environmental Service, an instrumentality of the State of Maryland, is an ex-officio member. NMWDA acts as a coordinating agency and a financing vehicle for various solid waste management projects.

As a participating Member, the County has access to solid waste management, recycling and other professional support services provided by or coordinated through the NMWDA. Example services that the County currently utilizes, or has used in the past through NMWDA include:

- Waste Diversion Contracting (service since 1996, new contract to start in 2013).
- Social Marketing Contracting.
- Waste Characterization Studies.
- Design and Construction of a Landfill Gas-to-Electricity Project.
- Landfill Redesign.
- Development of a Materials Recycling Center.

The categories of services that participating jurisdictional Members currently use, or have used in the past through NMWDA include:

- Solid waste engineering support (compliance testing and reporting, landfill life expectancy evaluation and landfill remediation services).
- Waste to energy development, contract and operations management.
- Waste transportation and disposal services.
- Recyclables transportation and processing services.
- Sewage sludge composting.
- Electronics recycling contracts (E-cycling).
- Maryland Recycling Act commercial recycling reporting.
- Landfill Gas-to-Electricity construction and operations services.
- Renewable Energy Credit marketing and sales.
- Electricity and steam sales.

1.7.2 Maryland Environmental Service

To obtain support resources on a regional or state level within Maryland, the County maintains agreements with the Maryland Environmental Service (MES). MES is an independent state agency that was created in 1970 by Maryland's Governor and legislators to protect the State's air, land and water resources. MES is also an instrumentality of the State of Maryland as well as an ex-officio member of the NMWDA. MES does not have any regulatory authority nor does it receive direct appropriations from Maryland Counties. MES is a self-supporting, not-for-profit public corporation.

MES has the capability and resources to provide the following services: solid waste management (recycling, composting, and facility operations), environmental monitoring and compliance, wastewater facility operation and compliance, renewable energy system applications, hazardous materials cleanup, assistance with grants, procurements, financing and other support services.

The County has access to the solid waste management, recycling and other professional support services provided by or coordinated through MES. Example services that the County currently uses, or has used in the past through MES, include:

- Yard Waste Processing (Prince George's County Yard Waste Composting Facility in Upper Marlboro, Maryland).
- Wood Waste Grinding.
- Heavy Equipment Purchasing.
- Leachate Management and Treatment.
- On-Call operational support at the Millersville Landfill Scale House.
- Freon and Capacitor Recovery from White Goods.

1.8 Laws and Regulations

Solid waste management laws and regulations exist at the Federal, State, and Local levels. Overall regulatory direction and minimum nationwide standards for protecting human health and the environment are established at the Federal level. State regulations generally complement and expand upon Federal regulations. State regulations specify minimum design criteria, and the requirements for permitting, construction, operation, maintenance, and monitoring requirements for solid waste management facilities. Local laws (County Code) must be consistent with Federal and State laws and regulations, but may be more stringent. The more specific issues of land use, zoning, procurement, financing, and operation related to solid waste management facilities are left entirely to the County to enforce.

Descriptions of responsible agencies and applicable Federal, State, and Local laws and regulations are discussed below.

1.8.1 Federal

While it is not feasible to describe all Federal environmental statutes and regulations that affect solid waste management, **Appendix B, Tables 1-1 and 1-2** summarize those that are the most significant. Foremost among the laws listed is the Resource Conservation and Recovery Act (RCRA) of 1976, as last amended in 1991 and the Code of Federal Regulations (CFR).

RCRA provides Federal guidelines and standards for the environmentally sound reuse, handling, and disposal of solid waste, and requires that states incorporate these guidelines into their solid waste management programs. Under the RCRA provisions, Subtitle D provides Federal standards for municipal landfills. These standards include the location, design, operation, ground water monitoring, corrective action, closure, post-closure and financial assurance criteria for all municipal landfills.

CFR documents the rules promulgated by the Executive Departments of the Federal Government. The Code is divided into 50 titles which are further divided into chapters and subparts thereof. CFR Title 40 is entitled Protection of the Environment and includes Subchapter I - Solid Wastes (CFR Parts 240 through 280).

On the Federal level, solid waste is the responsibility of the United States Environmental Protection Agency (EPA). Direct implementation of solid waste programs is delegated to State and Local governments. A summary of Federal regulations important to solid waste management contained in CFR, Title 40, Subchapter I - Solid Wastes is provided in **Appendix B, Table 1-2**.

1.8.2 State

In the State of Maryland, MDE is the primary regulatory entity that maintains the delegated authority from EPA to administer and enforce solid waste management and other environmental regulations. Section 9-503 (b) of the Environment Article, annotated Code of Maryland requires counties to review, and if necessary, update at a three (3) year interval comprehensive existing solid waste management plans (COMAR 26.03.03). The Department implements Federal and State solid waste regulations for surface water and ground water protection, erosion and sediment control, preservation of wetlands, and recycling. MDE reviews solid waste facility and management plans, issues permits, and inspects facilities for regulatory compliance. A summary of the State laws affecting solid waste management is provided in **Appendix B, Table 1-3**.

The Annotated Code of Maryland includes all State laws passed by the Maryland General Assembly. Title 9 of the Environment Article contains many of the laws affecting the location, design, and operation of solid waste disposal facilities in Maryland. Regulations are developed by a responsible agency delegated by the State legislature to implement the laws that are passed. **Appendix B, Table 1-4**

provides an abbreviated summary of the Annotated Code Titles affecting solid waste management.

State regulations are compiled into a document entitled Code of Maryland Regulations (COMAR). Title 26 of COMAR contains the administrative rules and regulations for MDE and includes solid waste management regulations. A summary of the regulations which affect solid waste management is provided in **Appendix B, Table 1-5**. Several notable recent changes to COMAR solid waste management regulations have occurred. In 1997, the State revised regulations affecting the design of rubble landfills. Regulations under COMAR 26.04.07 were adopted that require all rubble landfills in Maryland that accepted waste material after July 2001 to include a liner and leachate collection system. In addition, in the same year, the State of Maryland banned the siting of waste incinerators within one mile of a school. In 1998, MDE adopted regulations and amendments to COMAR 26.11.19.20 containing details of requirements for landfill gas emissions for existing municipal solid waste landfills. Also in 1998, the State passed Bill 55-99, which revised natural wood waste facility regulations to place restrictions on the range of land use zoning in which such facilities may occur.

The MDE issues permits for the various types of waste facilities that could be sited in the County including municipal landfills, rubble landfills, land clearing debris landfills, processing facilities, transfer stations, natural wood waste recycling (and compost) facilities, incinerators, and industrial and hazardous waste landfills. As the County does not provide for the treatment, storage, and disposal of industrial or hazardous wastes, the private sector is responsible for obtaining industrial and/or hazardous waste facility permits.

1.8.3 County

In the State of Maryland, county jurisdictions that operate solid waste management facilities are required to comply with the regulatory requirements stipulated by the Federal (EPA) and State (MDE) regulating agencies. WMS is

the entity within the County responsible for implementing programs and measures that comply with the stipulated regulations. To ensure compliance, the Anne Arundel County Code includes requirements regarding solid waste management and recycling, which are presented in **Appendix B, Table 1-6**.

1.8.4 Municipal

The Annotated Code of Maryland provides for the incorporation of parts or all subsidiary plans developed by individual municipalities into the Plan by a County to the extent that such incorporation of those plans will promote the public health, safety, and welfare. Incorporation of a subsidiary plan can be accomplished by reference if it is determined that the subsidiary plans further promote aspects of the County's solid waste management plan, such as the environmental goals, recycling goals, waste management programs, or public education programs. The specific citations from the codes are included in **Appendix B, Table 1-7**.

While within the County's geographical limits, the City of Annapolis implements its own plans and strategies for solid waste management. The County recognizes and acknowledges the special needs and requirements of the City as outlined in the City's own solid waste management plans. Fort Meade also manages its solid waste management and recycling programs independently from the County. The programs and initiatives that are employed by the City of Annapolis and Fort Meade are discussed in Chapter 3. The Town of Highland Beach, an incorporated municipality within the borders of the County, currently receives County services. Residents of Highland Beach pay the County's solid waste fee each year and receive the comprehensive suite of services enjoyed by Anne Arundel County residents in return.

Regulatory Topic Summary
COMAR Title 26.03.03.03(C)

Chapter 2 – County Background

“Chapter 2 shall contain:

- 1) A table which shows the county’s present and projected population (if more than one set of projections is shown, the set upon which the plan is based shall be noted);*
- 2) A map which shows the location of municipalities and federal facilities within the County;*
- 3) A discussion of current county zoning requirements as they relate to solid waste management activities; and*
- 4) A discussion of the current status of the county comprehensive land-use plan, including the date that the plan was adopted and last update.”*

CHAPTER 2

2.0 County Background

This Chapter of the Plan provides background information on the County, including: present and projected population; a summary of current zoning regulations; and the land use inventory. This information is based on data presented in the *County 2009 GDP*, prepared by the County OPZ, also discussed in this Chapter. The population projections in this Chapter provide the basis for the waste and recyclables generation projections in Chapter 3.

2.1 General

The County is located in the Atlantic Coastal Plain on the western shore of the Chesapeake Bay, east of the Appalachian Plateau and the Fall Line. The County is bounded on the west by the Patuxent River and on the east by the Chesapeake Bay. The County's topography varies from flat to sharply rolling, with elevations from sea level along the Chesapeake Bay to about 300 feet above sea level in the Northwest, near the Baltimore-Washington Parkway. The County's total land area is 416 square miles.

From the Chesapeake Bay, a number of tidal estuaries penetrate as far as thirteen (13) miles inland, forming a series of peninsulas extending into the Bay. The numerous estuaries are the most prominent physiographic feature of the County. These estuaries are characterized by irregular shorelines and tidal marshes. There are 110,022 acres of total surface water area within the County.

Further discussion of the County's location in relation to the region is provided in the Introduction of this Plan.

2.2 Population

According to U.S. Census data, the County's population grew from 489,656 in year 2000 to 537,656 in 2010, which represents a growth rate of nearly 1 percent annually. The 2013 Anne Arundel County Master Plan for Water Supply and Sewerage Systems (Master Plan) presents the most recent County population projections through year 2035. A brief summary description of the 2013 Master Plan is included in Chapter 3. The sources of input for the population data projections presented in the Master Plan include U.S. Census data as well as Anne Arundel County Office of Planning and Zoning forecasts. Therefore, to ensure consistency with the most recent County population projections, these Master Plan projections are also used in this 2013 Solid Waste Management Plan Update. The population projections reflect a slowing population growth rate in the future, as the County matures, shifts from new development to redevelopment and revitalization, and as vacant land for development becomes more scarce.

Appendix B, Table 2-1 presents the most recent U.S. Census population data for the State of Maryland, for the Baltimore Region, and for the County, in year 2010. **Appendix B, Table 2-1** also contains population projections for these three (3) geographic regions through 2025. Annual population projections for the County, for the succeeding ten (10) year planning period of 2013 through 2023 are included in **Appendix B, Table 2-1**. These County population projections, taken from (or interpolated from) the 2013 Master Plan, form the basis of waste generation projections that are presented in Chapter 3. Over the succeeding ten (10) year planning period, projections from the Master Plan GDP indicate that the County's population should grow from approximately 545,800 to 566,800, which represents an average population growth rate of roughly 0.38 percent annually over the ten (10) year SWMP planning period, and a total growth rate over the planning period of approximately 21,000 residents.

Just as the population growth rate in the County is projected to grow at a slower rate in the future, the rate of increase in the number of households in the County over the next twenty-five (25) years is projected to slow down as well. The number of people per

household in the County was 2.46 in 2010. County household size is projected to further decline over time, to 2.40 by 2020 and to 2.34 by year 2035. More than 90% of the growth in the County has occurred in the existing and planned sewer areas; however, these areas account for only 40% of the land area in the County. Most new development has occurred in the western part of the County.

2.3 Municipalities

The County has two (2) incorporated municipalities; the City of Annapolis and the Town of Highland Beach (refer to **Appendix A, Figure 2-1**). The City of Annapolis manages its solid waste management and recycling programs independently from the County. The Town of Highland Beach currently receives County services for solid waste management and recycling.

2.4 Federal and State Facilities

There are seven (7) Federal facilities located in the County (refer to **Appendix A, Figure 2-2**):

- U.S. Army, Fort George G. Meade.
- U.S. Naval Academy, Annapolis.
- U.S. Army Ordnance Depot.
- U.S. Coast Guard Yard, Curtis Bay.
- U.S. Air Force Transmitter Station, Davidsonville.
- Smithsonian Institution for Environmental Studies.
- U.S. Fish and Wildlife Patuxent Research Refuge.

In addition, there are five (5) State facilities (refer to **Appendix A, Figure 2-2**):

- Baltimore/Washington International Thurgood Marshall Airport.
- Maryland House of Corrections and associated facilities.

- Crownsville State Hospital Complex.
- Sandy Point State Park.
- Severn Run Natural Environment Area.

2.5 Land Use

The variety of land uses reflects the County's diversity in the GDP Land Use Plan. There are urban concentrations of residential and commercial property in the northern portion of the County (North County) and Annapolis. Suburban character is prevalent in its eastern and western portions (West County). The southern portion (South County) and parts of the central portion, of the County are mostly rural and undeveloped. However, both the southern and central portions include several shoreline communities, where development can be characterized as small villages.

The 2009 GDP recognized the recommendations of sixteen (16) Small Area Plans that were developed between 2000 and 2004 throughout the County, which focused on obtaining citizens' (sub-County level) input on visions for developing (and preserving) each sub-area of the County. The results of this sub-area planning were combined in one comprehensive land use plan in 2004. The 2004 land use data, reported in the 2009 GDP, recommends that over half (52 percent) of the County's land use remain in rural and low density residential uses. Acreage dedicated to open space and environmental preservation account for an additional 17 percent. Low-medium to high-density residential land uses account for 13 percent of the County's land use, and commercial and industrial land uses account for about 6 percent of the land area in the County. Government and institutional areas account for another 6 percent; mixed use and town centers for about 1.5 percent; and the remaining 3.5 percent of land use is planned for transportation and utility uses.

The 2009 Land Use Plan, also presented in the 2009 GDP, modified the 2004 Land Use Plan to better-reflect existing land uses and densities that are not expected to change, and to better-represent sites and projects where a new type of development is being

encouraged. These adjustments to the 2004 land use recommendations only affect approximately 1,600 acres (less than one percent, 3 square miles) of the County's 416 square miles of land area.

2.6 Zoning

Zoning determines both the level of intensity and the type of land use in the County. Residential zoning remains the prominent zoning classification in the County, comprising 74.9% of the total land area. Commercial zoning comprises 2.8%, industrial zoning – 4.8%, Mixed Use - 0.6%, Town Center – 0.8%, Open Space and Water – 14% and City of Annapolis - 1.9%. The remaining 0.2% of the County is zoned for maritime uses.

The County Code, Article 18 governs the establishment of various solid waste facilities. Sanitary landfills are prohibited in the Code. The existing County owned and operated Landfill is the only active municipal solid waste landfill. It is legally non-conforming and presently exempt from the Code. Incinerators are not currently permitted in the County's zoning code. Waste-to-Energy facilities have not been identified as a specific zoning use. Solid waste transfer stations are permitted by special exception in W3 District. Filling of land with combustion ash is prohibited in the County. Rubble landfills, land clearing debris landfills and rubble processing facilities are permitted by special exception in W3 District. Recyclables recovery facilities and natural wood waste recycling facilities are permitted by special exception in W2 and W3 Districts.

This Plan shall not be used to create or enforce local land use and zoning requirements.

2.7 General Development Plan

The County's GDP is a policy document to guide decision making about the future growth, development, resource management and protection, and provision of services in the County. The intent of the GDP is to establish a reasoned and practical vision of the future. It strives to provide a balance between the needs of development and the

protection of the County's fragile resources. The GDP is an official policy document that has been adopted by the County Council.

On October 19, 2009, the County Council passed Bill No. 64-09, which adopted the 2009 GDP. The 2009 GDP revises and updates the 1997 GDP. As a County-wide plan, the GDP applies directly to all of the County, and indirectly to the City of Annapolis and major Federal and State installations. The GDP focuses on the upcoming twenty-five (25) years and provides guidance for development decisions. By establishing broad priorities, goals, policies, and implementation strategies, the GDP provides a framework for decisions regarding the future growth, development, and the provision of services in the County. The GDP goals and objectives, as well as, solid waste management policies, actions and recommendations are presented in Chapter 1.

Within the County, the GDP establishes the overall policy framework for growth and development. Its recommendations are implemented using a variety of tools and mechanisms, including additional planning documents. The following Plans, Regulation and Programs are developed through collaborative efforts from citizen communities, the Office of Planning and Zoning, other County agencies and other related stakeholders to create the County's comprehensive planning framework:

- Small Area Plans and Sector Plans.
- Functional Master Plans.
- Facilities Plans and Strategic Plans.
- Development Regulations.
- Capital Budget and Program.

Regulatory Topic Summary
COMAR Title 26.03.03.03(D)

Chapter 3 – Solid Waste Management Systems

“Chapter 3 shall contain:

- (1) A table that shows the existing and projected, for at least the succeeding ten-year period, annual generation (in tons, cubic yards, or gallons, as appropriate) of:

(a) Residential (household, domestic) wastes;
(b) Commercial wastes;
(c) Industrial (nonhazardous) solids, liquids, and sludges;
(d) Institutional (schools, hospitals, government buildings) waste;
(e) Land clearing and demolition debris (rubble);
(f) Controlled hazardous substances (CHS);
(g) Dead animals;
(h) Bulky or special wastes (automobiles, large appliances, etc.);
(i) Vehicle tires;
(j) Wastewater treatment plant sludges;
(k) Septage; and
(l) Other wastes (water treatment plant sludges, residues collected by a pollution control device, agricultural wastes, mining wastes, etc.) unless they are generated in insignificant quantities. However, the Department may require the county to substantiate any omission.*
- (2) A discussion of the bases for the data presented in the table required by §D(1) of this regulation.*
- (3) A discussion of the types and quantities of solid waste, if significant, which are entering or leaving the county for processing, recovery, or disposal.*
- (4) A description of existing solid waste collection systems, including service areas.*
- (5) Information concerning each existing public or private solid waste acceptance facility (incinerators, transfer stations, major composting sites, sanitary and rubble landfills, dumps, major resource recovery facilities, CHS facilities, injection wells, and industrial waste liquid holding impoundments) including:*

- (a) Its location on a map;*
- (b) Its Maryland grid coordinates;*
- (c) Its size in acres;*
- (d) The types and quantities of solid waste accepted;*
- (e) Ownership;*
- (f) Permit status; and*
- (g) Anticipated years of service life remaining.”*

CHAPTER 3

3.0 Solid Waste Management System

The County's solid waste management system integrates a variety of County-provided services, which include: curbside collection, drop-off facilities for residents at three (3) Recycling Centers, and drop-off facilities for residents and commercial customers at a County-owned landfill. The County utilizes services from the private sector to manage waste at transfer stations and other facilities, and garners private sector support to offer customers single stream recycling.

Within this Chapter, baseline data on the County's solid waste management and recycling system (e.g., programs and facilities) is presented. Waste generation rates for the succeeding ten (10) year planning period are presented based on recent per capita waste generation and population projections. The descriptions of the solid waste management and recycling system components, supporting programs and available disposal and processing facilities provide the basis for the evaluation and assessment of future needs contained in subsequent Chapters.

3.1 Waste Generation

In the County, solid waste is generated by residents, businesses, industries, and institutions. Section 26.03.03.03D of COMAR requires that the Plan identify and quantify existing and projected solid waste generated within the County for the following waste categories and types:

Waste Categories

- Residential Waste.
- Commercial Waste.
- Industrial Waste.

- Institutional Waste.
- Construction and Demolition Debris.
- Land Clearing Debris.
- Yard Waste (categorized as a recyclable commodity, under Section 3.7).
- Controlled Hazardous Substances (CHS).
- Special Medical Waste.

Waste Types

- Dead Animals.
- Bulky or Special Wastes (including salvaged automobiles).
- Vehicle Tires.
- Wastewater Treatment Plant Biosolids and Sludges.
- Septage.
- Other Waste (that is generated in significant quantities).

The County's projected generation of these wastes through 2023 is presented in **Appendix B, Table 3-1**, which is also discussed below. **Appendix A, Figure 3-1** presents the 2010 tonnages and percentages as classified under specific portions of the waste stream:

- Maryland Recycling Act (MRA) waste disposed in the County.
- MRA waste recycled in the County.
- Non-MRA waste disposed in the County.
- Non-MRA waste recycled in the County.

The 2010 tonnage data was provided by MDE to the County to include in **Appendix B, Table 3-1**.

"MRA materials" include the following types of wastes: compostables (grass, leaves, wood waste and food waste), glass (mixed glass plus fluorescent bulbs), metals (aluminum cans and steel/tin cans, plus white goods), paper (corrugated, newspaper, white paper, mixed paper, etc.), plastic bottles, and certain other materials (like laser toner cartridges, lead acid batteries, oil filters, waste-to-energy facility ash, and wood pallets). "Non-MRA materials" include automobile components (antifreeze, motor oil, and scrap automobiles), construction/building materials (asphalt, concrete, and wood), and some other items (such as cleaning fluids, land clearing debris, scrap metal, and sewage sludge). The fraction of MRA materials that are recycled (one reason for tabulating the waste categories as presented in **Appendix A, Figure 3-1**) is computed by dividing MRA waste recycled by the total tons of MRA waste disposed + MRA waste recycled. Some non-MRA wastes are also recycled, as illustrated in **Appendix A, Figure 3-1**.

As **Appendix A, Figure 3-1** shows, nearly half (48%) of the waste materials managed in the County are recycled (27% MRA recycled materials plus 21% non-MRA recycled materials). Approximately one-third (33%) of the waste materials generated in the County in 2010 were managed by the County. The remaining two-thirds (67%) of solid waste generated within the County was managed privately (either recycled or disposed), without County involvement.

Descriptions of waste categories listed in **Appendix B, Table 3-1**, are presented in the following Sections. The methodology used to estimate projected quantities generated by these sectors through year 2023 is as follows:

1. 2010 tonnage data for **Appendix B, Table 3-1** was provided by MDE, who tabulated the data from solid waste tonnages reported to MDE by permitted solid waste facilities, and from MRA reports completed by the County.
2. U.S. Census population figures for the County in 2010 were applied to 2010 tonnages from MDE, and per capita annual tonnage generation rates for each waste fraction were computed for the County.

These per capita rates for each waste component were then applied to future population projections from **Appendix B, Table 2-1**, to calculate projected tonnages of waste materials expected to be generated in the County between 2013 and 2023. The results of these analyses are presented in **Appendix B, Table 3-1**.

3.1.1 Residential

Residential waste includes wastes generated by households in the County. In the County, residential waste is divided into the following three (3) categories:

- **Curbside Contract** – waste collected under County contracts.
- **Private Residential Collection** – residential waste, from multi-family dwellings and from other homes not served under the County contracts (includes the City of Annapolis), collected by private commercial haulers.
- **Community Services** – waste disposed or recyclables collected under the various County community services:
 - Homeowner drop-off at Recycling Centers and the Landfill.
 - Community cleanups.
 - Bulky metal collections.
 - Recycling in County parks and facilities.
 - Litter and park waste collections by County government crews.

Appendix B, Table 3-2 presents WMS data from 2010 through 2012 on municipal wastes (primarily residential) handled in the County-managed integrated waste system. Materials include municipal wastes that are disposed (either at the County Landfill or at other sites via contracts with the County), recyclables/materials that are recovered (including drop-off and curbside collected materials), and yard waste and brush that is either processed by the County or managed through contracts with the County. **Appendix B, Table 3-2** also includes a 3-year average of this data. As shown on **Appendix B, Table 3-**

2, discards plus recyclables collected under curbside contracts constituted the majority (59%) of all residential waste generated and managed by the County in 2010. Residential waste brought to the County's Recycling Centers via homeowner drop-off and disposed at the Landfill represented approximately 11% of all County-managed residential waste generated in 2010. An illustration of the average annual tons and percentages of waste materials and recyclables managed by the County WMS in 2010-2012 is presented in **Appendix A, Figure 3-2**.

As **Appendix B, Table 3-2** shows, 43% of the County-managed residential waste stream was recycled in 2010; this represents a steady increase over the past decade, from 30% in 2002 to the present 43% recycling rate. Based on a recent assessment of the quantity of recyclables still remaining in residential discards, the County has determined that its residential waste stream contains additional recyclables that, if captured, could increase the County's residential recycling rate to as much as 58% (if all recyclables are captured). **Appendix B, Table 3-3** computes the 2010 per capita waste and recyclables generated in the County and managed by County WMS programs. This table shows that the overall per capita waste generation rate for County-managed waste customers (before recycling) is 0.6304 tons per capita per year. Table 3-3 assumes no change in the per capita waste generation rates (tonnage increases in the future are due to a growing population in the County) when projecting WMS-managed waste and recyclables over the ten (10) year planning period. Additionally, Table 3-3 shows that approximately 23% of this WMS-managed waste and recyclables stream in 2010 was diverted through recycling, another 20% was captured and recycled as yard waste, and the remainder (57%) was landfilled. The County diverted approximately 64% of these net discards to other landfills, thereby preserving remaining County Landfill disposal capacity. The 0.6304 tons per capita per year amount compares favorably with the USEPA national municipal waste (MSW) generation estimate of 0.809 tons per capita per year. The EPA figure also includes commercial and institutional waste, which are, in large part, managed privately in the County.

The amount of County-managed residential waste is projected to increase through the planning horizon of 2013-2023 due to continued growth in County population. **Appendix B, Table 3-3** makes the assumption that the current distribution of waste and recyclables destinations that are presented in the 2010 data in **Appendix A, Figure 3-2** do not vary over the planning period. However, with a system that promotes increased recycling already in place, tonnages requiring disposal could decrease. Other factors, such as changes in waste diversion, could impact the amount of waste that needs to be disposed in the County Landfill. These potential variations are explored further in later chapters of this Plan.

Appendix A, Figure 3-2 illustrates that for a number of years the County has been successful in promoting its goal to preserve County Landfill capacity. As of 2010, the County has diverted approximately 80% of its managed MSW from the Landfill through a combination of recycling activities and waste diversion to alternate transfer station and out-of-area disposal sites. The County has goals to further increase the recycling rate from 42% to over 50% by year 2015, with a 2.5% increase annually for each year from FY13-FY15. If recycling increases in the County-managed waste stream, total residential waste requiring disposal at the Landfill and other disposal sites will further decrease.

3.1.2 Commercial and Industrial

The County considers waste generated from businesses and offices to be commercial waste. Non-hazardous waste generated from the production of goods and products is considered industrial waste. These wastes are permitted at the County Landfill.

Appendix B, Table 3-1, presents 2010 tonnage and per capita data, and projects 2013 through 2023 quantities of these wastes that are expected to be handled in the County over the ten (10) year planning period. In addition, County

commercial wastes are projected to grow from approximately 71,700 tons in 2013 to 74,400 tons in 2023.

Since the opening of the Annapolis Junction Transfer Station in February 1997 and the subsequent opening of the Curtis Creek Transfer Station in 1999, the majority of commercial waste generated in the County has been managed through transfer stations (described in further detail in this Chapter) or directly hauled for disposal at non-County Facilities.

Industrial waste generated in the County is managed by private entities.

3.1.3 Institutional

MDE classifies institutional waste as waste generated by institutions such as schools, hospitals, and government buildings. This waste is recorded as commercial waste when disposed at the County Landfill.

3.1.4 Construction and Demolition Debris

With respect to this Plan, the County considers Rubble to be a component of Construction and Demolition (C&D) Debris. The term Rubble is sometimes used interchangeably with or considered a component of C&D Debris. C&D Debris including Rubble material is an acceptable waste received at the County's Landfill and each of its three (3) Recycling Centers. However, the County makes every attempt to segregate, reuse and recycle Rubble by collecting and aggregating materials such as brick, block and stone separately from C&D Debris. These procedures are in line with the County's goal of diverting waste from disposal at the Landfill, to preserve airspace and extend landfill life. Rubble accepted at the Landfill is recycled and used as temporary all-weather driving surfaces within the Landfill itself or is used both on-site and off-site as clean fill material.

C&D Debris includes material generally considered to be non-hazardous, which results from a construction or demolition project or from the renovation of a structure. Such material may be created by large private construction companies, small home improvement firms or County residents.

There has not been an operating, permitted landfill solely for the disposal of C&D Debris as defined in COMAR 26.04.07.13 in Anne Arundel County since 2001. Acceptance of C&D Debris for disposal at the County Landfill is limited. C&D Debris generated in the County is primarily disposed at private rubble landfills located outside the County. Regardless, it is apparent that existing in-County and out-of-County processing and disposal facilities within the Region have been adequate to manage C&D Debris generated within the County.

C&D wastes represent a significant quantity of materials currently generated and handled in the County. **Appendix B, Table 3-1**, presents 2010 tonnage and per capita data, and projects 2013 through 2023 quantities of these wastes that are expected to be handled in the County over the ten (10) year planning period. In addition, C&D waste generated within the County is projected to grow from approximately 180,000 tons in 2013 to approximately 187,000 tons in 2023.

3.1.5 Land Clearing Debris

Land clearing debris (LCD) consists of waste generated through land-clearing operations, which include: earthen material (clays, sands, gravels and silts), topsoil, tree stumps, root mats, brush and limbs, logs, vegetation and rock. LCD does not include source-separated yard waste which has been collected curbside.

Just as the County recycles Rubble from incoming loads of C&D Debris, similar activities occur at the Landfill for processing incoming mixed loads of LCD. These materials include: vegetative waste (tree stumps, root mats, brush, limbs and logs) that can be recycled as processed wood chips (mulch), clean fill (topsoil)

and rock that can be recycled as Rubble. The County makes every attempt to segregate, reuse and recycle these materials. The County provides mulch to residents, and uses it as feedstock for composting operations, for driving surfaces and for erosion control. The rock is used as aggregate for temporary all-weather driving surfaces within the Landfill itself. Segregated LCD is also used both on-site and off-site as clean fill material.

Currently, there is not an operating or permitted landfill solely for the acceptance of LCD (i.e. land clearing debris landfill or rubble landfill) as defined in COMAR 26.04.07.11 and 26.04.07.13 in the County. Acceptance of LCD for disposal at the Landfill is limited. LCD generated in the County is primarily disposed of at other private land clearing debris and rubble landfills located outside the County. Regardless, existing in-County and out-of-County processing and disposal facilities within the Region have been adequate to manage LCD generated within the County.

Appendix B, Table 3-1, presents 2010 tonnage and per capita data, and projects 2013 through 2023 quantities of these wastes that are expected to be handled in Anne Arundel County over the ten-year planning period. In addition, LCD waste generated within the County is projected to grow slightly from approximately 490 tons to 510 tons over the ten-year planning period.

3.1.6 Controlled Hazardous Substances

Controlled hazardous substances (CHS) are solid wastes that are designated by MDE as “controlled” and are subject to regulation as hazardous wastes under COMAR 26.13.03 through 26.13.10. CHS may exhibit characteristics of listed hazardous waste or contain a listed hazardous waste, such as hazardous waste produced by small quantity generators and hazardous waste which is used, re-used, recycled, or reclaimed. Examples of CHS may include certain types of spent materials, sludges, by-products, or commercial chemical products.

Under COMAR 26.13, MDE requires that CHS be specially managed during handling and disposal. A few generators of CHS operate within the County and have Treatment, Storage, and Disposal permits for their CHS waste. Other generators must have their CHS waste hauled out of state for processing or disposal. CHS is neither accepted at the Landfill nor at the three (3) County Recycling Centers.

Factors such as CHS reuse, recycling, and source reduction will likely have a major impact on the generation rate of CHS within the County.

3.1.7 Special Medical Waste

Special Medical Waste (SMW) is defined under COMAR 26.13.11 through 26.13.13 and is a subcategory of CHS. SMW is defined as solid waste that is composed of:

- Anatomical material.
- Blood.
- Blood-soiled articles.
- Contaminated material.
- Microbiological laboratory waste.
- Sharps.

Exclusions include household waste; waste generated in the handling of animals unless the generator knows that the animal has a disease capable of being transmitted to humans; ash or by-product from the incineration of special medical waste; or waste not generated during the ordinary course of business. SMW is neither accepted at the County Landfill nor the three (3) County Recycling Centers.

3.1.8 Dead Animals

Dead animals are rendered, buried, or incinerated at veterinary hospitals in the County. Dead animal carcasses are not accepted at the Landfill or the three (3) County Recycling Centers, nor are they accepted through residential curbside collection.

Dead animal carcass removal from roadways in the County is the responsibility of the County's Animal Control Division. However, Animal Control does not accept household pet or hunting carcasses. For deceased household pets, residents are instructed to contact a local veterinary clinic for services.

For hunting carcasses, citizens can locate a licensed deer salvager through the Department of Natural Resources' Nuisance Animal Hotline, at 1-877-463-6497, or online at:

http://www.dnr.state.md.us/wildlife/Plants_Wildlife/deer_salvage_search.asp.

3.1.9 Bulky or Special Waste

Bulky Items

Bulky wastes include furniture and white goods such as refrigerators, washers, dryers, and other large appliances. The County's residential curbside collection contracts provide for the collection of bulky furniture. Additionally, the County's community cleanup program accepts bulky furniture items and provides for scheduled collection service for white goods. County residents may also drop off bulky items at the Landfill or at any of the County's (3) Recycling Centers. Liquid refrigerants are captured and recycled prior to the recovery of metal. With the exception of salvaged automobiles, bulky items are included in the residential waste stream and in projections over the planning period. Metal bulky items and white goods are sold to recyclers as scrap metal.

Salvaged Automobiles

The County Police Department's Traffic Safety Section and Abandoned Automobile Unit processes vehicles classified as abandoned. Private certified towing companies are generally used to remove such vehicles, and are issued salvage certificates by the Traffic Safety Section. These certificates give the individual salvage company the right to scrap the vehicle for which the certificate was issued. This may include dismantling or crushing the vehicle. Neither the Landfill nor the three (3) County Recycling Centers allow the disposal of vehicles or their parts. Automobile parts are not included in the County's residential curbside collection services.

3.1.10 Vehicle Tires

The Scrap Tire Recycling Act (1991) prohibits the disposal of discarded vehicle tires as waste within landfills in the state of Maryland. Currently, the County accepts scrap tires at its three (3) Recycling Centers and the County Landfill. The County holds MDE Secondary Scrap Tire Collection Facility Permits for all sites, allowing for the collection of scrap tires at these locations.

Since MDE prohibits the disposal of scrap tires within the Landfill, per the Landfill Refuse Disposal Permit (2012-WMF-2040), the County also holds a Scrap Tire Hauler License, which allows for transportation of scrap tires to licensed scrap tire recycling or processing facilities.

The County has a contract with a private company to transport and properly dispose of scrap tires it collects at a cost of \$90.00 per ton.

Tip fees for residential and commercial tires brought to the County Landfill are defined in the County Code (see below). Scrap tires from commercial sources are charged 125% of the County's cost to dispose of the tires. Residents are charged \$7.00 per tire for each tire in excess of four. Since August 1992,

disposal fees for commercially hauled tires ranged from \$60 per ton to \$147.50 per ton. It is expected that generators of scrap tires will seek out the most cost effective disposal alternatives.

The following posted Landfill charges reflect current fees for vehicle tire acceptance (§ 13-4-107 of the County Code. County owned or operated landfills and solid waste disposal facilities):

Solid waste delivered by a commercial business	\$75 per ton
Solid waste delivered in a dump truck, flatbed truck, stake body truck, box truck, rental truck/trailer, or double axle trailer	\$75 per ton
For large, unusually difficult to handle items or bulky compact items, such as house trailers, boats in excess of 20 feet in length, stumps, and concrete	\$200 per ton
On-the-road vehicle tires from a vehicle other than a vehicle owned by the person delivering the tires	125% of the cost to the County to dispose of the tires, plus \$ 7.00 for each tire mixed with other solid waste
On-the-road vehicle tires from a vehicle owned by the person delivering the tires	No charge for four or fewer tires, but for each tire in excess of four tires \$ 7.00
Residential solid waste not covered by a listing above	No charge

Appendix B, Table 3-1, presents 2010 tonnage and per capita data, and projects 2013 through 2023 quantities of these wastes that are expected to be handled in Anne Arundel County over the ten-year planning period. In addition, the amount of vehicle tires in the County is projected to grow slightly, from approximately 1,420 tons to 1,480 tons, over the ten-year planning period.

3.1.11 Wastewater Treatment Plant Biosolids and Sludges

Title 9, Subtitle 5, Annotated Code of Maryland and COMAR 26.03.01 require the County to develop water supply and sewerage systems in accordance with a County Master Plan, to meet current and future demands of the County's population and infrastructure. It further specifies that the extension and expansion of such water supply and sewerage systems shall be consistent with the County's GDP and adopted Land Use Plan.

The most recent version of the County Master Plan for Water Supply and Sewerage Systems (Master Plan), 2013-2017, was adopted by County Council Bill No. 11-13 in May 2013. The Master Plan contains a certificate of conformance from the County Office of Planning and Zoning, which states: *"This document is consistent with the General Development Plan of Anne Arundel County and was prepared in accordance with COMAR 26.03.01."* The Master Plan also contains an engineer's statement of certification from the County Bureau of Engineering, which states: *"The projects proposed in the Anne Arundel County Master Plan for Water Supply and Sewerage Systems, 2013-2017, are adequate to serve the system requirements projected for the period covered by the plan. Data furnished by the Office of Planning and Zoning, Department of Public Works, and the Health Department formed the basis for the Master Plan."*

As documented in the Master Plan, the County obtains its wastewater service from a combination of on-site systems; a number of privately owned, operated, and maintained wastewater treatment plants; and publicly-owned, operated, and maintained water reclamation facilities (WRFs). In addition, the County has documented management plans for biosolids (sewage sludge) in Appendix C and septage in Appendix E of the Master Plan.

Biosolids (Sewage Sludge)

Since April 1984, the County's Bureau of Utility Operations has entered into contracts with private companies to manage the processing and utilization of wastewater biosolids. Biosolids are not accepted for disposal at the County Landfill.

The contracts include the installation and operation of on-site dewatering and biosolids stabilization facilities. The County has closely monitored these contracts to ensure their integrity. The most recent land application contract was awarded to Synagro Technologies Inc. for a ten-year period ending in 2015. Synagro Technologies Inc. is currently contracted to provide the sludge and biosolids management services at the six (6) operating wastewater treatment plants operated in the County: Annapolis, Broadneck, Broadwater, Cox Creek, Maryland City, and Patuxent Water Reclamation Facilities.

Appendix B, Table 3-1, presents 2010 tonnage and per capita data, and projects 2013 through 2023 quantities of these wastes that are expected to be handled in Anne Arundel County over the ten-year planning period. According to MDE records that were used as the basis of projections in **Appendix B, Table 3-1**, County wastewater treatment plant sludges (excludes land application) are expected to average approximately five (5) tons per year over the ten-year planning period.

3.1.12 Other Wastewater Treatment Facilities

Rural Community and Commercial Facilities

Biosolids from rural community and municipal facilities have been discussed in the previous section; tons of biosolids generated from these sources are included in the **Appendix B, Table 3-1** biosolids generation projections.

Industrial Facilities

According to MDE's records reported in the 2003 Plan Update, there were only six listed industrial facilities reporting wastewater flows within the County.

3.1.13 Septage

Since 1992, MDE regulations require that septage be treated as raw sewage at a permitted wastewater treatment plant or water reclamation facility. The County Bureau of Utility Operations is responsible for the treatment of domestic sewage and the contents of septic tanks that are received at its Water Reclamation Facilities under the County's Septage Management Program. Septage waste includes: wastewater collected from domestic, commercial and industrial septic tanks, drywells, holding tanks, chemical toilets, and similar wastes. Septage wastes are not accepted for disposal at the County Landfill.

The County's Septage Management Program governs the disposal and treatment of domestic septage that is discharged into the County's system, by private entities at one of the County's three septage-receiving points: Annapolis WRF, Broadwater WRF and Cox Creek WRF. The treatment process generates biosolids, which are managed as described in Section 3.1.11 of this Plan Update, and further described in Appendix C of the Master Plan. Septage is managed in accordance with COMAR 26.04.02 and 26.04.06 and Appendix E of the Master Plan.

The County Master Plan per Appendix E reports that approximately 5.9 million gallons of this material was handled in the County system for the time period of July 1, 2010 to June 30, 2011.

3.1.14 Other Wastes

Water Treatment Plant Residual Solids

Water treatment plant residual solids include solids generated through the treatment of the County's potable water supply. All water treatment plant residues are discharged directly to the sewer system and are processed by the WRFs as part of the wastewater flows. Therefore, sludge or other residues from water treatment facilities should be included in the biosolids waste projections provided in **Appendix B, Table 3-1**.

The Bureau of Utility Operations is responsible for the treatment of domestic sewage received at its Water Reclamation Facilities. The treatment process generates biosolids, which are managed as described in Section 3.1.11 of this Plan Update.

As stated earlier, biosolids (sewage sludge, and which may contain water treatment residuals) are not accepted for disposal at the County Landfill.

Pollution Control Device Residues

Stationary sources, depending upon their type and size, require air and stormwater pollution control construction permits and registration with the MDE. Some installations, depending upon their size, type, or process may require control devices to capture pollutants so they are not emitted into the atmosphere. To assure compliance with applicable regulations, all installations are subject to inspection.

The residues captured by air and stormwater pollution control equipment, depending upon the type of captured material, are disposed by several methods, including: landfilling or utilization as structural fill, use as a soil amendment or aggregate material, or recycling to the basic process.

The County Landfill may be available for disposal of air pollution control residual waste in accordance with its Refuse Disposal Permit.

Litter

Litter is the solid waste classification that encompasses any discarded materials spread on public or private property, and not contained in acceptable waste collection or storage containers. This waste is usually individually small in size and weight and is primarily composed of paper, plastic, metal, and glass products.

Litter is managed within the County system and included in the landfill category identified as Government Municipal. This category includes litter collection from the County's Bureau of Highways, the Department of Recreation and Parks and the Maryland State Highway Administration.

Recreational Waste

Waste generated at thirty (30) County Department of Recreation and Parks facilities is collected and disposed by a commercial hauling company. Department of Recreation and Parks maintenance forces manage compostable debris either on-site where generated, or at the district headquarters. When possible, natural wood waste is chipped.

Used Oil

The Maryland Used Oil Recycling Act of 1978 established measures to provide for used oil collection centers, and prohibits the dumping of used oil in sewers, on land, in refuse, or in the water. Used oils include: salvaged petroleum products, motor oil from vehicles, cutting oils, vegetable oils, and combustible fluids.

These have a limited application for reprocessing and reuse as heating fuel because of the contaminants they may contain, notably lead and sulfur compounds.

In coordination with MDE, MES is responsible for the implementation of the Used Oil Program and the construction, operation, and the routine maintenance of used oil collection facilities; providing public education and outreach programs related to the disposal of used motor oil; and maintaining an information center to educate citizens regarding the proper disposal of used motor oil. Based on the 2011 MDE Used Oil Annual Report, MES operates nine (9) locations for used oil acceptance and management within the County.

In addition, there are used oil collection tanks at each of the three (3) County Recycling Centers operated by the County for the convenience of its customers. There are numerous other private companies and facilities such as car dealerships, and automobile and equipment maintenance shops that manage used oil in the County. Depending on market conditions in the petroleum industry, these private establishments may sell the used oil to companies that buy bulk quantities and reprocess it into motor oil. Regardless, existing in-County acceptance and management facilities within the Region are adequate to manage used oil generated within the County.

Agricultural Residue

Agricultural residues consist of crop residues and livestock manures. The proper handling and disposal of these residues is the responsibility of the farmer or landowner. These residues may be returned to the soil in an environmentally sound manner as a source of plant nutrients. If handled as recommended, this method represents best management practices for these materials. There are no large-scale livestock feeding operations within the County. Agricultural operators are encouraged to prepare and follow a nutrient management plan that utilizes the beneficial properties of these natural crop and animal residues, and to follow

guidance and requirement of various regulatory agencies. Assistance is available from the Anne Arundel Soil Conservation District and from Agricultural Extension Agents.

Soils and Other Materials Contaminated from Spills or Releases

MDE regulates the disposition of soil and other materials contaminated from spills and releases on a case-by-case basis, and with written documented approval by MDE, these materials may be accepted for disposal at the County Landfill. The preferred practice for disposal of these special wastes will continue to be at privately-owned and operated treatment or disposal facilities.

3.2 Solid Waste Collection

3.2.1 Residential Curbside Service

The County collects residential solid waste in two ways: at curbside and by homeowner drop-off. For curbside collections, the County is divided geographically into fifteen (15) collection service areas (refer to **Appendix A, Figure 3-3**). For each service area, the County contracts with a private waste hauler to collect residential solid waste. **Appendix A, Figure 3-4** presents the major roads and other transportation mechanisms used for waste collection. These services and aspects are also applicable to the collection of single stream recyclables and yard waste, which is further discussed in Section 3.7.

In June 2012, the County converted to once-per-week trash collection, which was recommended by the County's Residential Recycling Advisory Committee (RAC) in its report (refer to **Appendix E**) issued in December 2010. Prior to this time, County trash was collected twice-per-week with recyclables and yard waste collected once a week. By instituting this change in service, a significant cost savings has been realized, curbside recycling has increased, trash collection has decreased, and collection routes are operating more efficiently.

Bulky furniture and similar items are also collected as part of the contracted residential curbside trash collection service. The contracted collection service also provides recycling collection for small businesses under § 13-4-106 and certain County office buildings and parks. White goods and metal item collections are scheduled separately through the County.

3.2.2 Drop-off Collection Facilities

In addition to curbside collection services, the County provides its residents full-service collection facilities. For the acceptance of residential waste, the County operates three (3) Recycling Centers and a County Landfill to provide multiple disposal service options to its residents. In certain communities, the County holds community cleanup events. These events involve the placement of dumpsters for the collection of waste. The events are scheduled by the County throughout the year based on demonstrated need.

These services and facilities are also applicable to the collection of single stream recyclables and yard waste, which are further discussed in Section 3.7.

3.2.3 Household Hazardous Waste

The County began collecting household hazardous waste (HHW) in 1988 to help residents safely dispose of hazardous materials commonly found in the home. Collection events were held bi-annually from 1988 to 1994. Events were held eight (8) times per year from 1995 to 2011. In 2012, the schedule was reduced to six (6) events per year as part of a cost saving measure based on trends in customer use. The program accepts residential hazardous material only. Hazardous waste from commercial customers or transported in commercial vehicles is prohibited.

Common household hazardous waste items collected for residents during the events include: oil based paints and stains, gardening products (pesticides,

herbicides, and fertilizers), cleaning solvents (household and automotive), contaminated oil and antifreeze, fuels (gasoline and kerosene), pool chemicals and items containing mercury or asbestos.

In addition to HHW collection events, the County's three (3) Recycling Centers accept lead-acid batteries, propane tanks (one-pound and twenty-pound containers), uncontaminated oil, and uncontaminated antifreeze from residents during operating hours. The County Landfill also accepts lead-acid batteries and propane tanks from residential and commercial customers.

3.3 Waste Disposal

A primary goal of the County's Integrated System and Solid Waste Management Strategy is to prolong its landfill life by reducing the amount of waste disposed in the County Landfill. Programs and initiatives such as increasing residential curbside recycling and the diversion of waste to private facilities for disposal have had an extremely positive effect on extending the remaining landfill life. **Appendix B, Table 3-3** summarizes the quantity of waste and recyclables managed by the County, and includes projections of waste disposal between 2013-2023, assuming no change in current recycling and waste diversion practices.

At this time, the County is landfilling waste in the final subcells of Cell 8, and is implementing the necessary planning, design, permitting and construction to transition into Cell 9, the final waste disposal area at the County Landfill, by mid-2015. Waste diversion activities are expected to continue through the use of the Annapolis Junction Transfer Station, with diverted waste being delivered to out-of-county disposal sites.

3.4 Existing and Approved Waste Acceptance Facilities

There are many different types of waste acceptance facilities, both public and private, in the County. The specific facilities located within the County that may accept solid waste are presented on **Appendix A, Figure 3-5**. Additional site specific and operational information on these facilities is provided in **Appendix B, Table 3-4**. The following

Sections list the major facilities for County management of municipal solid waste generated within the County. Information regarding the location, size, permit status, operating status and other best available information is provided for each facility.

3.4.1 Municipal Solid Waste Landfills

The Millersville Municipal Landfill (County Landfill) is the only municipal solid waste landfill in the County currently accepting municipal solid waste.

Millersville Municipal Landfill

<i>Owner:</i>	<i>Anne Arundel County</i>
<i>MDE Permit:</i>	<i>2012-WMF-0240</i>
<i>Expiration:</i>	<i>11/13/2017</i>
<i>Maryland Grid Coordinates:</i>	<i>895,000: 460,000</i>
<i>Operating Status:</i>	<i>Open</i>

The County Landfill is located off MD 32 at 389 Burns Crossing Road, Severn, MD 21144; about 1.2 miles east of Odenton, Maryland. The landfill property encompasses 567 total acres, 248 of which are planned for the disposal of solid wastes. The County Landfill opened in July 1975 and since that time seven (7) of nine (9) permitted disposal areas have been filled. County forces are currently filling the eighth disposal area (Cell 8) and are constructing the ninth and final disposal area (Cell 9).

The landfill campus includes: an active landfill disposal facility, an equipment maintenance building; a storage warehouse; a leachate collection system and pretreatment plant; a landfill gas collection system with a flare station, utility flare and gas-to-electricity facility; a yard waste processing and composting area; and a scale house. The site also is home to the Central Recycling Center which is discussed later in this Chapter.

Recyclables are accepted, segregated, and transported to appropriate recycling facilities. Yard waste is accepted and processed for composting (leaves and grasses) or ground into mulch (brush and tree limbs) and beneficially used as material for driving surfaces or for erosion control. During peak periods, yard waste may be transported to one of three (3) private facilities in the region for processing.

Landfill Facility Background

Landfill operations initiated with filling Cell 1 East in 1975, and Cell 2 in 1976. Filling of Cell 2 was completed in 1978, when Cell 3 became active. Cell 4 was filled from 1978 through 1980, when activities were moved to Cells 5, 6 and 7 from 1980 through 1992. Cells 5, 6 and 7 were initially separated by an access road, but were then combined into a single cell by filling the valleys created by the access road. The combined single cell is designated as Cell 567. Cell 8 was commissioned and became operational in 1992.

Closed landfill cells have been capped with a geomembrane system to prevent leachate generation and the release of fugitive landfill gas emissions to the atmosphere.

The County excavated Cell 3 in 1994, and deposited its waste in Cell 8. The capping of Cells 5, 6 and 7 were completed in 1996. In 1997, the County excavated the western portion of Cell 1 and placed the waste in Cell 8 as part of the Cell 1 closure plan. Capping of Cells 1 East, 2, and 4 were completed in 1998.

An active landfill gas collection system is maintained in all disposal areas. The system includes vertical gas extraction wells, horizontal collectors, and a network of piping which conveys gas to a central point on the Landfill site. Prior to 2012, an enclosed flare combusted collected landfill gas. A Landfill Gas-to-Electricity

Facility and a Utility Flare were constructed in 2012 to better manage gas as a resource.

The Landfill also employs the following environmental controls to protect public health and the environment:

- State-of-the-art liner system with clay and synthetic materials for active and future cells.
- Leachate collection, management, and pretreatment system with a connection to the County's sanitary sewer system for disposal.
- Perimeter groundwater monitoring wells.
- Perimeter gas monitoring probes.
- Stormwater Management Facilities including: stormwater ponds, sediment traps, riprap swales and riprap down chutes.

Existing Waste Filling Operations

Currently, Cell 8 is the active waste disposal area at the Landfill. In 2010, 69,517 tons of the total 108,442 tons of solid waste accepted at the Landfill, was disposed of in Cell 8. The initial phases of development for Cell 9 have begun, and include: construction of stormwater management Pond 9-2 with associated infrastructure and access roads in the immediate vicinity of the pond. The first disposal area in Cell 9 (Subcell 9.1) is planned to open for waste acceptance in mid-2015. Cell 8 closure activities will coincide with the opening of Cell 9.

Landfill Gas Collection and Control

As waste filling operations continue, expansion of the landfill gas (LFG) collection and control system is required to maintain compliance with both New Source Performance Standards (NSPS) and Title V air permitting regulations and requirements.

Landfill Gas-to-Electricity

In a continuing effort to beneficially use LFG at the Landfill, the County initiated a project in 2009 to convert LFG to electricity. The County secured a \$2 million Energy Block Grant from the U.S. Department of Energy to partially fund the construction of the project at the Landfill, with the remaining funding being secured through \$5 million in revenue bonds. In the fall of 2010, the County requested assistance from the NMWDA to develop and issue a Request for Proposals for the design, construction, operation and maintenance of a LFGE at the Landfill. On the County's behalf, NMWDA entered into separate agreements with Landfill Energy Systems, Inc. and the County. The agreement between NMWDA and the County was approved by the County Council via Bill 57-10 on August 8, 2012.

Construction of the LFGE Facility began in late 2011 and operations began in June 2012. The LFGE Facility contains two (2) Caterpillar 3520 engine generator sets that generate 3.2 Megawatts of renewable "green" energy. The electricity is transferred to a power grid and sold on the energy market. The active Cell 8 and future Cell 9 waste disposal area of the Landfill are expected to produce LFG in increasing amounts over the next few decades, so electricity production will be sustained long into the future.

Landfill Gas Monitoring

As required by federal and state regulations, the LFG collection and control system at the Landfill is monitored daily to ensure that the system is operating effectively. In addition, both closed and active disposal areas of the Landfill are monitored routinely for surface emissions, which provide another method to check the effectiveness of the system. To verify that LFG is not migrating from the Landfill onto neighboring properties, gas monitoring probes are installed along the perimeter property boundary of the site. These probes are monitored on a quarterly basis to detect any migration of the LFG.

3.4.2 Recycling Centers

There are three (3) County-owned and operated Recycling Centers in the County. Each Recycling Center is discussed below:

Central Recycling Center

<i>Owner:</i>	<i>Anne Arundel County</i>
<i>MDE Permit:</i>	<i>Permit Not Required</i>
<i>Maryland Grid Coordinates:</i>	<i>895,000: 460,000</i>
<i>Operating Status:</i>	<i>Open</i>

The Central Recycling Center is located on the same property as the County Landfill at 389 Burns Crossing Road, Severn, MD 21144 and provides a location within the central portion of the County for residents to bring their recyclables, yard waste, and trash.

Yard waste is accepted and processed at the Landfill for composting (leaves and grasses) or ground into mulch (brush, limbs, etc.) and used as material for driving surfaces or for erosion control. Alternatively, yard waste may also be hauled to one of three (3) regional facilities for processing.

This facility operates a paper recovery building to segregate, bale and ship cardboard to market. Other recyclables are accepted, separated as required, and hauled as appropriate to private recycling facilities. Brick, block, stone, concrete, and asphalt are recycled for use as a road base material.

Waste materials accepted at the Recycling Center for disposal are transferred to the County Landfill or an alternate disposal facility.

Northern Recycling Center

Owner:	Anne Arundel County
MDE Permit:	Permit Not Required
Maryland Grid Coordinates:	910,000: 490,000
Operating Status:	Open

The Northern Recycling Center is located at the entrance of the closed Glen Burnie Landfill at 100 Dover Road, Glen Burnie, MD 21060 and provides a location for North County residents to bring their recyclables, yard waste and trash. All of the material that comes to the Recycling Center is transported by truck for recycling, processing or disposal at other facilities. Most materials accepted for recycling are handled through private sector contracts.

Brush is ground on site by a private contractor and hauled out as mulch, and grass and leaves are either transported to the compost operation at the County Landfill or ground with brush. Some materials such as firewood and rubble are available for residents to take for re-use. Trash is transported to the County Landfill, the Annapolis Junction Transfer Station or other disposal facilities from time to time.

Southern Recycling Center

Owner:	Anne Arundel County
MDE Permit:	Permit Not Required
Maryland Grid Coordinates:	920,000: 357,000
Operating Status:	Open

The Southern Recycling Center is located at the entrance of the closed Sudley Landfill at 5400 Nutwell Sudley Road, Deale, MD 20751 and provides a location for South County residents to bring their recyclables, yard waste, and trash. All of the material that comes to the Recycling Center is transported by truck for

recycling, processing or disposal at other facilities. Most materials accepted for recycling are handled through private sector contracts.

Brush is ground on site by a private contractor and hauled out as mulch, and grass and leaves are either transported to the compost operation at the County Landfill or ground with brush. Brick, concrete, and asphalt are transported to a C&D processor. Some materials such as firewood and rubble are available for residents to take for re-use.

Trash is transported to the County Landfill, the Annapolis Junction Transfer Station or other disposal facilities from time to time.

3.4.3 Waste Transfer Stations

There are two (2) privately owned Waste Transfer Stations within the County borders, which are described below.

Annapolis Junction Processing Facility and Transfer Station

<i>Owner:</i>	<i>Garnet of Maryland (dba Waste Management)</i>
<i>MDE Permit:</i>	<i>2011-WPT-0158</i>
<i>Expiration:</i>	<i>3/24/2016</i>
<i>Maryland Grid Coordinates:</i>	<i>860,000: 470,000</i>
<i>Operating Status:</i>	<i>Open</i>

The Annapolis Junction Processing Facility and Transfer Station (Annapolis Junction) opened in March, 1997 and is privately owned and operated by Garnet of Maryland, Inc. (dba Waste Management). The Facility is located immediately east of Brock Bridge Road, just North of Maryland Route 32 (at 8077 Brock Bridge Road, Jessup, MD 20794). The permitted area for waste management and recycling activities is 17-acres, with approximately 1-acre that is enclosed

(building structure). The site is located in a heavy industrial area along CSX main rail line.

The Facility is permitted to accept and transfer 3,000 tons per day on a 6-day workweek average of non-hazardous residential, commercial, municipal, industrial, agricultural, silvicultural, construction, demolition and other waste material as allowed in the Facility's Refuse Disposal Permit. In 2010, the Facility accepted 505,644 tons of solid waste from various sources within the region. No medical or hazardous waste is accepted. Recovery and management of recyclables including, but not limited to, metals and cardboard also occurs at Annapolis Junction. In accordance with the goals and objectives of Anne Arundel County, Annapolis Junction may also utilize other technologies, processes and equipment to reduce, recycle and reuse solid waste. Rail transport of waste from Annapolis Junction to Virginia commenced in Fall 1997 and continues to present. The service life of this facility extends well past the ten (10) year planning period.

Curtis Creek Processing Facility and Transfer Station

<i>Owner:</i>	<i>Curtis Creek Recovery Systems, Inc. (Co/ Ameriwaste)</i>
<i>MDE Permit:</i>	<i>2008-WPT-0539</i>
<i>Expiration:</i>	<i>12/22/2013</i>
<i>Maryland Grid Coordinates:</i>	<i>920,000: 500,000</i>
<i>Operating Status:</i>	<i>Open</i>

The Curtis Creek Processing Facility and Transfer Station (Curtis Creek) opened on May 19, 1999, and is owned and operated by Curtis Creek Recovery Systems, Inc. (Co/ Ameriwaste, LLC). The Curtis Creek Facility is located at 23 Stahl Point Road, Baltimore, MD 21226.

The Curtis Creek Facility has a permitted capacity of 3,000 tons per day. The activities of the Facility are located within an existing 120,000 S.F. building on a

13-acre parcel. The Facility accepts non-hazardous residential, commercial and industrial solid waste. The solid waste generated from agriculture, silviculture, construction and demolition sources is also accepted. No medical or hazardous waste is accepted. In 2010, the facility accepted 146,107 tons of solid waste from various sources within the region.

Spot recycling and segregation of recyclable materials also occurs at the Curtis Creek Facility. Such materials include: ferrous and non-ferrous metals, glass, plastics, construction and demolition materials, and all grades of paper. Outbound solid waste is transported by truck or rail. Recyclables are consolidated on-site and then transferred by rail or truck to a processing facility. The service life of this facility extends well past the ten (10) year planning period.

3.4.4 Other Waste Acceptance Facilities

Dead Animal Incinerators

The only known privately owned and operated dead animal incinerator within the County is the West Arundel Crematory located at 1411 Annapolis Road, Odenton, Maryland 20707. The capacity is estimated at 100 pounds per hour.

Waste Water Treatment Plant (WWTP) Incinerators

No active or permitted waste water treatment plant incinerators are located in the County.

Special Medical Waste Incinerators

No active or permitted special medical waste incinerators are located in the County.

Hazardous Waste Landfills

No active or permitted hazardous waste landfills are located in the County.

3.5 Debris Management Activities and Support Facilities

The Robert T. Stafford Disaster Relief and Emergency Assistance Act, Public Law 93-288, as amended, 42 U.S.C. § 5121, et seq., authorizes the Federal Emergency Management Agency (FEMA) under its Public Assistance Program to award Federal funding to State and local governments for response and recovery efforts for natural disaster and emergency-related events. Such efforts would include debris removal, implementation of emergency protective measures, and permanent restoration of eligible facilities and infrastructure related to tropical storms, hurricanes, tornadoes, severe lightning, wind storms, ice storms, hail and floods, and other debris-generating disasters.

To receive funding under the FEMA Public Assistance Program, State and local governments must prepare and obtain FEMA approval of a debris management plan. The County formally established a Disaster Debris Management Plan (DDMP) on July 9, 2009. The County DDMP was prepared in accordance with FEMA requirements and under the provisions of Article 12, Public Safety, Title 1, Fire Services, Subtitle 104, Emergency Management, of the County Code. The DDMP is part of and a supplement to the County Emergency Operations Plan (EOP). The DDMP provides the framework for the County's agencies and other entities to manage debris generated during a natural disaster or public emergency within the jurisdictional limits of the County. The DDMP also meets the FEMA documentation and preparedness requirements to apply for Federal financial reimbursement for costs related to debris management during disasters and emergency-related events.

Within the County, DPW is responsible for mitigation, response and recovery efforts from disaster and emergency-related events that affects public works assets in the

County. Park sites will serve as debris management, reduction and storage sites, which are presented in **Appendix A, Figure 3-6**.

The County can manage many disaster and emergency events with internal resources; however, there are potential debris-generating events that may overwhelm the County's assets and capabilities. It is in this capacity that the County has established debris management support contracts for debris removal as well as debris removal monitoring. Such services will assist the County with response and recovery efforts and preparing records to document expended costs related to debris management activities for potential Federal reimbursement. In addition, through local government coordination efforts, under the Debris Assistance for Localized Events (DALE) Program, the County may provide homeowner residents within a community the means to dispose of debris related to a small localized weather related event.

3.6 Recycling

In the early 1990s, the County developed its recycling program to accommodate business and residential curbside and homeowner drop-off customers. Numerous investments in the program have been made over the past two decades. The County's current goal is to recycle at least 50% of all curbside waste generated in the County. The services, programs and facilities described in this Section and within this Plan will assist the County in achieving this goal.

3.6.1 Residential Curbside Service

The County provides curbside collection to nearly 153,000 residential customers. There are communities within the County that rely on private collection services as well.

The County provides its residential customers with 32-gallon containers and 65-gallon carts to collect and store single stream recyclables. In an effort to further increase recycling, the County converted to once-a-week trash collection in June 2012. Single stream recyclables include mixed commodities with the primary

material categories of paper, plastic, metal and glass. Yard waste includes grass, leaves, brush, branches, and limbs meeting certain size and weight requirements.

The majority of residential single stream recyclables are managed through curbside collection contracts with private service providers in the fifteen (15) service collection areas of the County (refer to **Appendix A, Figure 3-3**). **Appendix A, Figure 3-4** presents the major roads and other transportation mechanisms used for waste and recyclables collection and transport. The contracted collection service also provides recycling collection for small businesses and certain County offices and Parks. White goods and metal items, which are recyclable commodities, are scheduled for curbside collection by the County.

Single stream recyclables are transported to the Waste Management Recycle America (WMRA) Facility in Elkridge, MD for sorting and shipment to market. Yard waste is managed and processed at several facilities. Section 3.8 addresses these facilities.

3.6.2 Drop-off Collection Facilities

County residents may bring single stream recyclables and other commodities to the Northern, Central, or Southern Recycling Centers. The Recycling Centers accept single stream recyclables (paper, plastic, metal and glass) as well as yard waste, automobile batteries, electronics, pallets, propane tanks, rubble, scrap metal/appliances, tires, oil, antifreeze, cooking oil, oyster and clam shells, and vinyl siding and fencing.

The current recycling program and the efforts of DPW at the three (3) Recycling Centers have been recognized and further supported by the Anne Arundel County Council through Resolution No. 75-12. To enhance public education and to maximize recycling, the Resolution provides County Council support for "...a

program and campaign to be implemented by the County Department of Public Works to ensure that recyclable materials for which recycling options exist are not discarded as waste to the maximum extent practical at the County's three recycling centers." The Resolution details several public education, employee training and signage recommendations to improve the use of and customer service at the Recycling Centers.

The County supports community cleanup events where the need is demonstrated. The County provides containers for the collection of recyclables and other wastes.

3.6.3 State Recycling Initiatives and County Programs

In addition to the County-sponsored recycling services and programs, the County must respond to the challenges and requirements of recycling initiatives mandated by the State. New initiatives by the State can require enhancements to the County's existing recycling system or the development of new programs.

During the previous ten (10) year planning period, the County implemented programs to provide recycling services for electronics, fluorescent and compact fluorescent lights, and in public schools and public colleges. The County's recycling efforts for these programs are provided below.

Electronics Recycling

Since 2002, the County has provided electronics recycling services to its residents and customers. This program includes services for the recycling of computers, monitors, televisions and many other electronic devices. Electronic materials are typically separated into various components for recycling.

In 2010, the County collected more than 2,040,000 pounds of electronics for reuse or recycling.

This program was first required under House Bill 575, enacted in 2005 by the Maryland General Assembly, and amended in 2007 and 2012, when a statewide computer recycling program was established. A complete description of the County's electronics recycling program is provided in **Appendix E**.

Fluorescent and Compact Fluorescent Light Recycling

Starting in 1988, the County has offered its customers recycling services for fluorescent lighting under its HHW drop-off program. The program has expanded and now includes compact fluorescent lighting materials. During calendar year 2010, Anne Arundel County collected 1,691 pounds of recovered fluorescent lighting. HHW collection events are conducted by a licensed hazardous waste collection contractor.

A recycling strategy for these materials was required under House Bill 685 - the Collection and Recycling of Fluorescent and Compact Fluorescent Lights that Contain Mercury, enacted in 2010 by the Maryland General Assembly. A complete description of the County's fluorescent and compact fluorescent lights recycling program is provided in **Appendix E**.

Public School Recycling

In July 2009, the Maryland General Assembly passed House Bill 1290, Environmental-Recycling – Public School Plans requiring recycling in all publicly-funded schools with the exception of State Universities. This bill amended 9-1703 of the Environment Article, Annotated Code of Maryland. This legislation required the County's recycling plan to address and implement a strategy for collecting, processing, marketing, and disposing of recyclable materials from its public schools by October 1, 2010. The County prepared the necessary revisions to its recycling plan to incorporate recycling in public schools and received MDE approval in August 2011.

Anne Arundel County Public Schools (AACPS) operate independently from the County's recycling and solid waste management program. However, the public schools have been a stalwart recycling partner with the County Government since 1989, and have continually increased their commitment to recycling over the years. Beginning with the 2008 school year, the school system adopted a single stream recycling program allowing the schools to place the same items accepted by the County's residential recycling program into one container.

The public school recycling program collects a variety of recyclables that includes, but is not limited to: mixed paper (defined as all paper products), aluminum beverage cans, narrow neck glass bottles (any color), glass jars (any color), plastic bottles (drink containers), steel and tin food cans (empty aerosol cans are also acceptable), and flattened and non-flattened corrugated cardboard boxes. The Facilities Management Division within AACPS has programs in place to recycle waste oil, tires, scrap metal and electronics. Additionally, surplus furniture and equipment are made available to the public for re-use through online auctions.

The public school recycling program is administered by AACPS; however, a Contractor is responsible for providing all containers, labor and equipment as required, to fulfill the recycling services, throughout the County's school system.

All County schools participate in the single stream recycling program. Recycling containers are located in each classroom, office and common area. Each school has single stream receptacles where AACPS custodial staff stage recyclables for collection.

A complete description of the County's public school recycling program is provided in **Appendix E**.

Public College Recycling

Along with the development and implementation of a public school recycling program, the County also implemented a strategy for collecting, processing, marketing, and disposing of recyclable materials from its public colleges under the Maryland General Assembly-passed House Bill 1290. The County prepared the necessary revisions to its recycling plan to incorporate recycling in public colleges, and received MDE approval in August 2011.

Anne Arundel Community College (AACC) is a public, comprehensive, community-engaged institution of higher education. AACC operates independently from the County's recycling and solid waste management program. In cooperation with the County, AACC has promoted the sustainability of its recycling and solid waste system that includes maximum efficiency, economic vitality, and reduced environmental and human health impacts.

AACC strives to reduce per capita waste generation and increase the recovery of recyclable materials. Beginning with the 2009 college year, the college adopted a single stream recycling program allowing the AACC to place the same items accepted by the County's residential recycling program into one container that is located in each classroom or building area. Single stream recycling has allowed AACC to increase recyclable volume while decreasing the number of trash containers and disposal services needed at each college location. AACC staff, students and maintenance personnel are responsible for the collection of recyclables within the campus facilities and placement of said material within the recycling dumpster(s) or carts. Collection service is provided under a multi-year contract held by a licensed solid waste hauler. Recyclable materials are collected and transported to a local Materials Recycling Facility (MRF), of the contracted hauler's choosing, for processing and marketing. Additionally, the college participates in the Abitibi Paper Retriever fundraising program, and recycles scrap metal, pallets, cardboard, used motor oil and cooking oil. A

complete description of the County's public college recycling program is provided in **Appendix E**.

3.6.4 Recycling in Recreational Areas of the County

Several Anne Arundel County operated community parks, athletic fields (including turf fields at public high schools), golf courses, community centers and the Recreation & Parks Department headquarters are participating in the County Office Recycling Program. All participating recreational facilities have a recycling coordinator who serves as their location's recycling program leader and Department liaison. Paper, plastic, metal and glass recyclables are collected from these facilities at curbside, by County-provided dumpster collection service, or are delivered directly to the County Landfill or Recycling Centers by park staff. Through a partnership with the school system, Recreation and Parks uses school recycling dumpsters to manage recyclables generated at AACPS high school athletic fields.

3.6.5 Rates and Goals

Recycling in the County has increased by 12% in the last five (6) fiscal years (FY08-FY13), which is presented on **Appendix A, Figure 3-7**. Prior to the end of FY08, the County's Recycling Division launched a major marketing campaign that was designed to clearly and effectively communicate the importance of recycling. The positive results of this campaign are evidenced in the County's year-end recycling rate.

Currently, the County's recycling initiatives and programs are structured around meeting and exceeding the "50/50 Challenge." The 50/50 Challenge is a comprehensive objective that challenges everyone in the County to recycle at least 50% of everything they discard at curbside.

To facilitate an increase in the effectiveness of and public participation in its recycling program, the County has developed the following strategies:

- Discover and implement modifications to existing services that are designed to encourage residents to recycle more. Eliminate the 2nd weekly trash collection day, distribute large recycling containers, and renegotiate contracts as necessary to enable handling of more recyclable material.
- Increase public relations and educational programs to promote recycling by initiating comprehensive public outreach programs. Embark on local education efforts through libraries, schools and other County facilities to encourage increased recycling. Utilize multiple marketing mediums to maximize the program's exposure.
- Monitor recycling performance by maintaining detailed data on the amount of solid waste recycled. Publicize to residents the improvements made with the amount of materials being recycled. Modify recycling outreach programs to encourage increased recycling in areas that are performing at a lower rate.

The planning, public outreach and monitoring efforts described above provide a framework for the County to achieve its recycling and waste diversion goals. These efforts also assist the County with the implementation of its Solid Waste Management Strategy (refer to **Appendix A, Figure INT-3**).

The strategy aims to preserve landfill airspace by reducing the amount of waste disposed, thus prolonging the lifespan of the County's only landfill facility. The County's programs and projects such as residential curbside and homeowner drop-off recycling, the use of variable size containers and carts to collect residential recyclables and the diversion of trash to private facilities for disposal have already had a significant impact on preserving the remaining life of the County Landfill.

3.7 Existing Recycling, Processing and Resource Recovery Facilities

The County promotes viable and sustainable recycling processing facilities that comply with all applicable laws and regulations. There are many different types of facilities that manage and accept recyclables, both public and private, in the County. Most of the public sector facilities transport the recyclables to private facilities following receipt for processing and delivery to market. The major management and acceptance facilities for yard waste and recyclables utilized by the County are presented on **Appendix A, Figure 3-8** and included on **Appendix B, Table 3-5**. The following sections list each facility and provide information relating to location, size, permit status, operating status and/or the best available information.

3.7.1 Single Stream Recycling

Waste Management Recycle America

Single stream recyclables, collected by the County, are transported to the privately owned and operated Waste Management Recycle America (WMRA) facility for the purpose of segregation, processing and future marketing. The WMRA Facility is located at 7175 Kit Kat Road, Elkridge, MD 21075.

The WMRA Facility separates a variety of recyclable materials, including: aluminum and other metal cans; plastic bottles and containers; all colors of glass; and mixed paper and cardboard. Recyclable materials are managed in a 50,000 square foot processing area. Facility throughput averages approximately 1,500 tons per day. MDE does not require an operations permit for recycling or material recovery facilities.

The County currently maintains a contract with Waste Management Inc. and the WMRA Facility is listed as an approved facility to accept County-generated recyclables. Over 60,000 tons per year of County-generated, single stream recyclables are managed at the WMRA Facility.

3.7.2 Yard Waste Processing

Yard waste recycling is an important waste management option for the County. It allows diversion of a brush, logs, branches, grass, and leaves from the waste stream. Under the Maryland Recycling Act of 1988 and associated Maryland Laws, MDE banned the disposal of separately collected yard waste at solid waste acceptance facilities.

Yard waste collected by the County is processed at three (3) primary facilities (the County Landfill, the Prince George's County Yard Waste Composting Facility and at Top Soil, Etc.) and one (1) secondary facility (Recycled Green). As additional facilities become available, the County will consider utilizing them.

These facilities are discussed in more detail in the remainder of this section. It is important to note that none of these facilities is permitted to receive or process food waste.

County Yard Waste Processing Facility

The County Landfill includes a dedicated area for the acceptance and processing of yard waste.

Brush, branches, and limbs collected at the landfill are processed through a horizontal grinder. The resultant mulch is recycled, used as material for driving surfaces, or for erosion control.

Leaves and grasses are composted on-site and marketed under the name Anne's Best Compost. **Appendix B, Table 3-2** shows that approximately 2,800 tons of yard waste, on average (2011), is composted at the Landfill.

Prince George's County Yard Waste Composting Facility

The Prince George's County Yard Waste Composting Facility is located at 6550 S.E. Crain Highway, Upper Marlboro, MD, 20772 and is owned by Prince George's County Government and operated by MES. The Facility has an approximate 52-acre asphalt area for the management and processing of grass, leaves and branches, and a throughput capacity of approximately 55,000 tons per year.

The County maintains an Intergovernmental Agreement with Prince George's County for its use of the Western Branch Facility. This facility handles a portion of the County's yard waste stream, which varies year-to-year.

Top Soil Etc.

The Top Soil Etc. Facility is located at 7012 Fort Smallwood Road, Baltimore, MD, 21226. This privately owned and operated facility is approximately 10 acres in size, and can process approximately 20,000 tons per year of material. Along with yard waste, Top Soil Etc. also processes dirt, stone and rubble-type materials to create compost, mulch, top soil, and specialized soil blends, as well as a variety of stone products.

The County maintains a contract with Top Soil Etc. for yard waste management and processing services. Private contractors in the County also collect and transport yard waste to this Facility. This facility handles a portion of the County's yard waste stream, which varies year-to-year.

Recycled Green

Recycled Green Industries, LLC is a privately owned and operated organics facility located in Carroll County at 7800 Kabik Court, Woodbine, MD, 21797.

The County maintains contracts with Recycled Green for yard waste hauling and processing services. All yard waste received at the Northern and Southern Recycling Centers is ground and transported for recycling by Recycled Green. During peak times, Recycled Green may haul and process some yard waste collected at the County Landfill.

This facility handles a portion of the County's yard waste stream, which varies year-to-year. Recycled Green maintains four (4) organics management facilities in the state of Maryland, including the permitted natural wood waste recycling facility in Carroll County. Collectively, the facilities have a yard waste management area of approximately 140 acres with a processing capacity of more than 600,000 cubic yards of organic waste per year. Along with yard waste, Recycled Green also processes earthen material to create compost, mulch, top soil and a variety of specialized soil blends.

3.7.3 Scrap Metal Recycling

Terrapin Recycling

Terrapin Recycling is a privately owned, full-service metal recycling company located at 7600 Rolling Mill Road, Baltimore, MD 21224.

The County maintains a contract with Terrapin Recycling for the sale of scrap metal collected by the County, averaging over 4,500 tons annually.

3.8 Subsidiary Solid Waste Management Plans

As stated Section 1.8.4 of this Plan, the Annotated Code of Maryland, §9-504 and COMAR 26.03.03 provides for the incorporation of subsidiary plans developed by individual municipalities into the Plan by a County.

3.8.1 City of Annapolis

While within the County's geographical boundaries, the City of Annapolis is a separate municipal body, having the rights and powers of municipal self-government. The City of Annapolis is the capital of Maryland, and covers an area of approximately 7.6 square miles. With respect to solid waste management and recycling, the City of Annapolis does not have a formally adopted solid waste management plan. However, the City Charter requires the City's Department of Public Works to operate a refuse collection and disposal system, and enforcement powers are specified in the City Code, Chapter 10.

In August 2012, an overview of the City's solid waste management plan (City Plan Overview) was prepared and submitted by the City of Annapolis for incorporation into the County Plan, which is included under **Appendix F**. The City Plan Overview provides for the collection of recycling, yard waste, refuse, and bulky items/white goods from residential customers. In addition, a private vendor under contract with the City is responsible for the collection of excess bulky waste, park and recreation trash cans, street trash cans and special collection of materials. The collection and disposal of hazardous waste is excluded in the contract.

The City of Annapolis does not operate an active waste disposal site. Disposal of refuse is via a multi-year contract with the County and NMWDA. Refuse is delivered to the Annapolis Junction Transfer Station located in Jessup, MD. Yard waste processing and disposal is handled by a contractual agreement with the County, and is delivered to the County's Landfill. Recycling material is delivered to Waste Management Recycle America, which is also part of a contractual agreement with the County.

Commercial establishments located within the City of Annapolis contract privately for refuse collection, and are required to use a refuse hauler licensed by the City. The City offers a voluntary commercial recycling program which allows

commercial businesses to pay an established rate for weekly collection of recyclables.

Overall, the City's solid waste management practices promote public health, safety and welfare and maintain similar environmental and recycling goals, waste management programs, and public education programs as the County. In accordance with the Annotated Code of Maryland and COMAR, the City's solid waste management plan is herein incorporated by reference into the County Plan.

3.8.2 Town of Highland Beach

Highland Beach is a small incorporated town located in the eastern part of the County along the Chesapeake Bay. It has a population of approximately 100 residents. Except for its corporate status, Highland Beach is considered part of the County and currently receives all available County services, including curbside recycling, yard waste and trash collection.

3.8.3 Fort George G. Meade

Fort Meade is located within the northwestern part of the County near the metropolitan areas of Washington, D.C. and Baltimore between Maryland State Routes 175 and 198 at 4409 Llewellyn Avenue, Fort Meade, Maryland 20755. Fort Meade is home to approximately 11,000 military personnel along with about 29,000 civilian employees. Nearly 6,000 family members also reside on post. In total, Fort Meade maintains approximately 56,000 employees (originating from on-post and off-post locations).

Fort Meade provides its own solid waste management and recycling services; therefore, data on Fort Meade solid waste generation is not included in this Plan. A brief summary of Fort Meade's programs to manage solid waste and recyclable materials is provided below:

- Waste Collection, Hauling and Disposal – Fort Meade maintains a fleet of government-owned vehicles to collect and haul waste generated on the Post site. Fort Meade maintains a contract with a private hauler to transport waste to the Annapolis Junction Processing Facility and Transfer Station for disposal.
- Recyclable Commodity Collection, Hauling and Sales – Fort Meade maintains a fleet of vehicles to collect and haul recyclables to an on-site recycling center. Most recyclables are sold using a spot market structure to secure the best price. An award is made to the appropriate company who is then responsible for pick-up and hauling of the commodities from Fort Meade. Recyclable commodities include paper, glass, plastics, metals, compostables, lead-acid batteries and household batteries.

3.8.4 United States Naval Academy

Naval Support Activity Annapolis (NSAA)/U.S. Naval Academy (USNA) is included in a Navy region-wide contract for solid waste disposal services and recycling services. The solid waste disposal services contract is currently held by FNL Construction and Solid Waste, who routinely empties dumpsters located throughout the installation. The recycling contract is currently held by Melwood Services, a disabled contractor, who collects a variety of recyclable materials (cardboard, newspaper, office paper, books, plastic, glass, aluminum cans, and scrap metal/wood) from various small containers located throughout buildings as well as large recycling dumpsters. In addition, Melwood operates a mulch operation on site for landscape maintenance waste, with the mulch for sale to the public. Construction & demolition debris associated with construction projects on site are required to be recycled to the greatest extent practicable by the construction contractor.

Regulatory Topic Summary

COMAR Title 26.03.03.03(E)

Chapter 4 – Assessment of Solid Waste Management Systems

“Chapter 4 shall contain:

- 1) Chapter four shall contain an assessment (using a narrative description, maps, charts, and graphs as appropriate) of the county's needs to alter, extend, modify, or add to existing solid waste disposal systems during the next 10 years.*
- 2) The assessment above shall use, when appropriate, the background information contained in chapters one, two, and three.*
- 3) The assessment shall consider the constraints imposed upon the establishment of solid waste acceptance facilities by:*
 - (a) Topography;*
 - (b) Soil types and their characteristics;*
 - (c) Geologic conditions;*
 - (d) Location;*
 - (e) Use and depth of aquifers;*
 - (f) Location of wetlands;*
 - (g) Location of surface water sources and their flood plains and watersheds;*
 - (h) Existing water quality conditions;*
 - (i) Incompatible land use;*
 - (j) Planned long-term growth patterns;*
 - (k) Federal, State and local laws and areas of critical State concern (as designated by the Department of State Planning).*
- 4) The assessment shall evaluate:*
 - (a) The use of source separation and source reduction programs to reduce the quantities of solid wastes which shall be collected for disposal;*
 - (b) Resource recovery options to reduce land disposal capacity needs;*
 - (c) Consumer education programs, and cooperation with appropriate suppliers for the purchase of recycled products to encourage, and help create a market for resource recovery and source separation programs;*
 - (d) The need for disposal capacity for asbestos;*
 - (e) Programs and procedures needed to respond to the unplanned emergency spillage or leaking of hazardous wastes within the county; and*
 - (f) Whether existing local master plans and zoning regulations provide for the appropriate siting, operation, or both, of solid waste management systems or facilities.”*

CHAPTER 4

4.0 Purpose of Assessment

As part of the Plan, the County is required to perform an assessment of the existing solid waste management system. The assessment focuses on the adequacy of the solid waste management and recycling programs and facilities that are currently in place to meet the goals and objectives of this Plan for the succeeding ten (10) year period.

Enhancements and alternatives to the existing solid waste management system are assessed for compatibility with existing systems as well as potential future use to meet the identified goals and objectives. The assessment considers potential constraints imposed on solid waste acceptance facilities and reviews whether existing master plans and zoning regulations provide for appropriate siting and operation of solid waste management systems and facilities. As previously mentioned in Section 2.6, this Plan shall not be used to create or enforce local land use and zoning requirements.

4.1 Structure of the Existing System

The current Integrated System (refer to **Appendix A, Figure INT-3**) and Solid Waste Management Strategy (refer to **Appendix A, Figure INT-4**) provide the structure to implement, maintain and improve the County's solid waste management and recycling systems.

Through the Integrated System, the County identifies the hierarchical flow of solid waste management activities on the basis of most-to-least preferred to guide the implementation of its systems. These activities flow from source reduction and reuse, to recycling and composting, to energy recovery and then to treatment and disposal.

Through the Solid Waste Management Strategy, the County identifies specific measures to achieve its one overarching goal: to prolong the life of the only remaining

and permitted MSW disposal areas (Cell 8 and Cell 9 of the County Landfill). The current Solid Waste Management Strategy reflects goals to: recycle, divert waste to out-of-county facilities, and dispose of County-managed waste at the County Landfill.

The components of the Integrated System and the Solid Waste Management Strategy can be implemented individually and in combination to meet the recycling and waste disposal goals and objectives. Thus, the County's current structure and existing system meets the recycling and disposal needs of the County now and well into the future. However, the County continues to employ and explore enhancements to its existing systems and alternatives to the current practice of landfilling in an effort to create a more diversified, sustainable and affordable system of handling the County's waste stream and to preserve the remaining disposal capacity of the Landfill.

4.2 Support Resources

To assist with the function and implementation of the Integrated System and the Solid Waste Management Strategy, the County uses a variety of mechanisms to acquire contractual support. Contractual support is obtained through County procurement processes, procurements established by other public jurisdictions, and regional cooperation efforts from multi-jurisdictional and independent state agencies.

4.3 Recyclables and Waste Collection

The collection of single stream recyclables, yard waste and trash for County residents is provided via curbside pickup, community cleanup events, scheduled bulky item collections, household hazardous waste collection events and homeowner drop-off at the Landfill and the three (3) Recycling Centers (Northern, Central, and Southern). The City of Annapolis and Fort Meade each provide trash and recycling collection services for households within their respective jurisdictions. These households also have access to the County's Recycling Centers.

4.3.1 Residential Curbside Collection

Through contracts with private haulers, the County provides curbside collection of residential waste to approximately 153,000 households in the County. In an effort to control future collection costs, a major modification to the previous collection system occurred in June 2012, when the County converted to once-per-week collection for residential curbside trash.

The County currently provides its curbside customers with the following basic services:

- Once per week – collection of a wide variety of recyclables (single stream), including certain bulky items.
- Once per week – collection of yard waste (grass, leaves, brush, branches).
- Once per week – collection of trash, including bulky items.
- As scheduled or requested – Bulky metal collection. As scheduled or requested – Dumpsters for annual community clean-up events.

The fifteen (15) collection service areas and major roads used for recyclables and solid waste collection are presented in **Appendix A, Figures 3-3 and 3-4**, respectively. To improve collection route efficiencies and better service its residents and customers, the County completed a reconfiguration of the collection areas during the previous planning period.

County facilities and small businesses are also served through the curbside collection program. County facilities participate in the County Office Recycling Program (C.O.R.P.) where curbside collection contractors pick up paper, plastics, metal and glass from County buildings. The small business recycling program enables businesses to become curbside collection customers for recycling only.

The County's recycling and solid waste collection system described in Chapter 3 is adequate and is envisioned to meet the County's needs for the foreseeable future. However, the County continues to evaluate measures to enhance services and control collection costs for its residents and customers.

4.3.2 Homeowner Drop-off of Recyclables and Waste

The County owns and operates the Landfill and the Northern, Central and Southern Recycling Centers. Residents of the County may transport recyclables, yard waste and trash as well as bulky waste items to these facilities. Descriptions of each facility's operations, acceptable materials, and management practices for solid waste and recyclables are provided in Chapter 3.

The services provided by County's Landfill and Recycling Centers are adequate and are envisioned to meet the County's needs for the foreseeable future. However, the County continues to evaluate measures to enhance services at these facilities for its residents and customers.

4.3.3 Homeowner Drop-off of Household Hazardous Waste

Since 1998, the County has assisted residents with the management of household hazardous waste. A list of acceptable household hazardous wastes is provided in Chapter 3.

The services provided to manage household hazardous wastes are adequate and are envisioned to meet the County's needs for the foreseeable future. However, the County continues to evaluate the frequency of these collection events to enhance services at these facilities for its residents and customers.

4.4 Major Categories of Recycling

Recycling is a key component of the County's Integrated System and Solid Waste Management Strategy in order to conserve space at the Landfill. The County system for providing opportunities for its customers to recycle meets the County's needs for the foreseeable future.

4.4.1 Single Stream Recyclables

The County collects residential single stream recyclables (paper, plastic, metal and glass) during curbside collection on a weekly basis. Recycling drop-off collection is also provided at the County's three (3) Recycling Centers and at the Landfill. The single stream commodities are transported to a privately operated recycling facility for processing and marketing.

4.4.2 Yard Waste

The County collects residential yard waste (grass, leaves, brush, branches,) during curbside collection on a weekly basis. Yard waste collection and processing also occurs at the County's three (3) Recycling Centers, and at the Landfill. State law also requires the recycling of yard waste that is collected separately from trash.

The management and processing of yard waste also occurs at three (3) primary facilities (the Landfill, the Prince George's County Yard Waste Composting Facility and the Top Soil Etc. Facility) and one (1) secondary facility (Recycled Green) for the County. These outlets are secured under a variety of agreements. Chapter 3 provides a detailed description of these facilities and associated operations.

4.4.3 Other Recyclable Materials

In addition to accepting the same materials as are collected in the curbside program, residents may also bring pallets; rubble (brick, block, stone and concrete); scrap metal, including white goods; electronics; vinyl; oyster and clam shells; cooking oil, motor oil, antifreeze, automobile lead acid batteries; latex paint; asphalt shingles; propane tanks; and tires to any of the County facilities for recycling. White goods (scrap metal) are also collected through the County's bulky metal collection service. The County Landfill does not accept cooking oil, used motor oil, or antifreeze; however, these items are accepted at the Central Recycling Center which is located adjacent to the County Landfill.

4.4.4 Commodity Marketing

The County uses two primary mechanisms to sell commodities received at its facilities, contractual agreements and published opportunity for quote. The County maintains agreements for the sale of the following commodities:

- Batteries.
- Electronics.
- Mixed Scrap Metal.
- Cooking Oil.
- Motor Oil.
- Single Stream Recycling.

In accordance with the Purchasing Manual, the County obtains quotes from interested parties for the sale of the following commodities:

- Aluminum.
- Cardboard.
- Compost.
- Mulch.
- Vinyl Siding.
- Steel.

Generally, spot bids are used when the quantity of a commodity is relatively small. It is customary to collect a shipment-sized quantity and then solicit competitive quotes.

All revenue received from the sale of recyclable commodities is returned to the Solid Waste Enterprise Fund to offset program costs.

4.4.5 Recycling Program Success

To comply with regulatory requirements and meet the needs of its residents and customers, the County has developed a successful and innovative curbside recycling program that currently recycles 41% (FY12) of the waste generated and collected curbside in the County.

The single stream, yard waste and other materials recycling services provided by the County at curbside, the Landfill and the Recycling Centers are adequate and are envisioned to meet the County's needs for the foreseeable future. Still, the County is always reviewing its recycling programs and developing outreach plans to better educate and increase awareness among the public and private sectors.

4.4.6 Outreach and Education

The County continues to refine its outreach plan to ensure that recycling programs are understood and fully utilized by the residents and customers of the County. The Outreach Plan addresses the basic objectives of the reduction, reuse, and recycling of solid waste. The plan also coordinates both new and old strategies to inform and educate County residents, businesses, and multi-family units on why and how to best manage their solid waste. The plan has been developed through years of coordination of information gathered through customer surveys, program data, internal customer service expertise, and customer interaction. The basic objectives of the Outreach Plan are to:

- Increase the recycling rate.

- Decrease waste generation.
- Increase participation in residential recycling programs.
- Reduce collection and processing costs.
- Reduce the quantity of residue from residential collection programs.
- Increase customer awareness of recycling opportunities and waste reduction options.

The County focuses on specific target audiences, and saturates these audiences to create consistent reinforcement of promotional messages. The County coordinates various forms of media utilized as well as the format of the messages released. In the residential sector, the County continues to implement literature distribution campaigns to inform the public of expanded recycling services. Direct mail pieces, newspaper ads, a website, radio advertising, and an active schedule of exhibits, presentations, and workshops are all part of the outreach campaigns. For the commercial sector, business recycling rate reports are mailed to businesses annually. Waste analyses are conducted for County businesses on a request-only basis.

The County has utilized the following outreach activities to support, manage, improve and enhance the recycling and solid waste initiatives and programs:

- Developed a social marketing campaign designed to promote information sharing with County residents, providing them with the tools and motivation needed to be successful in reaching the current recycling and waste reduction goals.
- Provided information, encouragement and resources to students (school-aged children), families and staff so that they will recycle more at school and ultimately more at home.
- Solicited and implemented customer suggestions and feedback through maintaining an open line of communication with County residents and facility customers.

- Maintained a constant presence in the public eye utilizing the latest emerging mediums such as the internet, cable television, public service announcements and media interviews to communicate recycling messages.
- Provided recycling presentations to County residents, schools, communities, etc. on a regular basis.
- Educated residents on ways to practice source reduction.

In addition to public outreach and education, the County also provides direct support to employees, internal agencies, residents, customers and commercial entities to enhance waste reduction, reuse and recycling practices. Examples of direct support initiatives by the County have included:

- Provide households that receive curbside collection services with one 65-gallon recycling cart. The cart program has proven to increase recycling volume and participation. Continue to provide residents that have not received a cart with yellow 32-gallon recycling containers and backyard composting bins.
- Provided increased opportunities for residents to recycle when they are away from home at public events.
- Maximized the participation and single stream recycling collection at all County facilities under an established County Office Recycling Program (C.O.R.P.).
- Worked with public school and college administration to establishing recycling collection programs that mirror what the students can do at home in accordance with the County-wide recycling and waste diversion program. Both entities continue to operate a comprehensive recycling program. Recent additions to the list of materials collected for recycling or re-use include fluorescent fixtures and surplus furniture.
- Provide technical and practical assistance to businesses that would like to start a recycling program or to expand an existing program. County Recycling Specialists are available to visit work sites to assist in development of a program by providing: commercial recycling guidebooks; information about local recycling outlets; assistance in finding markets for their

- recyclables; and general information concerning the other types of resources available.
- Established a small business recycling and waste diversion program to assist small businesses with acquiring private sector recycling collection services.
 - Assist property managers of multi-family residences to establish recycling programs as an element of cost-effective integrated waste management.
 - Provided separate modes of collection for yard waste, electronics and household hazardous waste to keep such materials out of the solid waste stream.
 - Participate in State-wide efforts to improve market development.
 - Buy products made from recycled material when economically feasible.

The County intends to continue these initiatives, along with new approaches, during the ten (10) year planning period, to provide a clear message to County residents and facility customers that recycling is an integral part of waste reduction, landfill preservation, and fiscal stability. The County will continue to implement public communication and outreach programs to achieve the goals, objectives and policies of this Plan.

4.5 Recyclables Processing and Waste Acceptance Facilities

The primary facilities for waste acceptance and for receiving and processing waste and/or recyclables that support the County's solid waste management system are provided below. Detailed facility information is provided in Chapter 3.

- County's Central, Northern and Southern Recycling Centers and the Landfill – management of recyclables and solid waste.
- Annapolis Junction Processing Facility and Transfer Station – management of solid waste through Transfer Station operations.
- Waste Management Recycle America – management of single stream recyclables.
- Top Soil Etc. – management of yard waste.

- Prince George's County Yard Waste Composting Facility – management of yard waste.
- Recycled Green – management of yard waste.
- Terrapin Recycling – management of scrap metal.

The County also utilizes Creative Recycling Services for the management of electronics and Rubble Bee Recycling for the management of rubble.

The services provided at the above-referenced facilities are adequate and are envisioned to meet the County's needs for the foreseeable future. However, as the County's solid waste management and recycling programs evolve, the County will evaluate mechanisms and measures to enhance services provided to residents and customers.

4.6 Landfill Disposal of Waste

Although it is the least preferred option in the County's Integrated System, the placement of waste in landfills remains an important component of the County's Solid Waste Management Strategy. Source reduction, recycling, and resource recovery can significantly reduce the need for landfilling. Composting and segregation of other waste materials diverts significant portions of the waste stream from final disposal. In addition, the combustion of solid waste through waste-to-energy technology can also significantly reduce waste volumes; however, outlets are still required for disposal of the non-recyclable components of ash residues.

4.6.1 Municipal Landfills (also known as Sanitary Landfills)

A municipal landfill is a solid waste acceptance facility permitted to accept wastes generated by households, communities and commercial businesses in accordance with COMAR 26.04.07. Modern municipal landfills are engineered in a manner that minimizes public health and environmental hazards through the

use of a variety of specific technologies and practices, including but not limited to:

- Base liner systems (clay and synthetic) with leak detection.
- Leachate collection and removal systems.
- Leachate treatment and disposal systems.
- Landfill gas collection and gas-to-electricity systems
- Stormwater management systems.
- Monitoring and inspection systems for control of waste materials entering the site.
- Monitoring systems for groundwater, surface water and landfill gas.
- Closure systems (clay and synthetic).
- Provisions for closure and post-closure monitoring and maintenance.

All landfills within the State of Maryland must satisfy requirements established for design, construction, operation, maintenance, expansion, modification, and closure as stipulated by Federal (RCRA – 40 CFR) and State (COMAR) regulations.

Millersville Landfill

The Millersville Landfill is the County's only operating waste disposal facility. This County-owned and operated landfill facility encompasses 567 total acres, and 248 acres are planned for the disposal of solid wastes. The Landfill opened in July 1975, and since that time, seven (7) out of nine (9) disposal cells have been filled. The County is currently filling the eighth cell (Cell 8) and is permitted for a ninth (Cell 9). A detailed description of the Landfill is presented in Chapter 3.

The Landfill meets Federal Subtitle D requirements under RCRA and complies with the requirements of COMAR. The Landfill also employs environmental controls to protect public health and the environment, which are presented in Chapter 3.

In November 2012, MDE renewed the County's existing Refuse Disposal Permit for the Landfill. Per MDE requirements, refuse disposal permits must be renewed every five years. The Refuse Disposal Permit # 2012-WMF-0240 is valid through November 13, 2017.

Facility Status

The active waste disposal area at the Landfill is Cell 8 and it is in its last phase of development. Cell 8, in its entirety, has a waste capacity volume of 5.6 million cubic yards (CY). As of January 2013, Cell 8 was approximately 87% filled, with a remaining capacity of approximately 735,000 CY.

As Cell 8 approaches final permitted elevations, a transition of landfill operations to the final waste disposal cell (Cell 9) will occur. Cell 9 has a waste placement volume of 8.5 million cubic yards. The initial phases of development for Cell 9 have begun, and include: construction of stormwater management Pond 9-2 with a coastal plain outfall, and access roads in the immediate vicinity of the pond. The initial disposal area (Subcell 9.1) is planned to open for waste acceptance in mid-2015.

The current projected annual fill rate at the Landfill for Cells 8 and 9 is 90,000 tons/year with an annual increase of 1%, through April 2023. After April 2023, the annual fill rate is projected to increase to 201,000 tons/year (based on the expiration of significant waste diversion contracts), with an annual increase of 1% annually thereafter. Based on those fill rates, Cell 8 is projected to last until 2017 and Cell 9 is projected to last until 2041.

Waste Capacity

There is adequate waste disposal capacity at the County Landfill to accommodate the County's waste disposal needs for the ten (10) year planning

period and beyond. However, the County will evaluate mechanisms and measures to preserve capacity and further extend landfill life, as well as investigate alternatives to the current practice of landfilling.

Landfill Life

Waste reduction, waste diversion, recycling, efficient landfill management practices and potential alternatives and emerging technologies will conserve valuable landfill air space. The County may extend its Solid Waste Management Strategy of diverting 31% of the waste stream to alternate disposal facilities beyond year 2023, which would further extend the remaining life of the Landfill. These measures have delayed the date of initial use of the last remaining disposal cell (Cell 9).

4.6.2 Rubble Landfills (also known as C&D Landfills)

Rubble landfills are subject to many of the same facility requirements as a municipal landfill. However, they may only accept materials in accordance with COMAR 26.04.07.

Construction and Demolition (C&D) Debris, including rubble material is an acceptable waste received at the County's Landfill and at each of the three (3) Recycling Centers (Northern, Central and Southern). The County reuses and recycles rubble by collecting materials such as brick, block and stone separately from C&D Debris for use in temporary access road driving surfaces, or as on-site or off-site clean fill.

Currently, there is not an operating rubble landfill located in the County; however, two (2) proposed rubble landfills have permit applications under review with the MDE. These facilities are the Tolson & Associates Rubble Landfill and the

Chesapeake Terrace Rubble Landfill, which are described in more detail in Chapter 5.

There are other privately-owned operating facilities in the region (outside the County) that accept C&D and Land Clearing Debris from any source. The list of facilities includes:

- Days Cove Rubble Landfill, Baltimore County.
- Hance Landclearing Debris landfill, Calvert County.
- Hill Landclearing Debris landfill, Calvert County.
- Honeygo Run Reclamation Center, Baltimore County.
- Howlin Landclearing Debris Landfill, Calvert County.
- M.T. Parran Landclearing Debris landfill, Calvert County.
- Ritchie Reclamation, Prince George's County.
- Rubble Bee Recycling, Calvert County.

Therefore, it appears that adequate capacity exists within the region for the disposal of C&D and Land Clearing Debris material generated in the County.

4.7 Future Needs Assessment

As presented in **Appendix B, Table 3-3** of Chapter 3, Anne Arundel County was expected to manage (2013 estimate) approximately 344,000 tons per year (TPY) of County-generated recyclables, yard waste and municipal waste, either directly at County facilities or indirectly via contracts with private providers and facilities. The total amount of solid waste and recyclables/yard wastes projected to be managed by the County is predicted to grow to approximately 357,000 TPY by year 2023 due to population growth. As **Appendix B, Table 3-3** shows, the 2010 distribution of WMS-managed materials is as follows: 23% materials recycling; 20% organics diversion/recycling; 37% waste diversion to out-of-county disposal; and 20% disposal at the County Landfill. If there is no change from the 2010 percentages of materials recycled,

the quantities disposed at the Millersville Landfill will increase from approximately 69,000 tons (2013) to 71,500 tons (2023). The quantities projected to be diverted to out-of-county disposal sites over this planning period will grow from approximately 127,000 tons (2013) to 132,000 tons (2023).

Prolonging the life of the Millersville Landfill will remain the County's primary solid waste management goal well into the future. The County also has set a goal to increase the recycling of materials collected at curbside (including yard waste). A much longer-term future goal (well beyond the current ten (10) year planning period) involves finding a replacement to the County Landfill.

Appendix B, Table 4-1 contains a set of alternate (increased) recycling projections for the WMS-managed waste stream. The assumption presented in **Table 4-1** is for an increase in materials recycling by 2% annually; no change in yard waste diversion/recycling (20%); and a 1% annual decrease in the quantities of waste disposed of both in the Millersville Landfill and in out-of-county landfills. If this occurs, materials recycling will increase from 25% (2013) to 45% (2023). Clearly, by increasing recycling in the County, WMS-managed wastes requiring disposal can be significantly reduced over the next ten (10) years.

4.7.1 Identification of Future Needs

The Plan includes the continued enhancement to the existing system, and considering alternatives to the existing system in the areas of:

- Waste reduction;
- Reuse and recycling efforts;
- Mechanisms to prolong the life of the Landfill; and
- Long-term planning for different solid waste management practices or facilities.

4.7.2 Enhancements to the Existing System

Potential enhancements to the existing solid waste management system include, but are not limited to, the following:

Expanded Residential Curbside and Homeowner Drop-off Recycling Programs

To improve waste diversion and reuse in the County, as well as increase the County's recycling rate, the County can expand the existing residential curbside and drop-off recycling programs to include additional materials. The County can also focus on new outreach and education programs to help increase the diversion of curbside recyclables in the residential waste stream that are currently discarded but that are recyclable.

Similar to expanding residential curbside collection, the County can focus efforts on new commodity recycling programs at the County's three (3) Recycling Centers. For example, in November 2012, the County Council passed Resolution No. 75-12 to enhance public education and to maximize recycling at the three (3) Recycling Centers. The Resolution focuses on:

- posting messages and signs stating that customers are expected to recycle to the maximum extent practical at the Recycling Centers.
- providing brochures and flyers containing the rules and requirements of recycling at the Recycling Centers.
- trained and knowledgeable recycling staff interacting with customers regarding recycling opportunities at the Recycling Centers.
- training Recycling Center staff to present customers with the best available information regarding the benefits of recycling.
- posting the recycling activity level (e.g. recycling rate) that occurs at each Recycling Center.

Various forms of public outreach and education will also be used to solicit additional participation by residents in the County's recycling programs.

Expanded Recycling at the Landfill

Although the County provides its landfill customers with the opportunity to recycle a wide variety of commodities, some recyclable materials are still disposed with trash.

Customers are asked to recycle yard waste, mixed scrap metal, white goods, tires, vinyl, cardboard, rubble, electronics and rigid plastic before they reach the workface where trash is buried. Source-separation of recyclables prior to the workface is the safest and most efficient recycling option.

The County has an opportunity to recycle more at the County Landfill by continuing to educate customers to further set aside and separate recyclable materials from trash.

Expanded County-owned and Managed Yard Waste Composting Facility

The County maintains a multi-faceted strategy for yard waste recycling, which relies both on County facilities and on partnerships with private yard waste processors. Absent private partnerships in the future, the County will need to develop and implement alternate arrangements for yard waste management.

Given the amount of yard waste material collected each year, an expanded County-owned and managed yard waste processing facility to handle all material appears a viable option. This enhancement could alleviate the County's reliance on private-sector and alternate facility support to manage yard waste. The County could also produce a diverse, marketable product line from the processing of yard waste into compost, mulch, soil amendments, blended topsoil

and other saleable products. Market research on value-added end products and niche markets could be performed to help identify the compost and mulch end-products that may offer the best revenue potential.

With respect to staffing and expertise, several County managers and supervisors maintain Compost Facility Operator Certificates issued by the State of Maryland, and these trained personnel could manage an expanded yard waste composting operation at the County Landfill.

Solid Waste Composting

Beyond yard waste composting, there are no in-County or regional solid waste management facilities that manage other types of solid waste composting operations. The County has no plans to initiate this type of operation during the planning period.

Operational Improvements and Efficiencies at the Landfill

To prolong the remaining life of the County Landfill, the County continues to implement measures and techniques that improve operational efficiencies there. These measures and techniques include:

- *Maximize Compaction Rate* – Entails the continued emphasis on achieving the highest practical compaction rates through operator training and equipment utilization.
- *Minimize Soil for Cover* – Entails the continued use of State-approved alternative daily cover (e.g., use of a tarp) and operator techniques that minimize soil use and airspace loss, while meeting regulatory requirements. Currently, a moveable tarp is the only permitted method for use as an alternative daily cover (ADC). Additional ADC options,

as they become available, may be evaluated to determine any positive impact they would have on the current landfill operation.

- *Recover and Reuse Recyclables* – Entails expanded efforts wherever possible to increase the recovery rates for cardboard, metal, wood, and yard waste, as well as the continued use of recycled brick, concrete, and asphalt as driving surface and road preparation material.

Increased Waste Diversions to Private Regional Transfer Stations

The County's Solid Waste Management Strategy diverts of the majority of County-collected residential waste to private facilities. Currently, waste is diverted to the Annapolis Junction Transfer Station.

Diverting waste out-of-County has taken advantage of very attractive prices for solid waste disposal. Waste transfer offers advantages in that it is reliable, accessible, and requires no County capital expenditures. This practice also aids in further prolonging the remaining site life of the Landfill.

Within the limits of affordability, waste diversion is expected to continue for the duration of the ten (10) year planning period from 2013-2023.

Compatibility of Enhancements with the Existing System

New measures, programs and policies instituted by the County to recycle or divert materials from disposal, or to more efficiently utilize remaining airspace in the County Landfill are deemed to be compatible with the County's existing solid waste management and recycling systems.

4.7.3 Alternatives to the County's Existing Systems for Recyclables Management, Yard Waste Management and Waste Disposal

Potential alternatives to the existing methods of solid waste management include the following:

County-owned and Managed Recycling Facility

The privately-owned and operated Waste Management Recycle America (WMRA) Facility in Elkridge, Maryland, accepts and separates a variety of single-stream recyclable materials in its 50,000 square foot facility. WMRA's throughput averages roughly 1,500 tons per day.

There may be advantages to a County-owned Recyclables Recovery Facility at some point. However, with the availability of a successful private recycling facility, located in close proximity to the County (see **Appendix A, Figure 3-8**), no study of the feasibility for a County-owned recycling facility is warranted during this planning period.

Regional or County-owned and Managed Waste-to-Energy Facility

Solid waste can be managed through waste-to-energy (WTE) technology. A significant benefit to WTE is volume reduction. WTE facilities typically report up to a 90% volume reduction of waste through incineration (approximately 70% reduction by weight) from consolidated solid waste to combustion ash residue. The volume of ash residue can be further reduced through beneficial use processes to recycle and remove metal components (ferrous and non-ferrous) of the waste stream that became bonded to the ash residue. Following metals separation, the ash residue may also have the potential for beneficial use as alternate daily cover during active landfill filling operations, or can be managed by standard disposal practices in a landfill facility permitted to receive such waste.

In general, WTE projects are extremely capital-intensive due to extensive equipment and building needs. However, on a regional scale, multiple municipal or County jurisdictions can share the capital expense of WTE facilities. Additionally, revenues from the sale of electricity and renewable energy credits can be used to offset the capital costs.

WTE facilities are often difficult to site and permit due to perceived impacts on traffic volume, potential nuisances from the facility (such as odors or noise), concerns with air and water pollution impacts on the area, lack of community and neighbor acceptance, and other similar factors. Benefits to a WTE facility may include more opportunity for siting due to smaller land requirements compared to municipal solid waste landfills, as well as the avoidance of long-term costs of managing a landfill facility at the end of its life as required by regulation.

If a WTE facility were constructed in the future to handle County-managed waste, a larger facility, sized to handle both County-landfilled waste and County-diverted waste would be most practical. There are economies-of-scale to be gained by constructing and operating a larger WTE facility.

WTE may also be employed to extend the remaining life of the Millersville Landfill. However, if a smaller WTE facility were developed, processing only the wastes that are currently landfilled at Millersville, it would suffer from lack of economies of scale.

The County has utilized Southwest Resource Recovery Waste-to-Energy (formerly Baltimore Refuse Energy Systems Company – BRESKO) for the acceptance of County-generated waste. The facility is permitted to manage 2,250 tons per day of municipal solid waste. This facility provides another alternative to divert County waste in lieu of transfer stations.

Regional or County-owned and Managed Food Composting Facility

A County food waste diversion and composting program has the potential to further reduce landfill disposal. Food waste composting and yard waste composting are compatible operations, so food waste composting using yard waste is achievable. Food waste composting operations are similar to traditional yard waste composting, with the exception of the added steps required to address the liquid discharge from food scraps. The liquid must be properly managed to avoid water quality issues, odors, and related concerns. Food waste composting operations typically use more mechanized systems and technologies, as opposed to less sophisticated systems that are completely acceptable for managing leaves and grass.

Food waste composting facilities can be capital-intensive due to newly promulgated stormwater requirements. A primary concern is the exposure of compostable materials to precipitation and untreated discharges of resulting stormwater. On a regional scale, multiple municipal or County jurisdictions could share the capital expense of a food waste composting facility.

Proper control of aerobic composting operations is critical to minimizing odors that could be generated from the receiving and composting areas of a food waste composting site. Facility siting needs to take into account significant buffer between the facility and its neighbors, stormwater management, and similar factors. Truck traffic and noise impacts should be considered, and these considerations are similar to other types of waste handling facilities.

Waste Mining at the County Landfill

Landfill mining refers to the excavation of previously buried waste and typically involves separation and recovery of recyclables such as ferrous metals from the buried waste, screening and separation of soil from the mix, and re-landfilling of

the remaining waste in a separate area of the landfill. One objective of landfill mining at operating landfill sites is the generation of useable air space at a landfill site. An objective of landfill mining at closed landfills is typically to minimize potential environmental liabilities.

The County excavated Cell 3 in 1994 and the western portion of Cell 1 in 1997 and placed the waste in Cell 8. To gain additional landfill space at the Landfill, waste excavation may be a viable option in the future.

Although waste mining would alleviate some of the environmental liability associated with maintaining a landfill facility over the post-closure care and maintenance period, certain operational aspects need to be considered. Such aspects include available waste capacity and impacts on the longevity of County waste disposal cells, as well as funding to manage and mitigate unforeseen circumstances during excavation.

Bioreactor Technology at the Landfill

Unlike the industry standard practices of traditional municipal and sanitary landfills, bioreactor landfills are designed to accelerate the natural decomposition of the organic portion of waste “in-situ” within a disposal cell. Bioreactor technology monitors and maintains optimal moisture conditions at or near field capacity through the injection of landfill leachate or other liquids into a waste cell. The liquids act as a catalyst to stimulate naturally occurring micro-organisms that can digest organic matter in aerobic (with oxygen) or anaerobic (without oxygen) conditions.

Bioreactor technology has already been considered at the County Landfill and rejected by the County, due to increased gas production and the close proximity of the landfill site to residential properties.

Development of a New Sanitary Landfill

The Millersville Landfill has sufficient remaining airspace to serve the County, under the current waste diversion and recycling strategy, for the current ten (10) year planning period and beyond. However, at some point in the future, the County Landfill will become full and must close. It is not presently believed that there is any remaining space on the Millersville site to develop a new landfill or new landfill cells. Therefore, by the time Cell 9 is filled and closed, a new waste processing and disposal facility or facilities must be in place. In consideration of the fact that large waste processing and disposal facilities such as landfills and waste-to-energy facilities can take ten (10) to fifteen (15) years to plan, site and construct, it is important that the discussion of a future waste management strategy, including replacement disposal capacity, be discussed well before the Cell 9 disposal area is filled.

A new landfill may need to be sited on land that does not currently contain any waste processing or disposal facilities (a “greenfield” site). MDE regulates the siting, design and operational details of a new landfill, and ensures that a combination of environmental regulations and design technologies and materials are used to minimize the potential impact of a landfill on the surrounding environment. All municipal waste landfill cells must be designed with a bottom liner system, including a system for leachate collection, similar to the landfill cells now in use at the Millersville Landfill. Closure and post-closure plans for the new landfill must be incorporated into the system design. The types of materials to be accepted at the landfill must be determined and planned for in the design and operations.

Chief environmental concerns with a sanitary landfill include the potential contamination of groundwater, the control of landfill gas to prevent off-site migration, odors and other air quality impacts, truck traffic, noise, and litter.

Siting and adequate buffer areas around the active areas of the landfill are critically important when planning a new landfill.

Developing a new sanitary landfill can be capital-intensive, with relatively high permitting, land, and site development costs. Landfill siting and development costs are very site-specific.

Compatibility of Alternatives with the Existing System

The County considered alternatives that are compatible with its existing recycling and solid waste management system. Many additional factors are considered in the evaluation of alternatives including capital costs, financing, private versus public operations, regulatory requirements, feasibility, environmental impacts, long-term stability, and future liabilities.

Due to long lead times, conceptual planning and evaluation of selected alternatives occurs long before action is needed.

4.8 Special Waste Management and Disposal

4.8.1 Asbestos

Asbestos disposed at any site must be packaged and labeled in accordance with COMAR 26.11.15.04. Procedures for disposal of asbestos in a landfill include:

- Personnel handling the asbestos wear protective clothing and respirators.
- The asbestos is handled with care to reduce the emission of fibers into the air.
- Asbestos is delivered to a separate area of the landfill for disposal.
- The asbestos is placed in a trench and completely covered with soil.

The above procedure recognizes that the health threat posed by asbestos is the release of asbestos fibers to the atmosphere and inhalation by humans. Once properly buried within a landfill and isolated from the atmosphere, asbestos poses no known health risks.

Asbestos is not currently accepted in the curbside collection program or at any of the County's facilities because of the special handling requirements. Small quantities of up to four (4) bags are accepted at the County's HHW collection events, provided the material is double-bagged to protect workers. Customers who need to dispose of asbestos waste are referred to private disposal facilities.

4.8.2 Special Medical Waste

County facilities do not accept special medical wastes, including infectious or bio-hazardous medical waste. The County does not have authority to accept special medical waste and it is not addressed in this plan. These wastes are managed by MDE under specific medical waste regulations.

4.8.3 Hazardous Waste and Controlled Hazardous Substances

The County does not accept hazardous substances for disposal other than small quantities of household hazardous waste. Currently, hazardous waste generators within the County must contract with a private, licensed hazardous waste hauler for collection and disposal of hazardous waste or controlled hazardous substances.

4.8.4 Emergency Response for Hazardous Waste Spillage or Leakage

Response to hazardous waste spills or leaks is the responsibility of the Anne Arundel County Fire Department. The Fire Department contracts for emergency response teams and with private, licensed haulers of hazardous waste for removal and disposal of hazardous waste or controlled hazardous substances.

4.9 Constraints Imposed Upon Establishing a Solid Waste Facility

The locations of solid waste management facilities should be planned to minimize impacts on the residents of the County and on the environment. Although private entities may endeavor to site new solid waste processing and acceptance facilities, the County currently has no plans to site any new publicly-owned landfill facilities over the ten (10) year planning period. This is primarily due to the adequate available waste disposal capacity of the County's Landfill. However, if the County does decide to site a facility, there are certain regulatory and planning constraints that should be considered. A brief discussion of the constraints on solid waste processing and acceptance facilities, (based on technical, environmental, and land use concerns), follows:

4.9.1 Topography

The topography of the County is described in Section 2.1 of this Plan, which describes the general location and shoreline of surface water (bays, rivers, tidal estuaries) and the topographic relief from the water bodies at sea level to areas in-land.

Landfill sites are generally located in broad flat plateau areas and areas which do not have steep slopes. Lands which have steep slopes are not considered acceptable for landfills due to the excessive site grading that would be required to develop the landfill. Other waste management facilities are not generally as constrained by the slope of the land; however, cost factors associated with site work must be considered.

Sensitive areas such as tidal and non-tidal wetlands, and floodplains, may be regulated by Federal, State, and local laws. In August 1988, the County developed a Critical Area Program. The Critical Area is defined by the State as all land and water area 1,000 feet landward from high-tide or the edge of tidal wetlands. This program established land use policies and restrictions on development in the Critical Area. The Critical Area is not considered acceptable

for the siting of recycling or solid waste management facilities. See Section 4.9.4 for exceptions to this policy.

4.9.2 Soils

The predominant soil types of the County are sands, silts, and clays. The porous nature of the unconsolidated soils does not provide the impervious layer needed to contain leachate within the waste fill area of a landfill. However, measures such as geomembranes, leachate collection and treatment systems, and monitoring systems aid in reducing the potential for migration of leachate into the environment.

The properties of the soils on which a landfill is sited should be considered in planning, design, construction, operation, closure, and post-closure of the landfill. Soil characteristics such as texture, erodibility, load-bearing capacity, resistance to slide, permeability, water table elevation, and quantity should be addressed during the site selection process. Clayey, impermeable soils are desirable for the base of the landfill, however; landfill operations require a loamy or silty soil, which is easily spread and compacted for cover material.

Soil types for other waste management facilities (such as waste-to-energy facilities) are those which can provide adequate structural support for the building, structure, or concrete pad. Depth to seasonal or permanent high water table may be a constraint to composting facility siting. All types of solid waste management facilities could be affected by the groundwater recharge capabilities of soils that are part of a stormwater management system.

4.9.3 Geologic Conditions

Although landfill facilities can be engineered to be environmentally protective in most geologic settings, it is desirable to have sites in areas in which geologic conditions provide complementary attenuation capacity. Optimum geologic conditions for a landfill site include the lack of permeable fault zones underlying

the site, and adequate depth to ground water and bedrock. Geologic conditions should be such that an effective ground water monitoring system can be established. Therefore, landfill siting over limestone geology is generally disallowed.

Siting other types of waste facilities may also be limited over limestone geology due to potential for groundwater pollution. Other than this consideration, structural support of waste management structures is the most important geologic consideration for facilities other than landfills.

4.9.4 Location

Locating a site for a solid waste management facility involves the interaction of regulatory, environmental, technical, economic, and socio-economic considerations. Infrastructure such as electric power, water and wastewater service, as well as access to the public road network are important considerations in site selection for any waste management facility. State and Federal regulations address compliance with the full range of air emissions, wastewater discharge, and residuals disposal requirements. These regulations also address site climatology, hydrology, geology, hydrogeology, and soil conditions. Other considerations include land use characteristics, types of local land use, buffer distances, prevailing wind directions in relation to local land use, and distance from the primary sources of waste.

The requirements of the Critical Area Law and appurtenant regulations must be followed when siting facilities. Landfills and solid and hazardous waste collection or disposal facilities are permitted in the Critical Area if no environmentally acceptable alternative exists outside the Critical Area. In addition, locating in these areas is permitted if the facilities are needed to correct an existing water quality or wastewater management problem.

4.9.5 Aquifers

The geologic formations underlying the County are sedimentary sands and gravel, capable of yielding substantial quantities of fresh water. Landfills are designed and regulated to protect groundwater resources through the use of bottom liners and leachate management systems. Sites for landfills must be carefully evaluated to minimize potential impacts to groundwater.

All types of waste management facilities must consider groundwater aquifers in line with best management practices for stormwater management and recharge systems, and for water supply for facility process water and drinking water supply. Impacts of wastewater discharges on groundwater resources are also a consideration affecting all types of facilities.

4.9.6 Wetlands

Wetlands are very important to ecosystems of the County and Chesapeake Bay. The tidal wetlands within the County provide a transition zone between dry land and open water. Non-tidal wetlands are referred to as inland or upland wetlands and include swamps, bogs, and hardwood forests. All types of solid waste management facilities should avoid encroaching onto areas classified as non-tidal wetlands.

4.9.7 Surface Waters, Floodplains and Watersheds

The County is laced with a network of streams that carry runoff from many different land uses to the tidal waters of the County's numerous creeks and rivers. Because of its topography, streams in the County tend to be short, first and second order slow moving, low gradient streams.

Along these rivers, streams, and tributaries are areas associated with the 100-year floodplain. Floodplains in the County are defined as the 100-year floodplain

and are protected under the County's floodplain ordinance; this ordinance requires that a waiver be obtained for development that will encroach on a floodplain. Federal regulations preclude the location of solid waste facilities within 100-year floodplains.

4.9.8 Water Quality

Surface water within the County drains into the Chesapeake Bay. The State of Maryland has classified waterways according to the most critical use for which they must be protected, and has set standards for water quality parameters for each designated use. The designated uses per COMAR 26.08.02.02 are as follows:

- Use I and Use I-P – Water Contact Recreation and Protection of Aquatic Life.
- Use II – Shell Fish Harvesting Waters.
- Use III and Use III-P – Natural Trout Waters.
- Use IV and Use IV-P – Recreational Trout Waters.
- Use I-P, III-P, and IV-P waters – Public Water Supply.

The siting and location of landfill sites near these protected waterways should be avoided in order to reduce the potential for impacts to water quality. Proximity of other types of waste management facilities to surface waters should be considered when siting these types of facilities.

4.9.9 Land Use

It is important that solid waste management facilities are sited in areas appropriate for such land uses. Location requirements for landfills are included in Federal regulations (40 CFR Part 258). Adjacent, incompatible land uses for landfills include airports and hospitals. Proximity of composting facilities to

sensitive receptors such as nursing homes and hospitals should be considered during site planning. General compatibility of all types of proposed facilities with the surrounding area and land uses should always be considered; areas that offer large buffer areas, are predominantly rural, or are predominantly industrial are a preferred factor when choosing locations for solid waste facilities.

The United States Department of Transportation, Federal Aviation Authority Order 5200.5, FAA Guidance Concerning Sanitary Landfills On or Near Airports, stipulates the following criteria:

- Waste disposal sites may not be located within 10,000 feet of any runway end (used or proposed) to be used by a turbine powered aircraft.
- Waste disposal sites may not be located within 5,000 feet of any runway end used only by piston powered aircraft.
- Waste disposal sites that attract or sustain hazardous bird movements for feeding, foraging, or roosting are discouraged from being located within a 5 mile radius of a runway end and/or approach as well as from departure patterns of aircraft.

The Annotated Code of Maryland Environment Article 9, Section 225 prohibits the location of any landfill within a 2 mile radius of any hospital.

4.9.10 Growth Patterns

All proposed facilities should be sited at locations that are in conformance with the County General Development Plan (GDP) and the County Office of Planning and Zoning's requirements. The County GDP assesses, plans for, and directs growth within the County. County zoning and land use regulations support recommended growth patterns. The GDP includes a Land Use Plan that identifies specific areas of allowable growth and specific areas that require minimal growth based on land use type. The Land Use Plan will guide the

goals, policies and actions of growth and land use in the County. As previously discussed in Section 2.6, this Plan shall not be used to create or enforce local land use and zoning requirements.

As part of the Small Area Planning process within the GDP, the Land Use Plan will guide the development of more specific community-based land use plans. The Land Use Plan and GDP will also aid the County in reducing the possibility of adjacent incompatible land uses.

With respect to the development of solid waste management facilities in the County, the Land Use Plan and the GDP provide the necessary guidance to evaluate compatible land uses and potential impacts. This process also provides assurance that potential projects and future facilities will not adversely impact the County's long-term goals, objectives and policies.

4.9.11 Landfill Capacity

Following recycling and waste diversion, waste disposal is an essential element of the County's Integrated System and Solid Waste Management Strategy. At this time, the County has no plans to site a new landfill or other waste management facility in the County.

There are landfill preservation measures that may extend the life of the County's landfill facilities. These measures include increasing recycling and waste diversion, improving waste compaction in active disposal areas, or using alternate waste processing and waste-to-energy technologies to divert and process some waste streams that are currently landfilled. The County may also gain additional landfill capacity by implementing waste mining operations of closed landfill cells, or through permitting modifications to the design of existing and planned waste disposal areas.

4.10 Municipal Solid Waste Ten-Year Assessment

The County maintains detailed information on the amounts of solid waste it directs to the County Landfill, area recyclers, and local waste transfer facilities. In addition, private facilities located within Anne Arundel County provide information for the County's annual Maryland Recycling Act report. Data reported includes material origin, type, quantity, and destination. This information is used to compute the County's overall recycling rate.

Appendix B, Table 4-1, projects solid waste disposal and recycling for the next ten years based on waste streams managed by the County in 2013. Projections include continued gains in recycling, which further reduces waste disposal requirements over the planning period. Continual growth of the County's recycling programs form the basis for a sound solid waste management plan.

This Plan was prepared recognizing both the short and long-term waste management and recycling needs of the County's residents. It also relies on the viability of existing private businesses in helping the Count meet these needs. The County performs a review of its Plan every three (3) years. Any changes within the marketplace or system of waste management-related facilities and those that negatively impact landfill life are considered to gauge when the Plan requires revision.

The primary purpose of the Solid Waste Strategy adopted in Anne Arundel County is to extend the life of the County Landfill as long as possible. In addition to robust programs to collect and recycle paper, plastic, metal, glass and yard waste, the County diverts a portion of waste to the Annapolis Junction Transfer Station for out-of-County disposal. Transfer of municipal solid waste to an out-of-County landfill is currently a cost-effective and practical option for the County through the ten (10) year planning period. The out-of-County disposal contracts expire in 2023 and it is not known whether new disposal contracts will offer similarly favorable economics to the County.

The County Landfill is expected to have disposal capacity until 2041. This most recent estimate considers the remaining volume in Cell 8, the permitted capacity of Cell 9, and assumes that waste diversion to an out-of-County landfill will continue through 2023. It presumes the existing programs for single stream recycling and yard waste composting and reuse will continue and grow. Waste diversion, increased recycling and the application of emerging technologies will extend County Landfill life estimates beyond 2041.

The waste generated in the County totaled 1,031,789 tons in 2010 according to the 2010 MRA report published by MDE (**refer to Appendix B, Table 3-1**). In 2023, waste generated in Anne Arundel County is projected to grow to 1,087,789 tons based on increases in the County's population. The total includes waste managed (**refer to Appendix B, Table 3-2**) by the County.

According to MDE records, the percentage of total MRA plus non-MRA wastes and recyclables that were recycled in 2010 was approximately 48%. The remaining 52% was disposed. The Plan projects that the amount of total wastes managed in the County by 2023, that requires disposal (after recycling) will reach approximately 577,000 tons. Approximately 523,600 tons are projected to be recycled by 2023.

The County Landfill has a life expectancy well beyond the 2023 planning period. The Annapolis Junction Transfer Station, and the King George County (VA) Landfill it serves, has a projected life beyond 2023 as well. Finally, the (BRESKO) Waste-to-Energy Facility in Baltimore is expected to operate through the planning period. Together, these facilities afford adequate capacity to handle the approximately 577,000 tons of MRA and non-MRA materials that will require disposal in 2023.

4.10.1 Waste Acceptance and Disposal Facilities

Transfer Stations

Solid waste transfer stations are an integral component of the County's strategy to encourage recycling, reuse and waste reduction; provide for waste diversion; and to prolong the life of the County Landfill. These facilities provide an outlet for residentially and commercially generated waste from various counties within the region, including the County, Fort George G. Meade, and the City of Annapolis. Two privately owned and operated transfer stations exist in the County.

The Annapolis Junction Transfer Station has been in operation since 1997.

The Curtis Creek Recovery Systems Transfer Station has been in operation since 1999.

As each of these facilities is permitted to accept a maximum of 3,000 tons per day of solid waste, these capacities appear more than adequate to handle County-managed solid waste actually accepted at each facility.

The County's current demand for waste transfer is being fully met at private and public facilities, and these facilities are ample to handle the expected growth in County-managed waste transfer over the ten (10) year planning period.

At this time there is not a public need to establish additional transfer stations within the county or to expand existing ones. This Plan concludes that there is sufficient capacity to address the County's both short term and long term disposal needs. Furthermore, advocates for expansion of existing transfer stations or development of new transfer stations must demonstrate that the current disposal needs of the County are not being adequately satisfied.

Rubble Landfills

C&D Debris generated in the County is primarily disposed at existing private rubble landfills located outside the County as identified in Section 4.6.2. The existing in-County and out-of-County processing and disposal facilities within the Region are adequate to manage C&D Debris generated within the County.

Land-clearing Debris Landfills

Land-clearing debris landfills are regulated by the State of Maryland. Pursuant to COMAR, land-clearing debris landfills are permitted to accept earthen material, topsoil, tree stumps, root mats, brush and limbs, logs, vegetation and rock. Unless materials are mulched, chipped, or composted at the generation site, most are destined for the landfill. Land-clearing debris is an acceptable waste at rubble landfills. It is also accepted at the County's Landfill. There are no permitted landfills specifically for the disposal of land-clearing debris located in the County.

This Plan concludes, for the reasons set forth under Rubble Landfills, that there is sufficient capacity to address the County's short and long term land-clearing debris disposal needs.

4.10.2 Recyclables Acceptance and Processing Facilities

The County promotes facilities that recycle or reuse materials that are otherwise discarded in the County, provided that such facility is designed, sited permitted and operated in accordance with local, County and State regulatory requirements. The County's Zoning Code allows for various land uses that relate to recycling, reduction and material processing. There are distinct advantages for the inclusion of recyclables acceptance and processing facilities in the County's Plan. Facilities such as these are highly specialized and handle a wide array of materials that otherwise would be disposed of either at the Landfill, or at another

disposal site within the region. As previously mentioned in Section 2.6, this Plan shall not be used to create or enforce local land use and zoning requirements.

The County's only remaining landfill is a valuable and finite resource for the County and, therefore, it is necessary that this Plan provide for the establishment of viable businesses and operations that recycle, reduce, or reuse discarded materials. Planning for the facilities described below is in keeping with the County's mission to conserve and prolong the availability of our resources while also contributing to the County's overall recycling rate.

Recyclables Recovery Facilities

The County operates a paper baling operation at the Millersville Recycling Center. Other recovered recyclables collected by the County are currently transported to WMRA in Elkridge, MD for processing and shipment to market. At this time private recyclables processing facilities, in conjunction with current County-managed curbside and homeowner drop-off recyclables collection programs, are adequate to meet the ten (10) year planning needs of the County.

Rubble Processing Facilities

Rubble processing facilities (formerly called Construction and Demolition Debris Processing Facilities under the County Zoning Code) are required to obtain an operating permit from the State of Maryland. Prior to issuance of a permit, the proposed facility must conform to the County's ten (10) year Solid Waste Management Plan. These facilities are permitted to accept debris resulting from construction and demolition activities, and from land-clearing activities, as well as household appliances and other bulky materials. As previously mentioned in Section 2.6, this Plan shall not be used to create or enforce local land use and zoning requirements.

The County accepts C&D Debris including Rubble material at the Landfill and the three (3) Recycling Centers. The County makes every attempt to segregate, reuse and recycle Rubble by collecting and aggregating materials such as brick, block and stone separately from C&D Debris. Rubble from the Southern Recycling Center is transported to Rubble Bee in Calvert County for processing. There are no rubble processing facilities located in Anne Arundel County. The establishment of a private rubble processing facility could benefit the County and might lessen the dependence on the County Landfill and the three (3) Recycling Centers for accepting and processing rubble (brick, block and stone).

Natural Wood Waste Recycling Facilities

Natural wood waste recycling facilities accept tree stumps, brush, limbs, root mats, logs, leaves, grass clippings, unadulterated wood wastes, and other natural vegetative materials. The State of Maryland regulates only commercial natural wood waste recycling facilities. There are three (3) commercial facilities located in the County: A-A Recycling, Inc., Bronson Contracting, Inc., and L&W Recycling, Inc.

The materials managed at natural wood waste recycling facilities are similar to the residential yard waste and include grass, leaves, brush, branches, logs, and stumps.

With the County's existing facilities and private outlets for accepting and processing natural wood waste (e.g. yard waste), there is sufficient capacity to manage this recyclable material during the ten (10) year planning period.

4.11 Plan Conformance

Facilities that require a Refuse Disposal Permit from the State of Maryland must obtain a statement from the County that indicates conformance with the County's ten (10) year Solid Waste Management Plan and local zoning and land use requirements. These

facilities include, but may not be limited, to municipal solid waste, C&D Debris (e.g. rubble), and land-clearing debris landfills and solid waste transfer stations.

Article 18 of the Anne Arundel County Code includes the applicable zoning requirements for various solid waste acceptance, processing, recycling and disposal facilities. These facilities are required to obtain Special Exception approval as provided for in the Code. As previously mentioned in Section 2.6, this Plan shall not be used to create or enforce local land use and zoning requirements.

Regulatory Topic Summary
COMAR Title 26.03.03.03(F)

Chapter 5 – Plan of Action

“Chapter 5 shall contain:

- (1) Chapter five shall contain the county's plan of action with respect to all types of solid waste and all phases of solid waste management.*
- (2) The plan of action in §F(1), of this regulation, shall cover at least the succeeding 10-year period and, at a minimum, shall:*
 - (a) Discuss the solid waste disposal systems and solid waste acceptance facilities, both public and private, which will be in use during the planning period, including proposed systems and facilities;*
 - (b) Provide a mechanism for managing each of the waste streams identified in §D(1) of this regulation;*
 - (c) Demonstrate, through tables, charts and graphs, that the sizing, staging, and capacity of all systems and facilities in §F(2)(a) and (b), of this regulation, will be adequate for the county's needs during the planning period;*
 - (d) Establish schedules for placing new public or private solid waste disposal systems or solid waste acceptance facilities into operation, including a description of necessary actions and their timing, to bring the county's solid waste disposal systems into compliance with the mandates of pertinent federal and State laws, and any permits or orders issued under these laws;*
 - (e) Describe provisions and methods for financing existing and proposed solid waste disposal systems, including planning and implementation;*
 - (f) Include a projected closure date for each public solid waste acceptance facility which is scheduled to cease operations during the planning period, the projected use of each closed site, and the relationship of that use to the county's comprehensive land use plan; and*
 - (g) Discuss changes in programs, plans, regulations, and procedures as a result of the assessment conducted under §E, of this regulation.”*

CHAPTER 5

5.0 Introduction

COMAR 26.03.03.03 requires the County to develop a plan of action to sustain its solid waste management system over the succeeding ten (10) year planning period. This Chapter presents the plan of action for the planning period of 2013 through 2023. Chapter 5 demonstrates the County's goal to continue to enhance its affordable, comprehensive solid waste management system that promotes waste reduction, encourages the reuse of discarded materials, maximizes source separation and recycling of materials, minimizes the need to dispose of materials as waste, and conserves valuable landfill space.

5.1 Priorities

The Bureau of Waste Management Services (WMS) is responsible for planning and implementing solid waste management and recycling initiatives, programs and systems in the County. Accordingly, WMS has developed priorities that build upon its successes and provide a roadmap for the succeeding ten (10) year planning period while continuing to protect public health and the environment. These priorities support the goals, objectives and policies of the Plan that are discussed in Chapter 1. The twelve (12) priorities are:

- 1) Integrated System Management – implementing new initiatives and establishing programs and systems that respond to regulatory change and promote a hierarchical flow from source reduction and reuse, to recycling and composting, while further reducing disposal.
- 2) Public Health and the Environmental Protection – implementing measures to protect public health and the environment from the time recyclables and waste are placed curbside for collection until their ultimate processing, recovery, and disposal.

- 3) Regional Partnerships – developing partnerships with local jurisdictions and private entities and associated facilities on a regional basis to help meet the County’s recycling and solid waste management needs and its obligation to maintain an affordable program for rate payers.
- 4) Recycling, Waste Diversion and Landfill Preservation – maximizing recycling and economical waste diversion of material from curbside collection, the Recycling Centers and the County Landfill to conserve landfill capacity throughout and beyond the succeeding ten (10) year planning period.
- 5) Collection and Management of Recyclables and Solid Waste – implementing a comprehensive, convenient, efficient and affordable collection, processing and disposal system for recyclables and solid waste.
- 6) Technology Enhancements and Alternatives – evaluating innovative technologies and incorporating environmentally sound approaches that maximize available resources, improve operational efficiencies and further extend the life of the County Landfill.
- 7) Future Landfill Life and Capacity – conceptualizing long-term needs for solid waste processing and disposal capacity in the County, recognizing that the County Landfill will one day close.
- 8) Constituent Communication and Outreach – developing effective methods of public outreach to better serve and educate residents and facility customers on the County’s existing and emerging recycling, waste diversion and solid waste programs.
- 9) Revenue and Beneficial Use – generating revenue to sustain the Solid Waste Enterprise Fund, including marketing recyclable items and garnering the beneficial use of solid waste-derived resources such as landfill gas, natural wood waste and rubble.

- 10) Rates and Fees – keeping the residential rate and landfill tip fees affordable.
- 11) Future Strategic Plans – continuous improvement of the existing solid waste management and recycling systems based on market, technological, industry, and regulatory changes over the succeeding ten (10) year planning period.
- 12) Future Disposal Facilities - Comprehensively review and evaluate options for future solid waste disposal facilities to replace the County Landfill.

Appendix B, Table 5-2 presents a list of Strategic Recycling and Solid Waste Action Items that embody many of these ideas and lay out recommended strategies to guide their implementation.

5.2 Priority 1 - Integrated System Management

The County is committed to providing a spectrum of services to its customers. With respect to this Plan, such services are guided by the County's Integrated System that models the EPA Hierarchy (refer to **Appendix A, Figure INT-3**) and its Solid Waste Management Strategy (refer to **Appendix A, Figure INT-4**). As the County's programs expand or change, from collection and processing to recovery or disposal, the County's goals regarding such programs will be reevaluated. These goals are previously referenced in Section 1.1 and will provide the basis for setting future objectives as well as evaluating future policy decisions.

5.2.1 Meeting the Goals and Objectives

To meet the goals and objectives of the Plan, the County will continue to implement a strategy of recycling and waste diversion to minimize disposal at the County Landfill. This strategy will include pursuing increases in the residential recycling rate. The policies that will enable the County to achieve its recycling and solid waste goals were discussed in Section 1.4. These policies will be reviewed in conjunction with the County's changing goals and objectives to

provide a consistent method for evaluating future decisions regarding programs and systems.

5.3 Priority 2 - Public Health and the Environmental Protection

As part of providing recycling and solid waste management services, the County recognizes the need to protect public health and the environment. All aspects of material collection, processing and disposal processes at in-County and out-of-County facilities involve measures to ensure that public health and the environment are safeguarded. These measures may include short-term and long-term planning, contractual arrangements, budget management, public outreach and education, facility operation, and closure and post-closure care monitoring and maintenance. The measures are utilized from the time recyclables and solid waste are placed curbside for collection until their ultimate processing and disposal. These measures are also reviewed for effectiveness to meet the County's goals and objectives, and for efficiency to maximize the conservation of natural resources.

To manage recyclables and solid waste from its customers, the County operates three (3) Recycling Centers and the County Landfill. To protect public health and the environment, each facility is required to comply with specific regulatory requirements based on the acceptance of materials and its operations. Provided below is an overview of regulatory requirements and compliance for the County's facilities:

- Recycling Centers (Northern Central, and Southern) – These facilities do not require a State-issued Refuse Disposal Permit. However, each maintains a Stormwater Pollution Prevention Plan to comply with the General Discharge Permit for Storm Water Discharges Associated with Industrial Activity issued by MDE. Each facility holds an oil operations permit for the acceptance of used oil and a secondary scrap tire collection license.
- County Landfill (Millersville Landfill) – This facility operates under a Refuse Disposal Permit issued by MDE. The facility maintains a Title V Air Permit for

the operation of the landfill gas management collection system. An approved Environmental Monitoring Plan exists for groundwater, surface water and landfill gas that specify the requirements for sampling, analytical parameters, regulatory limits of parameters and reporting requirements. The County Landfill also maintains a Stormwater Pollution Prevention Plan, County-issued wastewater discharge permit, and a secondary scrap tire collection license. The Landfill Gas-to-Electricity facility located on the landfill campus maintains its own Title V Air Permit.

Material collected by the County or its contractors is managed at the County's Recycling Centers, County Landfill, or at other acceptance facilities that have contractual relationships with the County. Other facilities, independent state agencies and contractors that are referenced in this Plan that provide services to manage County-generated recyclables and solid waste must comply with the specific Federal, State and Local regulatory requirements for their specific material acceptance, handling, processing or disposal operations.

5.4 Priority 3 - Regional Partnerships

The County is responsible for providing adequate recycling and solid waste management services and facilities to meet the present and future needs of its residents and customers. Regional approaches to recycling and solid waste issues can often supplement local efforts and has gained popularity in the United States. The advantages of large scale facilities, the limited number of available industrial use sites, and population growth that is not influenced by municipal boundaries makes regional partnerships for recycling and solid waste services attractive.

The County provides recycling and disposal services for single stream recyclables, yard waste, other recyclable items and solid wastes at the County's three (3) Recycling Centers and the Landfill. The County has also acquired additional resources and

services to meet its recycling and solid waste management needs through regional partnerships, which are previously described in the Plan, as referenced below:

- In Chapter 1, the County identified a variety of in-County resources and regional agencies as well as the mechanisms to obtain such recycling and solid waste management services.

The County plans to be an aggressive leader in promoting continued regional partnerships. However, if partners, jurisdictions or agencies are not able to enter into long-term waste disposal or recycling arrangements, the County will seek the best market pricing, conditions and alternatives that are in the best interests of the County. As the County's needs change over time or as other opportunities arise, existing programs and regional partnerships will be thoroughly evaluated to seek long-term options for recyclables processing and waste disposal. Modifications to existing regional partnerships or newly proposed regional partnerships will be reviewed for consistency with the current recycling and solid waste management goals and policies of the County.

5.5 Priority 4 - Recycling, Waste Diversion and Landfill Preservation

The County strategy will remain to recycle (and compost yard waste) first, divert trash out-of-County, and preserve the life of the County Landfill. The County will continue the development of initiatives and programs to support this strategy. The Recycling Centers and the Landfill will operate in a manner that will maximize the conservation of landfill capacity throughout and beyond the succeeding ten (10) year planning period.

5.5.1 Recycling

Through the implementation of residential curbside recycling and other County recycling and waste diversion programs, the County exceeded the 20% recycling mandate in 1994 per the 1988 Maryland Recycling Act (MRA). In 2012, the Maryland General Assembly passed House Bill 929, establishing a mandate that

each County with a population greater than 150,000 must include a provision for recycling at least 35% of solid waste generated in their County within their solid waste management plan. The County, through its comprehensive recycling initiatives and programs, exceeded the 35% mark in 1997 and has sustained a rate greater than 35% for each successive calendar year. The details to support the County's success are in the Annual MRA report provided to MDE by the County, which stated the County had an MRA recycling and waste diversion rate of 51.17% in 2011. A listing of the County's MRA recycling rate for the last 20 years is provided within **Appendix B, Table 4-2**.

Although the County has exceeded the State's mandated recycling goals, the County continues to set higher standards to recycle more each year. Enhancements to the current recycling and waste diversion programs as well as new initiatives and programs have been implemented to increase the County's recycling rate. Such programmatic activities have included:

- Move to single stream recycling of paper, plastic, metal and glass and expansion of curbside collection service to include bulky recyclable items.
- Allowed use of multiple recycling containers and larger carts by residential curbside customers.
- Converted to once-a-week residential collection of trash in June 2012 to compliment weekly recycling and yard waste collection.
- Sponsoring Community Clean-up events that provide opportunities to recycle scrap metal.
- Offer full service homeowner drop-off locations at three (3) Recycling Centers which includes electronics recycling.
- Weekly recycling pick-up at County parks and County offices through our County Office Recycling Program (CORP).
- Growing a small business curbside recycling and waste diversion program.

- Established a comprehensive recycling campaign for County residents including **RECYCLE.MORE.OFTEN** and **RECYCLE.MORE.HERE**.
- Provide support for commercial recycling in the Anne Arundel County business community.
- Recycling in public schools and the Community College.

The materials accepted for recycling and waste diversion through various programs managed by the County are identified in Section 3.7 of this Plan.

The County regularly conducts research to identify opportunities to recycle additional materials. These opportunities are considered when they are sustainable, provide meaningful waste reduction or increased operational efficiency, generate revenue, or avoid cost.

Continuous Improvement of the County Recycling and Waste Diversion Program

The County's residential curbside recycling rate has steadily increased over the last five (6) years (**Appendix A, Figure 3-7**). The increase is attributed in part to a comprehensive recycling marketing campaign initiated in the County during the last quarter of FY08. To help achieve the County's goal, new initiatives and programs will need to be developed to encourage the capture of more recyclables, adding new recyclable items, and increased public education and outreach. Such activities will be evaluated annually along with the availability of reliable end markets, citizen acceptance, customer service and cost-effectiveness.

Based on its work to identify additional recycling opportunities, the County has identified the following items for evaluation during the ten (10) year planning period:

- Expanding competition for the sale of existing commodities to garner higher sales prices.
- Recycling carpet materials and textiles.
- Organics collection and Regional composting of food waste within the existing curbside collection parameters and the limits of affordability.
- Apartment Building and Condominium Recycling Program – In April 2012, The Maryland General Assembly passed House Bill 1, requiring recycling in all apartment buildings and condominiums that contain ten (10) or more dwelling units. The law took effect on October 1, 2012. Details on how the County will administer this program are included in **Appendix E.**

Waste Reduction and Reuse

In conjunction with the recycling efforts described above, the County will continue to encourage waste reduction and reuse activities. Waste reduction is an activity that results in a reduction in overall waste generation. It may also result in a reduction in the amount of toxicity in the solid waste. Waste reuse is an activity that results in solid waste materials, which would otherwise be discarded being repurposed for alternative or beneficial uses. For example, thousands of tons of clean stone, concrete rubble, brick and block were used to build the new perimeter road around Cell 9 at the County's Landfill in 2012.

The County makes a concerted effort to regularly communicate with County residents and businesses regarding the importance of waste reduction and reuse. The County will provide information on resources available to residents and businesses that are interested in making an effort to reduce and reuse. This information along with other related communication and outreach activities all support waste reduction and reuse. These activities are key components of the County's Integrated System and Solid Waste Management Strategy.

5.5.2 Waste Diversion

The diversion of waste from the County Landfill is an integral component of the County's Solid Waste Management Strategy. Waste is currently diverted to the Annapolis Junction Transfer Station.

The County's contract with Annapolis Junction Transfer Station extends through June 2023. The County plans to continue diverting waste to the transfer station until at least 2023. Any change in the practice of waste diversion would require that waste be directed to the County Landfill, resulting in the County Landfill filling faster than planned. Should affordability concerns limit the County's ability to continue this practice, waste will be directed to the County Landfill.

5.5.3 Landfill Preservation

In addition to recycling and waste diversion, and to the greatest extent practicable, landfill preservation is a County goal reflected in its Solid Waste Management Strategy.

The County will continue to evaluate options to conserve space in the County Landfill, including pursuing 1) advancements in compaction equipment and GPS technologies; 2) affordable alternatives to the existing systems that may become available, 3) mining of old cells to generate new landfill capacity; and 4) additional advancements in recyclable material processing technologies that could allow more items to be removed from the waste stream and recycled.

The recycling, waste diversion and landfill preservation activities set the framework for the current waste disposal area (Cell 8) of the County Landfill, and they also establish the strategy for waste disposal through the active life of the County's last waste disposal area (Cell 9). Cell 9 is projected to be full in 2041. Maintaining and improving upon this operational strategy is critical to meeting the current and future waste disposal needs of the County.

5.6 Priority 5 - Collection and Management of Recyclables and Solid Waste

Residential curbside collection, homeowner drop-off, bulky item collection and community cleanup events are County services where recyclables and trash are collected. Recyclables and trash are also collected at the County's three (3) Recycling Centers and at the County Landfill. Other recycling and disposal facilities employed by the County include Waste Management/Recycle America's processing facility in Elkridge, MD, Prince George's County Yard Waste Composting Facility, Topsoil Etc. and Waste Management of Maryland, Inc.'s Annapolis Junction Transfer Station.

During the previous planning period the County upgraded the Northern, Central and Southern Recycling Centers to enhance efficiency and provide more opportunities for segregating materials for recycling, recovery and reuse. The County will continue to review operations and implement upgrades to the Recycling Centers and the County Landfill as necessary to maintain excellent customer service, full regulatory compliance, and to support the goal of increased recycling.

5.6.1 Residential Curbside Collection of Recyclables and Solid Waste

The County will continue its comprehensive collection systems for recycling and solid waste that are cost-effective, safe and sustainable over the ten (10) year planning period.

The County contracts with private haulers in each of fifteen (15) collection service areas. Contracts provide for once-per-week collection of recycling, yard waste and trash. Bulky waste items are collected as part of the normal trash collection service. Curbside recycling service is also available to small businesses, certain County offices, and County parks. The County provides recycling containers (18-gallon, 32-gallon) and carts (65-gallon) for its residential customers.

5.6.2 Homeowner Drop-off of Recyclables and Solid Waste

The County offers a full-service County Landfill and three (3) Recycling Centers (Central, Northern and Southern for residents that prefer to drop-off recyclables and solid waste at its facilities. In addition, the Recycling Centers and Landfill accept C&D Debris and land clearing debris, which includes yard waste material.

5.6.3 Homeowner Drop-off of Household Hazardous Waste

The County offers single day collection events for household hazardous waste. The locations alternate among the Landfill and the Northern and Southern Recycling Centers during the months of April through October. In 2012, the County reduced the frequency to six (6) collection events based on a review of historical customer usage.

5.6.4 Collection Procedures

The current methods for residential curbside collection, homeowner drop-off at the County's Recycling Centers and household hazardous waste collection events have proven to be effective and will be continued by the County. To improve collection route efficiencies, the County reconfigured the collection areas. To supplement the current collection practices, the County has identified several areas for potential improvement and implementation of additional collection measures, which include:

- Monitor growth in collection service areas and reconfigure as required.
- Continue outreach to better educate residents regarding curbside recycling and waste collection requirements.
- Evaluate the use of alternative fuels to power collection vehicles to increase efficiencies and reduce carbon footprints.
- Track the development of additional material recycling and waste diversion programs and material acceptance facilities in Maryland.

- Track the development of single stream recycling collection and processing programs in Maryland.
- Continue to obtain competitive bids for comprehensive curbside waste and recyclables collection, processing and disposal services.

5.6.5 Processing, Beneficial Use and Disposal of Recyclables and Solid Waste

The County provides processing, beneficial use and disposal for materials collected at the three (3) County Recycling Centers and the County Landfill. Single stream recyclables including paper, plastic, metal and glass, leaves and grass, corrugated cardboard, electronics and scrap metal, used oil, and antifreeze are processed and marketed to provide a revenue stream to supplement the Solid Waste Enterprise Fund. Rubble is used to reduce the need to purchase virgin materials for landfill road construction. Landfill gas is captured and used as fuel to generate electricity. Electricity sales provide our newest source of revenue within the Solid Waste Enterprise.

County-generated solid wastes are disposed at the King George County, VA landfill or the County Landfill.

5.6.6 Management of Commercial, Industrial and Institutional Wastes

The commercial sector manages the collection, recycling, and disposal activities for commercially generated solid waste and recyclables. Commercial waste sources include waste from businesses, offices and industry. The vast majority of commercial waste generated in the County is disposed outside of the County's system. Commercial waste delivered to the County Landfill represents a small fraction of the total commercial waste in the County. The County does not intend to interfere with commercial recycling and waste management activities; however technical assistance is provided upon request.

5.6.7 Management of Controlled Hazardous Substances

Commercial, industrial and institutional facilities in the County that generate, store, handle, transport and dispose of controlled hazardous substances, including special medical wastes, are regulated by MDE. They maintain responsibility for complying with applicable regulations. The County neither accepts controlled hazardous substances or special medical wastes at any of its facilities or at its household hazardous waste collection events.

5.6.8 Management of Other Wastes

The County manages a variety of miscellaneous or special wastes. These wastes and materials are identified below.

- **Bulky Items** – The collection of bulky items will continue to be provided by the County as part of the curbside collection service, and the County will continue to collect bulk metal through scheduled residential collections. Community cleanup events involve bulky trash items, and some events provide scrap metal recycling as well. Residents will continue to have the ability to drop-off such items at the Landfill or the three (3) Recycling Centers. Liquid refrigerants will continue to be removed from white goods prior to shipment to scrap metal recyclers.
- **Abandoned Vehicles** – The County Police Department's Traffic Safety Section and Abandoned Auto Unit will continue to handle all abandoned vehicles located within the County. Private certified automobile wreckers and scrap metal processing companies will also continue to be used to tow the vehicles for recycling, processing, or disposal.
- **Vehicle Tires** – Scrap tires will continue to be prohibited for disposal in the County Landfill. The County will continue to accept vehicle scrap tires at the Landfill and its three (3) Recycling Centers in accordance

with the provisions of the County Code. The County holds a vendor contract to haul scrap tires from the County Landfill to a licensed recycling facility.

- **Dead Animals** – The County’s Animal Control Division will continue to use a private vendor for the disposal of animal carcasses. Deceased pets will continue to be managed at veterinary hospitals within the County.
- **Used Oils and Antifreeze** – Waste oils, cooking oils, and automotive antifreeze will continue to be accepted for recycling at the County’s three (3) Recycling Centers. Other private collection sites in the County are expected to continue this service as well.
- **Wastewater Treatment Biosolids, Sludges and Septage** – With respect to sewage sludge, biosolids and septage, the Department of Public Works’ Bureau of Utility Operations will continue to be responsible for treatment, reuse and disposal through a private contractor. Activities will be conducted in accordance with the specific material management plans for sewage sludge, biosolids and septage as included in the Master Plan for Water Supply and Sewerage Systems. Specified methods of material management will continue to be in effect until alternative measures are developed.
- **Pollution Control Device Residues** – Depending upon the type of captured material, the residues captured by pollution control equipment will continue to be disposed by landfilling, reused as structural fill, soil amendment or aggregate material, or recycled as allowed by regulation and ordinance.
- **Litter** – Litter collection will continue to be managed through the County Department of Public Works’ by roadside cleanup and the support of community cleanup events.
- **Recreational Waste** – Waste generated at County Department of Recreation and Parks facilities will continue to be collected and disposed by a commercial hauling company. Woody debris will

continue to be chipped. Recycling will continue through WMS curbside collection, dumpster collection service or drop-off at a County facility.

- **Other Wastes Not Managed by the County** – There remain waste materials generated within the County that the County does not directly manage. Some of these materials include:
 - Agricultural Residues – the management of Agricultural residues will continue to be the responsibility of the farming community or the landowner that generated the material. These materials can be returned to the soil in an environmentally sound manner or managed through a nutrient management plan, which are both considered best management practices. Assistance is available from the Anne Arundel County Soil Conservation District and from Agricultural Extension Agents.
 - Soils and other materials contaminated from spills or releases – MDE regulates the disposition of these materials on a case-by-case basis, and with written documented approval by MDE, these materials may be accepted for disposal at the County Landfill. The preferred practice for disposal of these special wastes will continue to be at privately owned and operated treatment or disposal facilities. However, acceptance at the County Landfill will be considered in cases where MDE favors such an approach.

5.7 Priority 6 – Operational Enhancements and Alternatives

As recycling and solid waste management programs evolve, additional and potentially more stringent Local, State and Federal laws and regulations may be promulgated. To meet future requirements, the County's programs must be flexible and adaptable. The assessment in Chapter 4 of this Plan identified operational and technology-based enhancements and alternatives to the existing recycling and solid waste management systems.

The enhancements and alternatives are aimed at maximizing existing resources, improving operational efficiencies, further extending the life of the County Landfill, and identifying waste disposal methods other than landfilling. The County's existing systems may become further diversified as a result. These enhancements and alternatives to the existing systems are critical path items, as future recycling and solid waste management programs and facilities can take up to 10-15 years to implement from concept through start of operation.

Enhancements to the existing recycling and solid waste management systems may include the following:

- Expanded residential curbside and homeowner drop-off recycling and waste diversion programs.
- Expanded recycling at the County Landfill.
- Expanded County-owned and managed Yard Waste Composting Facility.
- Operational improvements and efficiencies at the County Landfill.
- Increased waste diversions to Private Regional Transfer Stations.

Future opportunities could also include:

- County-owned and managed Recycling Facility.
- Regional or County-owned and managed Waste-to-Energy Facility.
- Regional or County-owned and managed Organics (Food Waste) Composting Facility.
- Waste Mining at the County Landfill.

The County will continue to evaluate and utilize services and facilities that can accommodate changes in operational, regulatory and policy requirements, especially with respect to recycling and solid waste acceptance that supports the County's existing systems. Enhancements to the existing system will be reviewed for compatibility with existing programs and facilities.

For each new or existing service, facility, or planning decision, the County's evaluation should be based on achievement of the following:

- Protecting public health and the environment.
- Conserving natural resources.
- Preserving remaining County landfill capacity.
- Offering quality customer services.
- Controlling costs.
- Offering comprehensive and efficient services.

Any modification to an existing service or facility as well as any implementation of a new service or facility will be reviewed for consistency with the County's recycling and solid waste management goals, objectives, and the policies of the County.

5.8 Priority 7 - Future Landfill Life and Capacity

A fundamental component of the County's Integrated System and the Solid Waste Management Strategy is to reduce the amount of waste placed in the County Landfill. This is accomplished through implementing progressive recycling and waste diversion initiatives and programs, which are essential to meet the current goals and needs of the County. Additionally, the County must also plan for and address the long-term solid waste processing and disposal capacity needs of the County. In order to address these long-term needs, the County will:

- Perform annual site surveys and airspace calculations to project the remaining site life and capacity of the County's existing (Cell 8) and future (Cell 9) disposal areas.
- Identify and evaluate measures to increase the remaining site life and capacity of the County's existing (Cell 8) and future (Cell 9) disposal areas.
- Plan for operational transition when Cell 9 is commissioned and Cell 8 is closed.

- Evaluate the development of new technologies and waste handling facilities at the current landfill site.
- Assess the feasibility of locating the next solid waste management facility in other areas of the County.

5.8.1 Remaining Life and Capacity Projections for the County's Landfill

The Landfill opened in September 1975 and since that time seven disposal cells have been filled. The County is currently filling the eighth cell (Cell 8) and is moving forward with the construction of the ninth and final cell (Cell 9). As of January 2013, Cell 8 was approximately 87% filled.

An analysis is performed each year to determine the remaining capacity of the landfill. Findings derived from this analysis are included within the County's Annual Report. This is a requirement of the Landfill's Refuse Disposal Permit 2012-WMF-0240 issued by MDE.

Cell 8 and Cell 9 Projections

At the current projected annual fill rate, Cell 8 is projected to last until 2017 as presented in **Appendix A, Figure 5-1** and **Appendix B, Table 5-1**. Cell 9 is projected to last until 2041. Life estimates are revisited each year as part of the Annual Report process which is normally completed in June of each year.

5.8.2 Transition of Waste Disposal Operations from Cell 8 to Cell 9

As Cell 8 approaches final permitted elevations a transition of landfill operations will occur into the County's final remaining waste disposal cell. The County has evaluated and planned for the necessary activities that must occur to ensure an environmentally sound, controlled and fully compliant transition of waste disposal cells. The transition of operations from Cell 8 to Cell 9 will include an overlap of

at least six (6) months with Cell 8 landfill operations. During the transition, the County will provide for uninterrupted services to its residents and customers.

As Cell 9 is the last permitted waste disposal area in the County, waste reduction, reuse, recycling, and enhancements and alternatives to the existing recycling and solid waste management systems are critical to minimizing the amount of waste in the County that requires disposal.

5.8.3 Increasing the Remaining Capacity at the County Landfill

Aside from recycling and waste diversion activities that can reduce the amount of solid waste disposed of in the County's Landfill, additional measures can be used to gain capacity and prolong landfill life. Some of these measures are identified in Section 5.5.3. These measures may be implemented without modification to the permitted facility design.

Alternately, permit modifications to the existing permitted design or waste disposal footprint of a landfill facility may provide feasible options to gain additional landfill capacity and prolong landfill life. Permit modifications require comprehensive operations reviews, engineering analyses, public participation, and regulatory approvals. Overall, permit modifications require significant advanced planning, the alignment of goals, objectives and policies, and time. The time to secure regulatory approvals will vary based on the type and degree of proposed modifications to the existing facility permit and how such modifications will impact residents, other interested parties, or align with regulatory agency standards.

5.9 Priority 8 - Constituent Communication and Outreach

The County has focused on developing effective methods of communication and outreach to better educate and share information with residents. These efforts are designed to:

- Educate residents and customers on how to maximize the capture of recyclables through segregation, collection and drop-off, in order to reduce the amount of solid waste that needs to be disposed of in landfills.
- Increase recycling participation.
- Maintain comprehensive and accurate data tracking and reporting.
- Evaluate the delivery of residential curbside collection services and ensure high-quality collection through monitoring Contractor performance.
- Ensure the cost-effective management of collected recyclables.
- Manage the level of recycling services to create program-wide standards.

5.9.1 Waste Reduction and Reuse Initiatives

Currently, MDE provides reduction credits to counties for implementing waste reduction and reuse activities. Credits are applied during computation of the MRA recycling rate. Accordingly, the County has dedicated a portion of its outreach plan to waste reduction and reuse to earn the reduction credits. The County will continue existing programs and complete the following new activities during the ten (10) year planning period, subject to annual budget appropriations:

- Distribute direct mail publications exclusively promoting grass-cycling and home composting to at least 30% of all single family households.
- Promote composting in at least three (3) ways: within literature such as recycling guidelines, in newspaper advertisements, and during workshops or special events.
- Implement a recycling and waste reduction and reuse curriculum in public schools and colleges.
- Expand multi-family unit recycling and waste reduction and reuse education and outreach.
- Distribute backyard composting bins.
- Conduct recycling, waste reduction and reuse training sessions for County employees and Departments.

- Include a waste reduction page on the County aadpw.org website.
- Develop and implement a referral system for residents, businesses and organizations for material exchange programs.
- Include a significant message about waste reduction in County office recycling and waste diversion programs.
- Conduct recycling and waste reduction and reuse exhibits at county fairs or similar events three (3) times yearly.
- Host a recycling and waste reduction and reuse event for the general public.
- Advertise public workshop events demonstrating proper food waste composting techniques.
- Maintain a County procurement policy advancing the purchase of materials that promote reduced waste generation.
- Incorporate green building goals/requirements in County construction, remodeling and maintenance bid specs and contracts.

5.10 Priority 9 - Revenue and Beneficial Use

The County pursues opportunities to generate revenue through the marketing and sale of recyclable items and the beneficial use of discarded materials through reuse. This has included:

- Marketing single stream recyclables including paper, plastics, metal and glass.
- Baling and marketing corrugated cardboard.
- Segregating and marketing scrap metal including aluminum, steel, and mixed scrap metal of all types.
- Marketing electronics including computers, televisions, and other electronic devices.
- Processing yard waste and wood debris for the production of the highest quality compost and topsoil for beneficial use.

- Segregating rubble including brick, block, stone and rock for reuse.
- Use of landfill gas, a renewable fuel, in the production and sale of electricity.

New initiatives that are in the planning stages include:

- Use of landfill gas to create compressed natural gas (CNG) fuel for vehicles.
- Use of County Landfill property for a solar array to generate power for the buildings on the County Landfill campus, and to provide power for buildings adjacent to the closed Glen Burnie Landfill.

Existing and future revenue streams from these activities will assist the County in sustaining the Solid Waste Enterprise Fund. As the County's recycling success grows, the revenue streams from these activities have the potential to expand as well. A more detailed discussion of the activities follows.

5.10.1 Marketing Single Stream and Segregated Drop-off Recyclables

The majority of single stream recyclables are collected at curbside and transported to the privately-owned and operated WMRA Facility for sorting and delivery to market. Single stream recyclables are also accepted at the County's three (3) Recycling Centers and transported to WMRA. Over 60,000 tons per year of County-generated, single stream recyclables are marketed. Each month the County receives a share of revenue from WMRA based on market pricing.

5.10.2 Segregating and Marketing Other Recyclables

To maximize revenue potential, the County will sell certain separated recyclable materials utilizing a spot market process. Materials are source separated by customers at each County facility. Materials such as cardboard, aluminum, and steel generate a higher unit price when sorted and marketed separately.

5.10.3 Marketing of Electronics

The County began recycling electronics including computers, televisions, monitors and other electronic devices in 2002. From 2002 to January 2011, the County paid for these services. In February 2011, a new electronics contract was secured. The new contract provides payments to the County for the electronics it collects.

5.10.4 Processing, Beneficially Using and Marketing Organic Materials

The County has a robust collection system for yard waste which includes service at curbside, at each of the County's three (3) Recycling Centers, and the County Landfill. Following collection, yard waste may be processed at one of several facilities including the County's Yard Waste Processing Facility, the Prince George's County Yard Waste Composting Facility, Topsoil Etc., or Recycled Green (refer to **Appendix A, Figure 5-2**). Yard waste managed by a private processor is transferred to a facility where on-site compost production occurs. The yard waste managed at the County's Landfill is processed into compost or utilized in a beneficial use capacity.

The County sells compost it produces from leaves and grass at its Yard Waste Processing Facility at the County Landfill. Other yard waste material consisting of brush, branches and limbs are ground into mulch at the County's Landfill and used in County projects. Occasionally and subject to availability, select logs are cut and provided to residents free of charge as firewood.

Through the development of the Cell 9 waste disposal area, a significant amount of soil will be excavated. A portion will be used in the landfill operation. The balance will be available for blending with organic materials to create a topsoil product.

The County will continue to evaluate other opportunities for producing products derived from natural wood waste or compost.

5.10.5 Processing and Beneficially Using Rubble and Rock

The County accepts C&D Debris including Rubble material at the Landfill and the three (3) Recycling Centers. The County separates materials such as brick, block and stone from C&D Debris. Rubble accepted at the County facilities is reused to build roads and for other construction projects, and reduces the need to purchase virgin materials.

In an effort to offset the capital and operating costs associated with the initial site development of the Cell 9 waste disposal area, the County stockpiled rubble for several years and used the material as the base for haul roads within the first phase of the Cell 9 development project.

Clean sandstone material excavated at the County Landfill is accumulated and used in DPW stream restoration projects across Anne Arundel County.

Rubble material received at County facilities and sandstone excavated through County operations will continue to be used in a beneficial manner. There may be opportunity in the future to process rubble into a salable product.

5.10.6 Production of Alternative Energy Sources

The decomposition of waste within the County Landfill produces landfill gas. With methane concentration of roughly 50%, landfill gas is a very good fuel source. Landfill gas will be generated in increasing amounts over the next few decades.

The 3.2 megawatt (MW) Millersville Landfill Gas-to-Electricity (LFGE) Facility commissioned in 2012 will continue to operate and convert landfill gas to

electricity. The LFGE facility provides revenue from electricity and renewable energy credit (REC) sales. This Facility produces enough electricity to power approximately 2,000 homes.

Additional landfill gas extraction wells were installed in Cell 8 in 2013. The County is planning a project to convert this additional landfill gas into compressed natural gas (CNG) fuel for vehicles.

Closed landfill cells represent large areas of land with very limited development potential. One creative reuse for such properties is the development of solar arrays to provide electricity.

The County is planning a project to develop solar arrays on the closed Glen Burnie Landfill and at the closed Cell 4 area of the County Landfill.

5.11 Priority 10 - Rates and Fees

Operations and Capital Investments for the County's recycling and solid waste management programs are funded through an Enterprise Fund. The Solid Waste Enterprise Fund supports all recycling, waste diversion, and disposal programs. No general tax dollars are contributed to the Solid Waste Enterprise Fund. Revenues are generated from various sources:

- Annual Solid Waste Service Charge - residential fees established in the County Code charged to households receiving curbside collection service.
- Landfill Disposal Fees – fees charged for the use of County facilities established in the County Code.
 - Charged to the commercial trash haulers using the County Landfill.
 - Charged to any customers delivering waste in a dump truck, flatbed truck, stake body truck, box truck, rental truck/trailer, or double axle trailer.

- Charged to customers delivering certain types of wastes.
- Sale of recyclables.
- Electricity and Renewable Energy Credit sales from the LFGE Facility.

Fees are the source of funding for all operating expenses, debt service payments and financial assurance contributions. Solid waste projects established through the Capital Improvement Program are financed through the sale of municipal bonds or annual Pay-As-You-Go appropriations within the Operating Budget.

Rate modeling and rate development strategies consider the future cost of programs, future capital needs, and the desire to keep a fund balance equivalent to a 10% operating reserve in any fiscal year.

In addition, to ensure compliance with the Financial Assurance requirements of Title 40 CFR Part 258, the County continues to use the EPA Local Government Test.

The FY14 residential rate charged to household customers receiving curbside collection is \$298/year. The following is a general breakdown of major programs supported by the charge:

Curbside Collections	\$ 160
Debt Service & Financial Assurance	\$ 32
Operate and Maintain Recycling Centers	\$ 29
Solid Waste Diversion	\$ 27
General Fund Payments & Miscellaneous	\$ 24
Operate and Maintain Landfills	\$ 19
Community Cleanups	\$ 7

The fee for waste disposal at the County Landfill remains at \$75.00 per ton as of July 1, 2013.

5.12 Priority 11 - Future Strategic Plans

Through years of planning, development, implementation and continuous improvement, the County has created solid waste management and recycling systems that are environmentally sound, efficient, sustainable and customer-oriented. A solid waste management strategy has been implemented that has extended the useful life of the landfill, delayed the need to site a new facility and expanded recycling and waste reduction activities across the County. A more diverse stream of revenue supports the Solid Waste Enterprise Fund. Managed control has been exercised over operational expenses. Together this has resulted in affordable rates for County customers. The County's landfill is a state-of-art facility maintained in a park-like setting. It is routinely used by regulatory agencies for training of new State inspection staff. Recycling and reuse activities at the landfill facility have been expanded over the years and include yard waste composting, topsoil manufacturing, segregation of all types of recyclables, and conversion of landfill gas to electricity. The goal of the County to minimize the amount of waste disposed to the maximum extent possible remains a theme in every program.

The curbside collection program has evolved over the years and is structured to maximize operational efficiencies, reduce costs and provide comprehensive services to County residents. Collection operations have been reduced from six (6) days to four (4) days each week. Holidays and inclement weather days no longer require customers to hold onto recyclables and trash until the following week. Bulky items, such as furniture and carpeting, no longer need to be scheduled for County pickup. These items are now collected on each collection day. The curbside recycling program no longer requires the segregation of recyclables for collection. As a result of emerging technologies and market development, the County was the first in Maryland to provide its residents with single stream recycling. Yard waste collection, once performed on a seasonal basis, is provided every week of the year. Significant improvements in recycling participation and waste reduction have allowed the County to convert to once weekly trash collection. The change has saved money, increased recycling, and reduced the amount of trash going into landfills.

In an effort to build on these successes, the County will:

- Develop new initiatives and establish programs to expand recycling and waste reduction programs at the County Landfill and Recycling Centers.
- Plan and implement service enhancements to improve efficiencies and increase material diversion rates.
- Plan and construct infrastructure upgrades to existing recycling and solid waste management facilities to insure full regulatory compliance, improve efficiencies and increase material diversion rates.
- Evaluate alternatives to the existing solid waste management and recycling systems to increase disposal capacity at the County Landfill.
- Evaluate alternatives to delay the need to locate a new waste management facility by preserving the County Landfill.
- Implement new and effective methods of public outreach and education to improve the level of service and increase recycling.
- Pursue innovative technologies and operational changes that have the potential to generate additional revenue streams for the Enterprise Fund.
- Perform comprehensive and thorough annual reviews of the residential rate structure to ensure that adequate funding exists to support the solid waste management and recycling programs and implement strategies to maintain cost-effective and affordable rates.

5.13 Priority 12 - Comprehensively Review and Evaluate Options for Future Disposal Facilities

The County will plan for the development of facilities that will meet the future needs of the County by ensuring full regulatory compliance, adequate disposal capacity, and maximized recycling opportunities.

5.13.1 Future Siting of County Waste Processing and Disposal Facilities

As discussed in Section 5.8.3, permit modifications to existing facilities require a significant amount of effort, coordination and lead time. The same is true for selecting and locating new waste disposal facilities such as a local or regional landfill, transfer station or waste-to-energy facility. It is likely that the acceptance and approval process for such new facilities will take longer than the permit modification process for existing facilities.

The acceptance and approval process for a new solid waste facility, regardless of type, is very complex and consists of several key elements (refer to **Appendix A, Figure 5-3**). A general description of these elements is provided below.

- Determination of Need – This determination would need to demonstrate that a deficiency exists within an existing solid waste disposal system and that there is not sufficient capacity to meet existing or emergent needs.
- Evaluating Technically feasible Options – a technical review of the County's needs, available options, infrastructure and site requirements, socioeconomic impacts, financial requirements, political ramifications, and other factors are evaluated. Recommendations are made and vetted among the approving agencies.
- Public Involvement, Review and Outreach – the involvement of the public and other interested parties and stakeholders may be initiated during the Determination of Need and Siting processes. Public comment periods and public hearings are typical requirements for locating a new solid waste disposal facility. Public comments are also typically received during a jurisdiction's annual budget process. Public outreach also may occur for the entire process of planning, siting, designing, permitting, constructing and operating a new facility.
- Selection in the Best Interest of County – After an identified need is examined and confirmed, technically feasible and realistic options are

listed and developed in concept, and the public has had the opportunity to be involved in the process through education, outreach, and public comment periods, a decision must be made in the interest of the County at-large.

- Siting – the siting process involves a detailed evaluation of a single or multiple sites for the potential facility. This evaluation includes, but is not limited to: a general description and basic design of the potential facility; the amounts and types of waste to be disposed; a proposed monitoring program; and an evaluation of facility's proximity and relationship to physical features such as water bodies, parks, roads, water supply systems, endangered or threatened species and their habitats, and historical structures. The siting process also considers local and regional land uses, geology and hydrogeology and the impacts that a facility may cause. Local and regional hydrogeologic investigations and groundwater monitoring may also be included in the siting process.
- Design and Permitting – following the siting process and selecting a final location, the facility must be designed and permitted in accordance with all Federal, State and Local solid waste management, environmental and related requirements to protect public health and the environment. All environmental media are considering during the design and permit process including groundwater, surface water, air, soil and stormwater. Detailed design schematics, construction specifications, operational procedures, monitoring requirements, a plan for constructing and financing the potential facility and measures to ensure its operation, long-term maintenance and potential closure or decommissioning must also be developed.
- Construction – following design and the receipt of permit approvals, facility construction may begin. Construction would be continuously monitored for compliance with the design and permit documents and to ensure protection of public health and the environment.

- Operation – upon completion of construction, the facility would begin operations in accordance with the applicable permits. Operations are subject to monitoring and reporting requirements based in law and regulation to protect public health and the environment.

To open a new solid waste processing or disposal facility, the County will have to consider a new waste disposal strategy, gain public and community acceptance, develop supporting contractual arrangements, and employ new qualified and skilled staff.

5.14 Other Plan Requirements

To operate in the State of Maryland, all solid waste management facilities are required to secure a Refuse Disposal Permit from MDE. Such facilities include: landfills, solid waste processing facilities, transfer stations, incinerators and waste-to-energy facilities. Proposed facilities for the acceptance of County-generated waste must also obtain zoning approval from the County Office of Planning and Zoning and be deemed in conformance with the County Solid Waste Management Plan. The County is required to recognize within the Plan any proposed solid waste disposal or acceptance systems or facilities. As previously mentioned in Section 2.6, this Plan shall not be used to create or enforce local land use and zoning requirements.

5.14.1 Proposed Private Waste Processing Facilities

Currently there are no proposed private waste processing facilities located in the County.

5.14.2 Proposed Private Waste Disposal Facilities

Currently, there are two (2) proposed private rubble landfills with permit applications under review by the MDE. These facilities are the Tolson & Associates Rubble Landfill and the Chesapeake Terrace Rubble Landfill. These proposed facilities have been in the permitting process for several years, and MDE has not yet rendered a decision on the issuance of Refuse Disposal Permits for either site. Tolson & Associates and Chesapeake Terrace were included in the 2003 Plan Update.

C&D Debris acceptance facilities (i.e. rubble landfills) are permitted to accept land-clearing debris, demolition debris, construction debris, asbestos waste, household appliances and white goods, brick, block, stone, and other processed debris. C&D Debris are materials generally considered to be non-hazardous, and

are generated as part of a construction or demolition project or from the renovation of a structure.

Tolson & Associates Rubble Landfill

Owner:	<i>Tolson & Associates, LLC (Capitol Raceway Promotions, Inc., JM Land Development Company, and Capitol Associates, LLC)</i>
MDE Permit:	<i>Permit Application Under Review by MDE</i>

The proposed Tolson & Associates Rubble Landfill is planned to be sited at the end of Capitol Raceway Road, Crofton, in Anne Arundel County, Maryland. The proposed rubble landfill is planned to be constructed adjacent to the closed Cunningham Rubble Landfill. The proposed site is bounded to the northeast by Four Season's Estates, to the west by the Little Patuxent River, to the southeast by Capitol Raceway Park and Evergreen Road, and to the north by the closed Cunningham Rubble Landfill. The proposed rubble landfill consists of an approximately 72-acre fill area on an approximate 184-acre site.

This facility's rubble landfill permit application is currently under review by MDE. If permitted, this facility would potentially provide an outlet for the recycling and/or disposal of County-generated C&D Debris.

Chesapeake Terrace Rubble Landfill

Owner:	<i>National Waste Managers, Inc.</i>
MDE Permit:	<i>Permit Application Under Review by MDE</i>

The proposed Chesapeake Terrace Rubble Landfill is planned to be sited at Patuxent and Conway Roads, Odenton, in Anne Arundel County, Maryland. The proposed rubble landfill encompasses an approximate 150-acre fill area on a 500-acre site. This facility's rubble landfill permit application is currently under review by MDE. If permitted, this facility would potentially provide an outlet for the recycling and/or disposal of County-generated C&D Debris.

CHAPTER 6

6.0 Reference Documents of the Plan

The following reference documents have been reviewed to collect and present information during the preparation of the Plan. The references to the documents are provided for information purposes.

- 1) Anne Arundel County – County Council, Resolution 7512 - Recycling at Convenience Centers, November 2012.
- 2) Anne Arundel County – Debris Assistance for Localized Events (DALE).
- 3) Anne Arundel County – Disaster Debris Management Plan, July 8, 2009.
- 4) Anne Arundel County – General Development Plan, April 2009.
- 5) Anne Arundel County – Master Plan for Water Supply and Sewerage Systems for 2013-2017, May 2013.
- 6) Anne Arundel County, WMS, Animal Carcasses (Dead Animals) Service Manual, March 11, 2011.
- 7) Anne Arundel County, WMS – Cell 8 to Cell 9 Transition Memorandum for the Millersville Landfill, January 27, 2010.
- 8) Anne Arundel County, WMS – FY09 Year End Report Revised, September 25, 2009.
- 9) Anne Arundel County, WMS – FY10 Year End Report Revised, September 21, 2010.
- 10) Anne Arundel County, WMS – FY11 Year End Report, October 24, 2011.
- 11) Anne Arundel County, WMS – FY12 Year End Report, dated October 26, 2012.
- 12) Anne Arundel County, WMS – Millersville Landfill – Cell 9 Disposal Area Planning Report, prepared by SCS Engineers, April 22, 2010.
- 13) Anne Arundel County, WMS – Millersville Landfill – Gas-to-Electricity Project Summary, July 2012.
- 14) Anne Arundel County, WMS – Millersville Landfill – MDE Annual Tonnage Report 2011, dated February 2012.
- 15) Anne Arundel County, WMS – Millersville Landfill – NSPS NESHAP Report, prepared by Barton & Loguidice, July 30, 2011.
- 16) Anne Arundel County, WMS – Plan Amendment/Revision to MDE, dated May 12, 2006.
- 17) Anne Arundel County, WMS – Plan Amendment/Revision to MDE, dated July 10, 2009.

- 18) Anne Arundel County, WMS – Plan Amendment/Revision to MDE dated August 6, 2010.
- 19) Anne Arundel County, WMS – Recycling Plan of Action, July 27, 2012.
- 20) Anne Arundel County, WMS – Residential Recycling Advisory Committee Report, December 2010, as transmitted on December 7, 2012.
- 21) Anne Arundel County, WMS – Transition Report for Managers and Supervisors, 2010.
- 22) Anne Arundel County, WMS – Webpage 2012.
<http://www.aacounty.org/DPW/WasteManagement/>
- 23) City of Annapolis – Draft Solid Waste Management Plan, August 20, 2012.
- 24) Code of Maryland Regulations (COMAR).
- 25) Environmental Article, Title 9, Subtitle of the Annotated Code of Maryland.
- 26) Maryland Department of the Environment – Permitted Natural Wood Waste, Rubble Landfill and Solid Waste Acceptance Facilities Lists.
- 27) Maryland Department of the Environment – Maryland Solid Waste Management and Diversion Reports: 2009 (Calendar Year 2008 Data) dated December 2009; 2010 (Calendar Year 2009 Data) dated November 2010; and 2011 (Calendar Year 2010 Data) dated November 2011.
- 28) Maryland Department of the Environment – Solid Waste Management Plan comment letter to the Anne Arundel County Department of Public Works dated August 26, 2013.
- 29) Maryland Department of the Environment – Used Oil Program Annual Report Calendar Year 2011 (Calendar Year 2011 Data), January 2012.








**Anne Arundel County
Ten Year Plan Update
2013-2023**

**Appendix A
Figures**

Council Districts

Solid Waste Management Plan

Council Districts

-  District 1
-  District 2
-  District 3
-  District 4
-  District 5
-  District 6
-  District 7

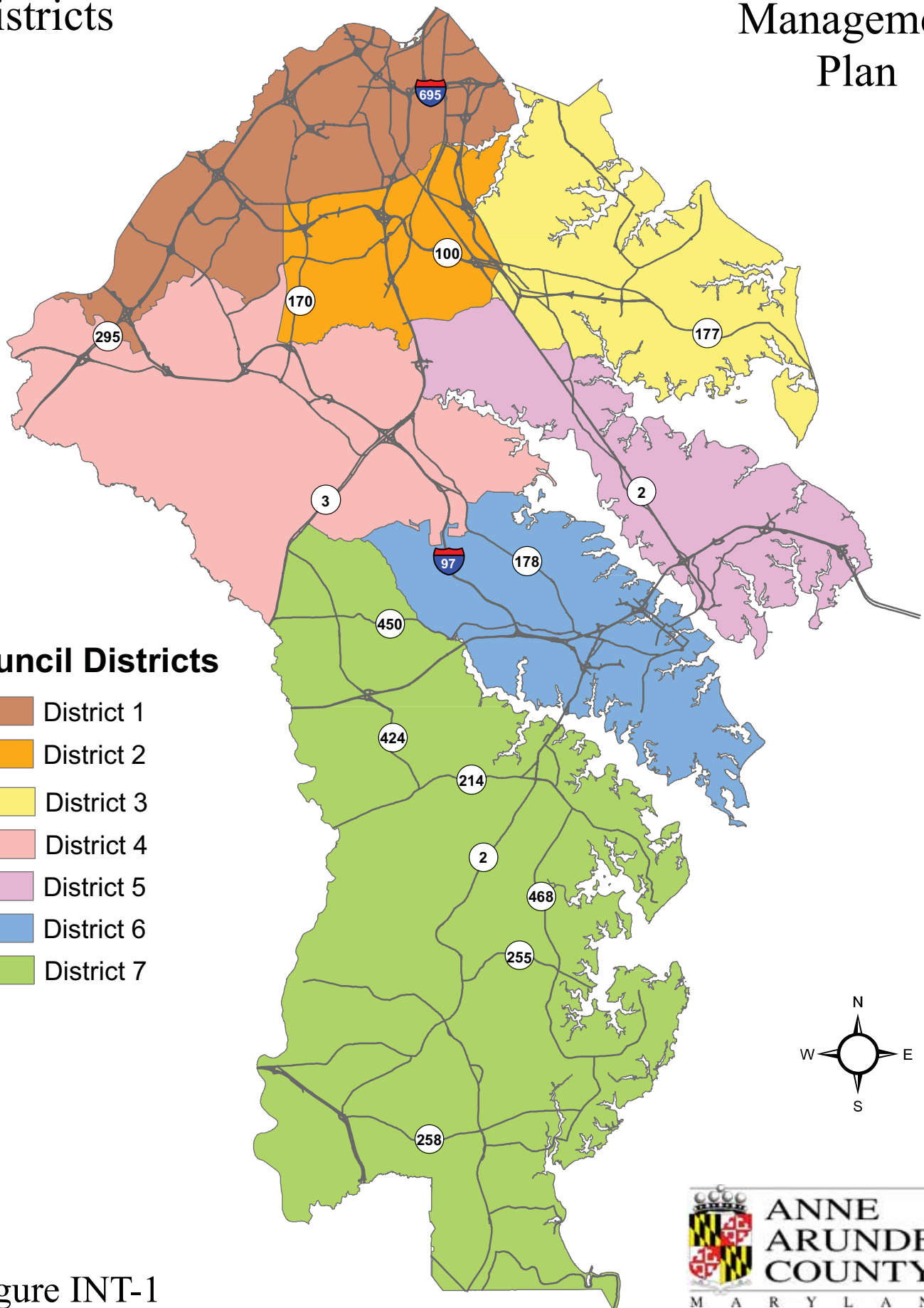


Figure INT-1

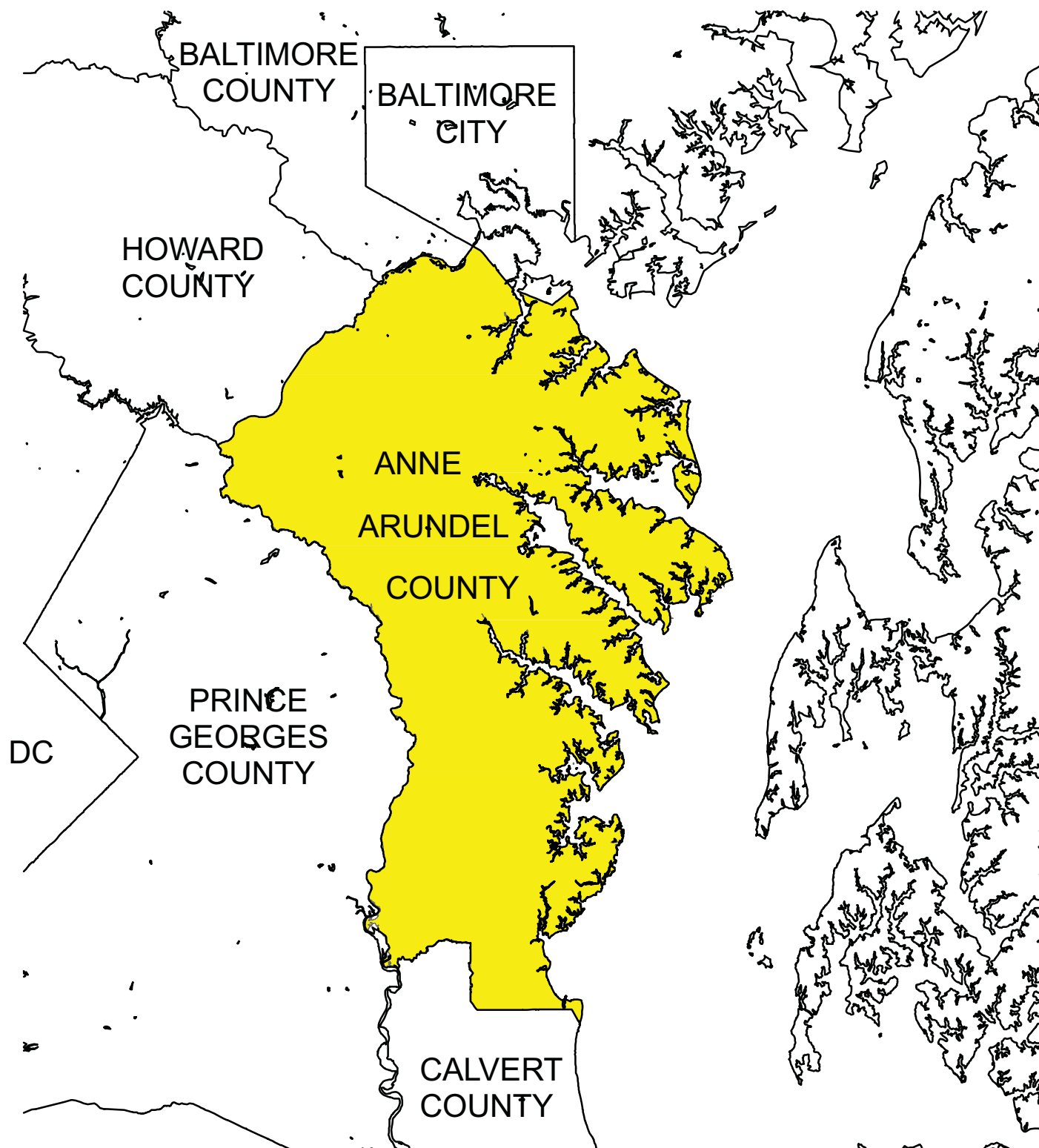
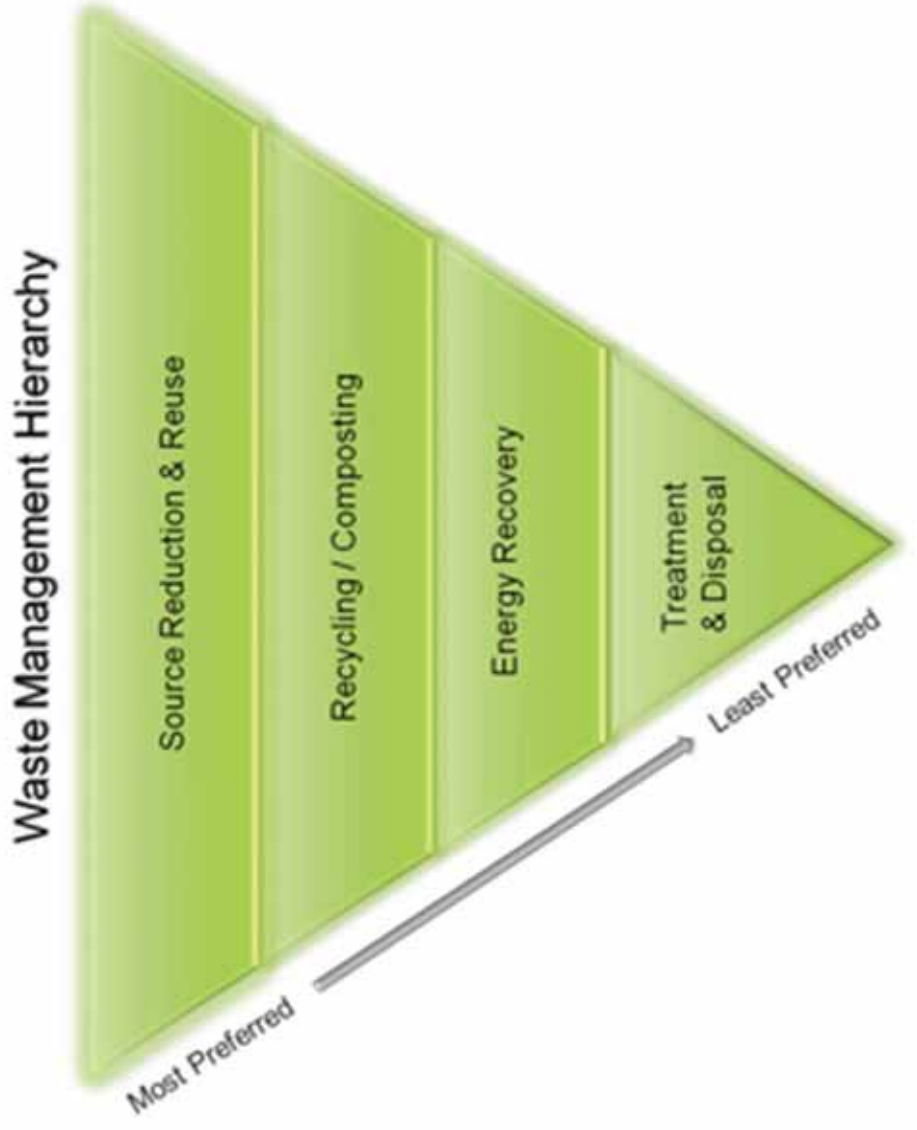


Figure INT-2

FIGURE INT-3

EPA WASTE MANAGEMENT HIERARCHY



Source: Environmental Protection Agency 2013
<http://www.epa.gov/osw/nonhaz/municipal/hierarchy.htm>

Recycled Paper

FIGURE INT-4
ANNE ARUNDEL COUNTY
FY 14 SOLID WASTE MANAGEMENT STRATEGY

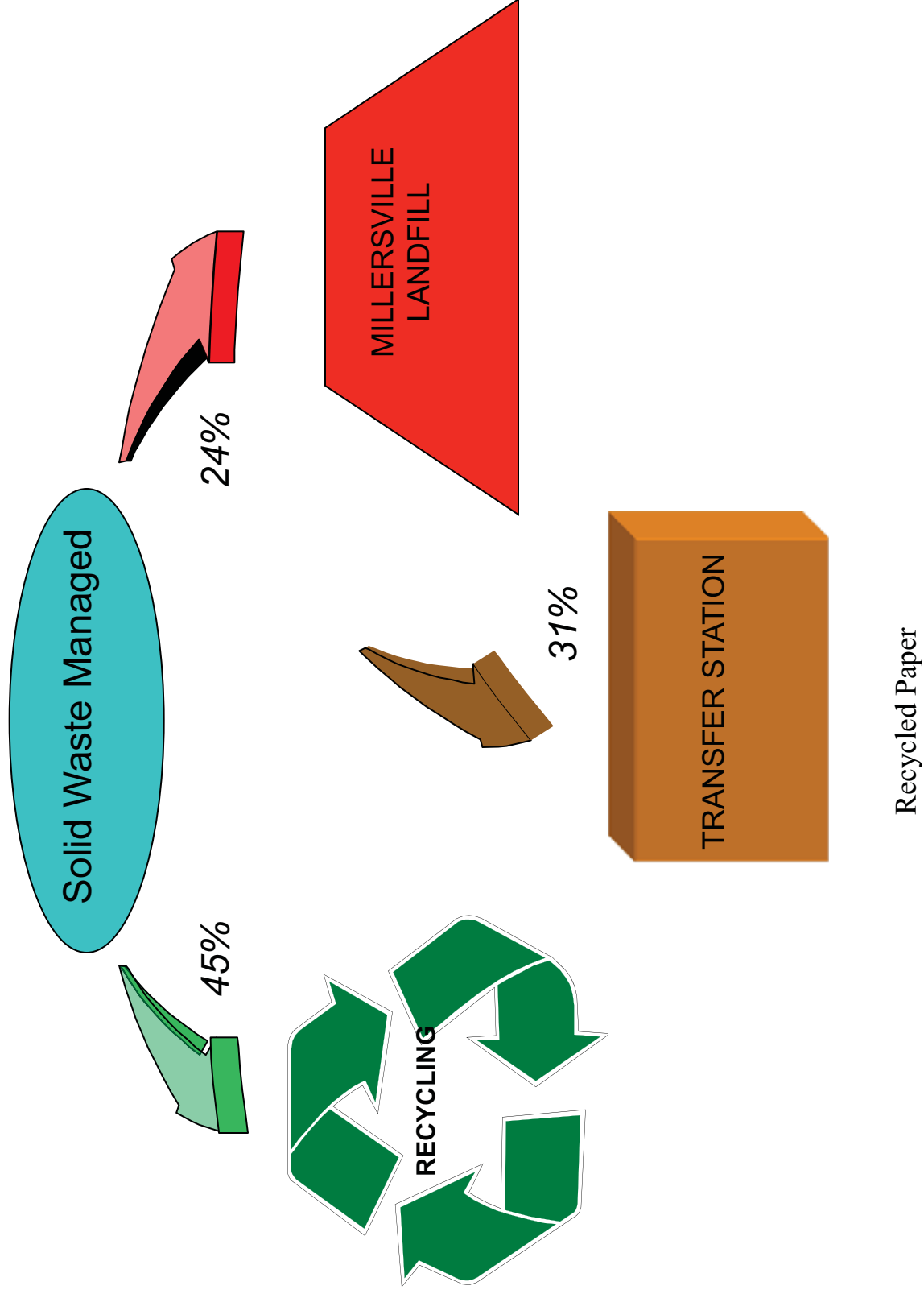


FIGURE 1-1
ANNE ARUNDEL COUNTY
EXECUTIVE BRANCH

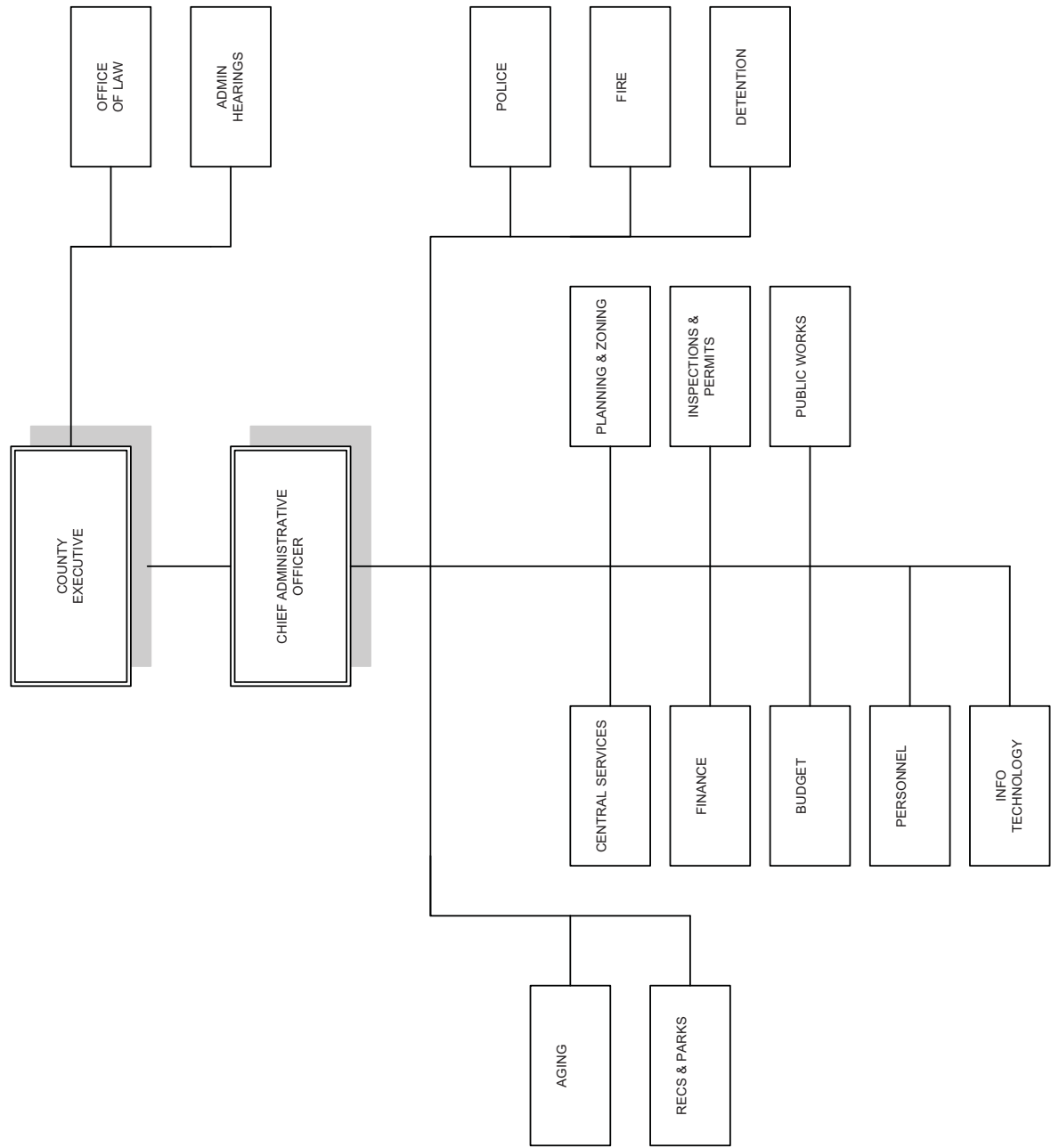
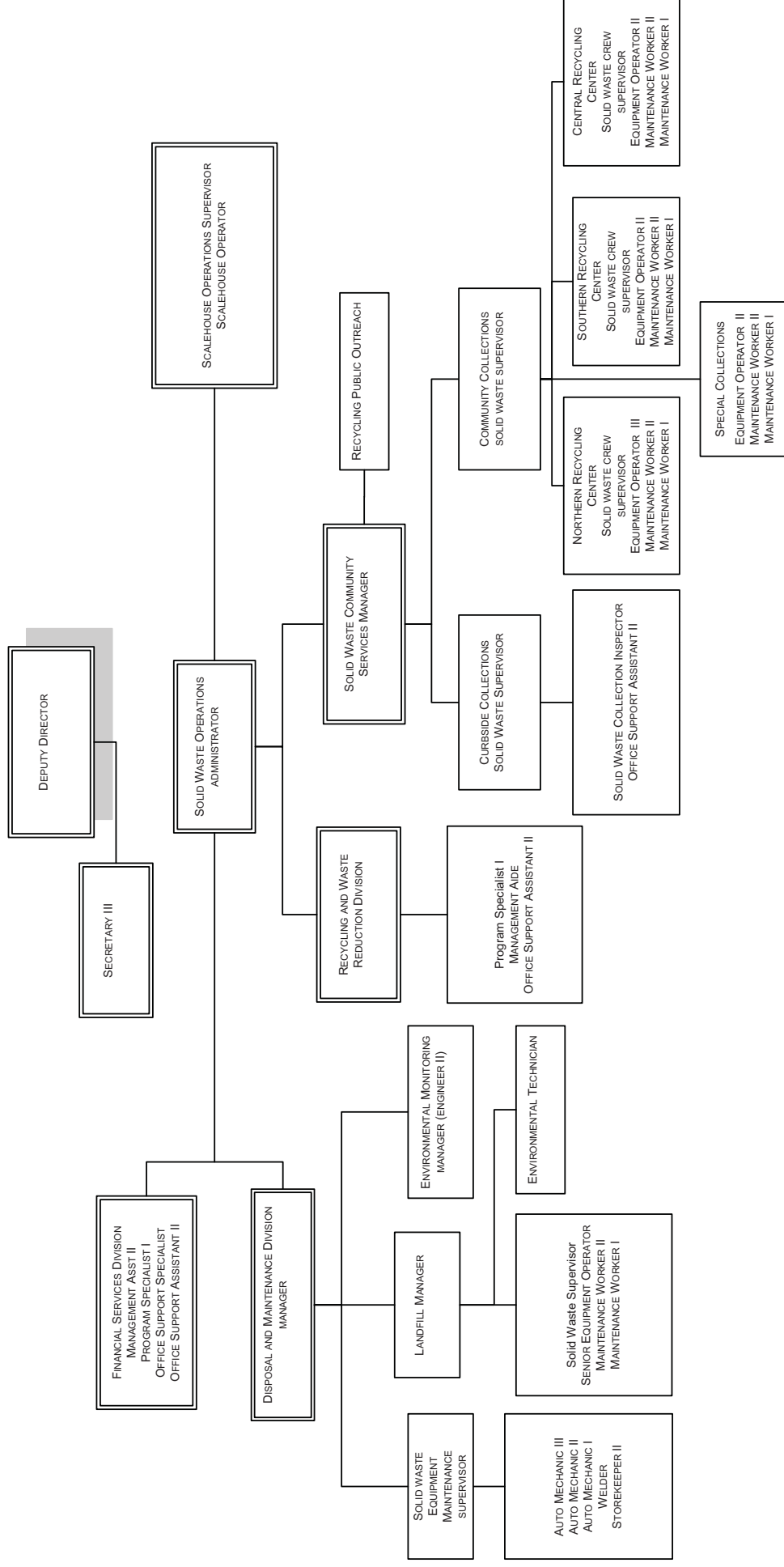


FIGURE 1-2
WASTE MANAGEMENT SERVICES
DEPARTMENT OF PUBLIC WORKS
ANNE ARUNDEL COUNTY GOVERNMENT



Incorporated
Municipalities

Solid Waste Management Plan

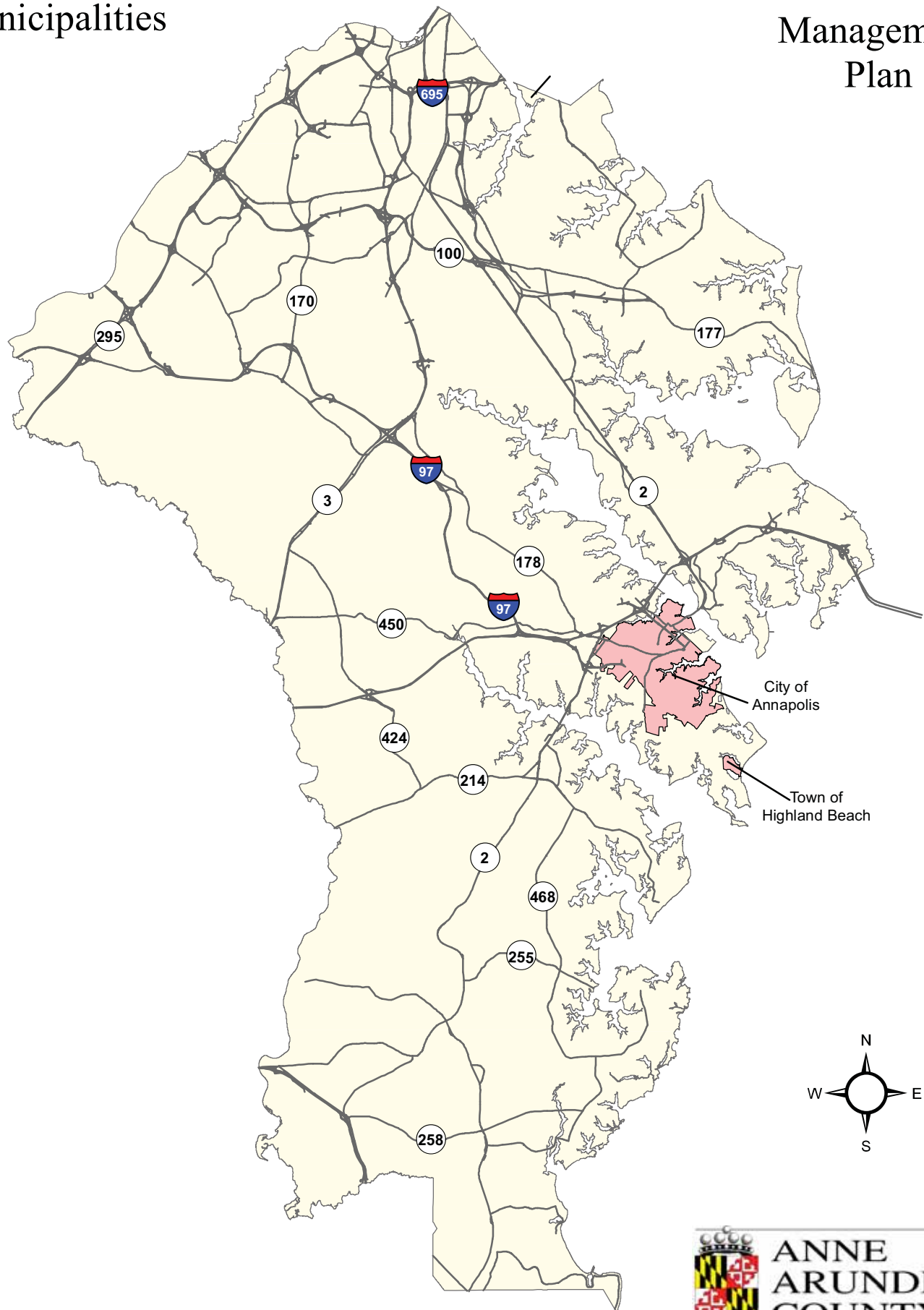


Figure 2-1

Federal and State Facilities

Solid Waste Management Plan

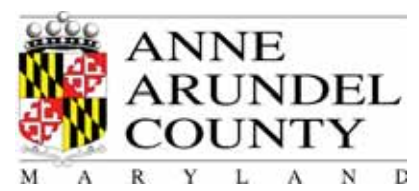
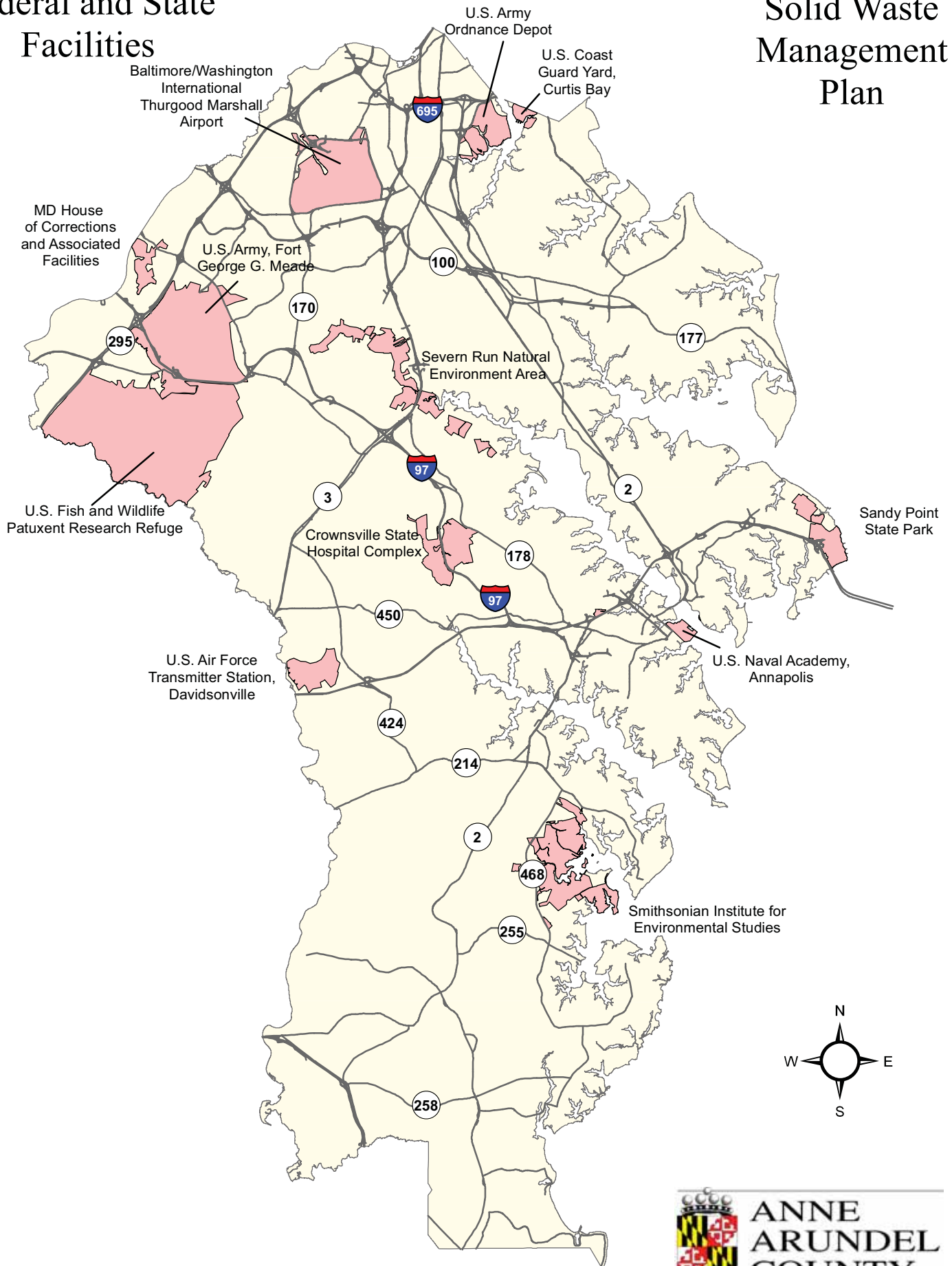
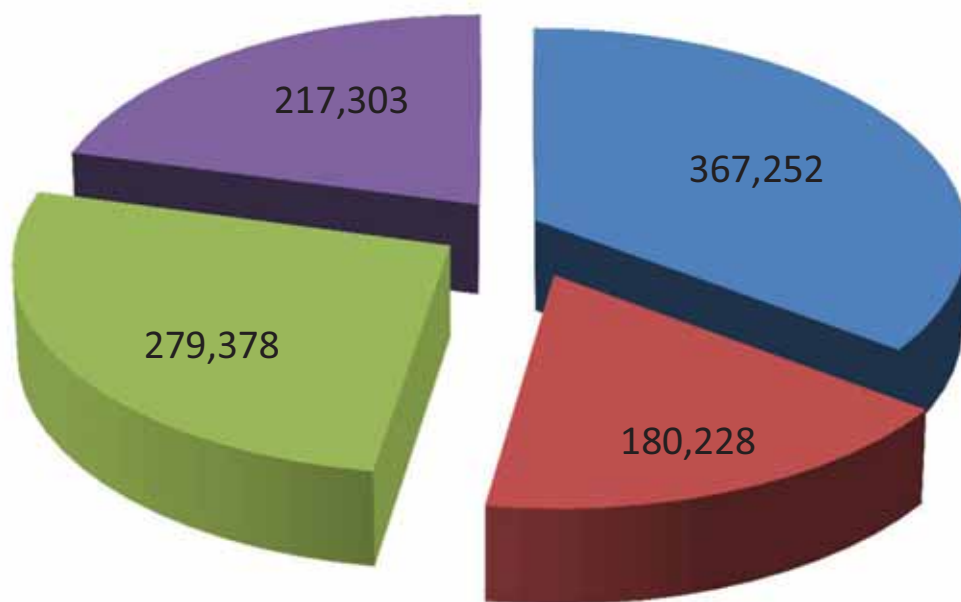


Figure 2-2

Figure 3-1
Wastes and Recyclables Handled in Anne Arundel
County, 2010 (from Table 3-1, tons and % of total)



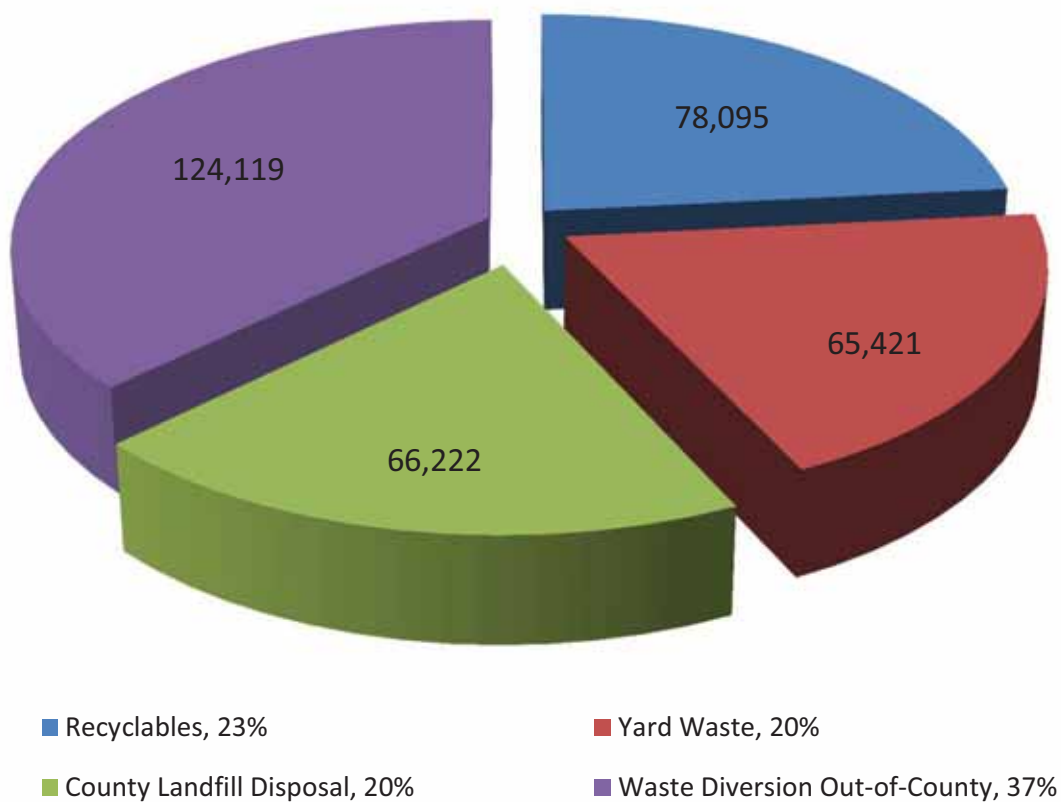
■ MRA Waste Disposed in County, 35%

■ Non-MRA Waste Disposed in County, 17%

■ MRA Waste Recycled in County, 27%

■ Non-MRA Waste Recycled in County, 21%

Figure 3-2
Anne Arundel County MSW and Recyclables Managed by
Bureau of Waste Management Services
3-Year Average, 2010-2012 (From Table 3-2, tons and %)



Waste Collection Service Areas

Solid Waste Management Plan

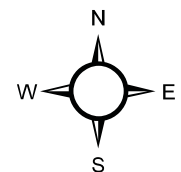
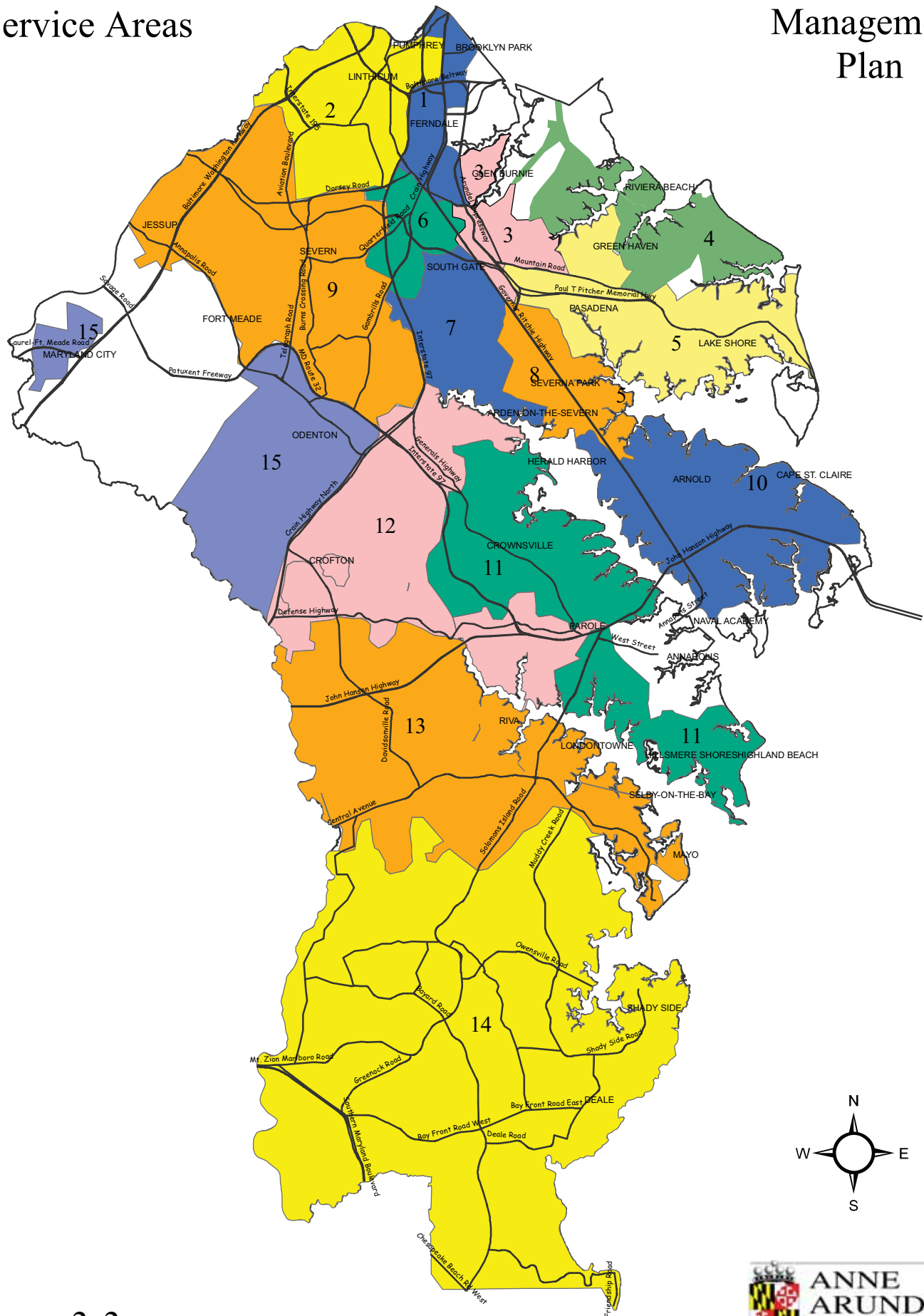


Figure 3-3

Major Roads Used for Waste and Recycling Collection

Solid Waste Management Plan

Legend

- Major Roads
- Collection Routes

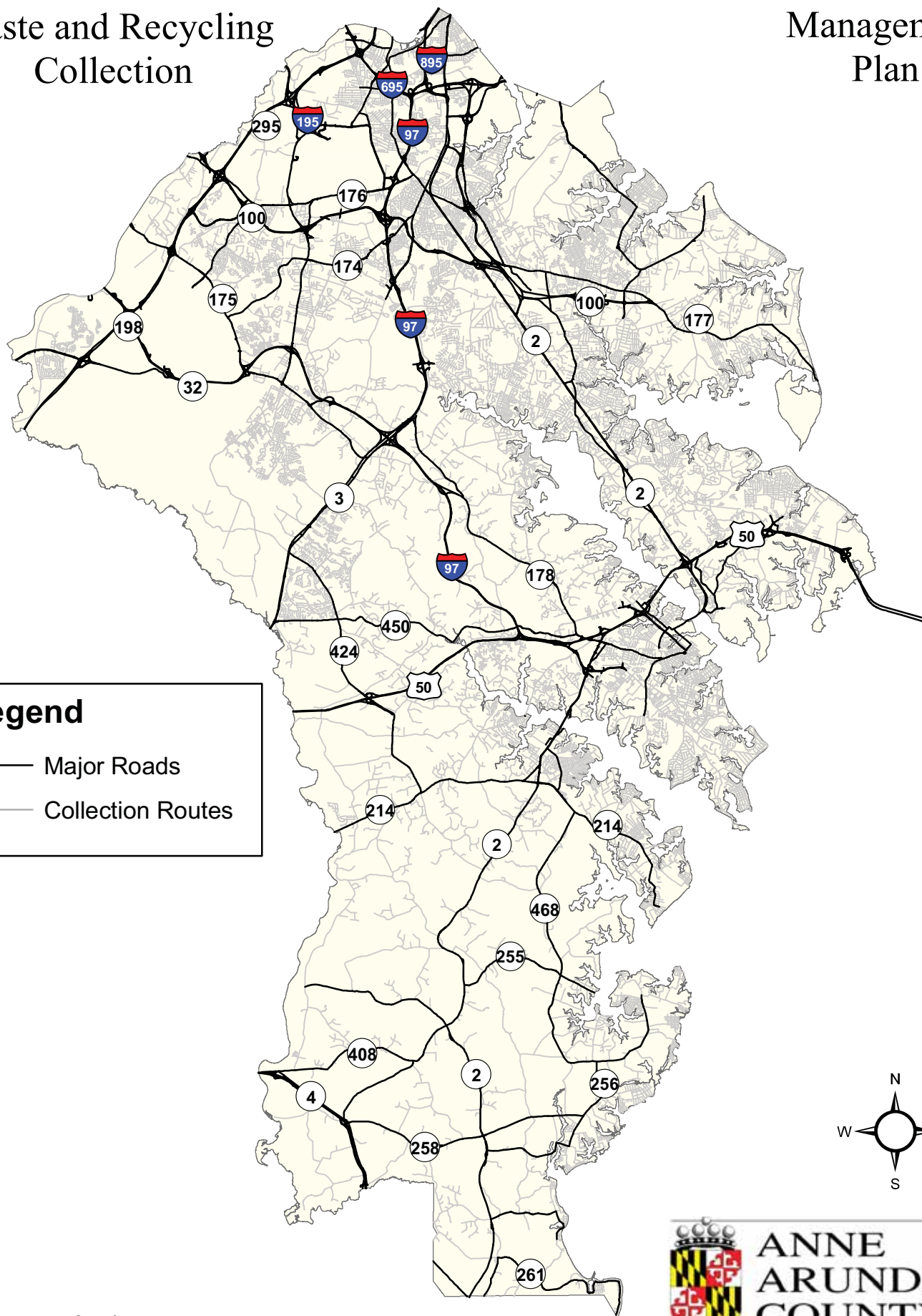


Figure 3-4



Existing Waste Acceptance Facilities

Solid Waste Management Plan

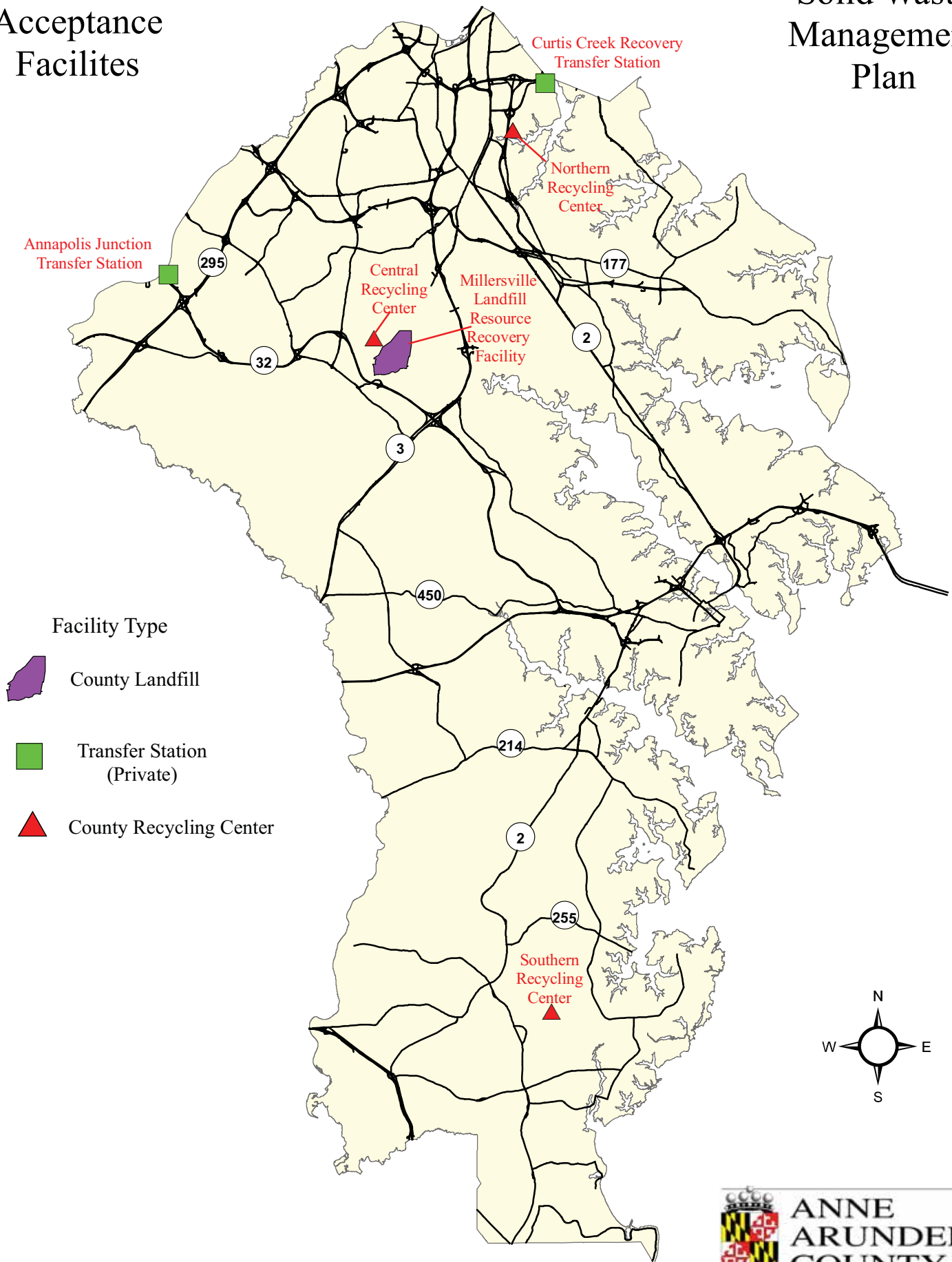


Figure 3-5

Debris Management Sites and Debris Storage and Reduction Sites

Solid Waste Management Plan

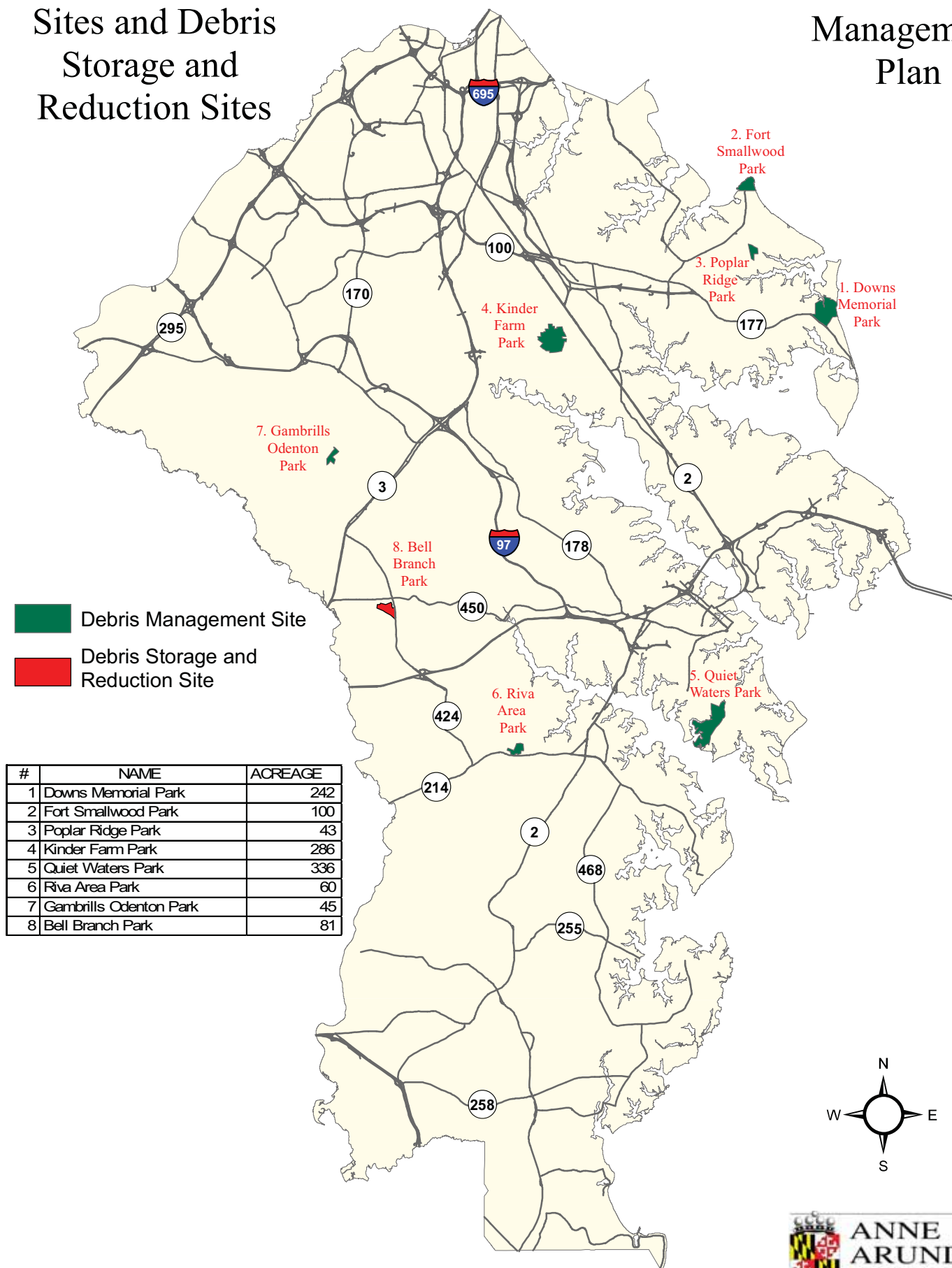
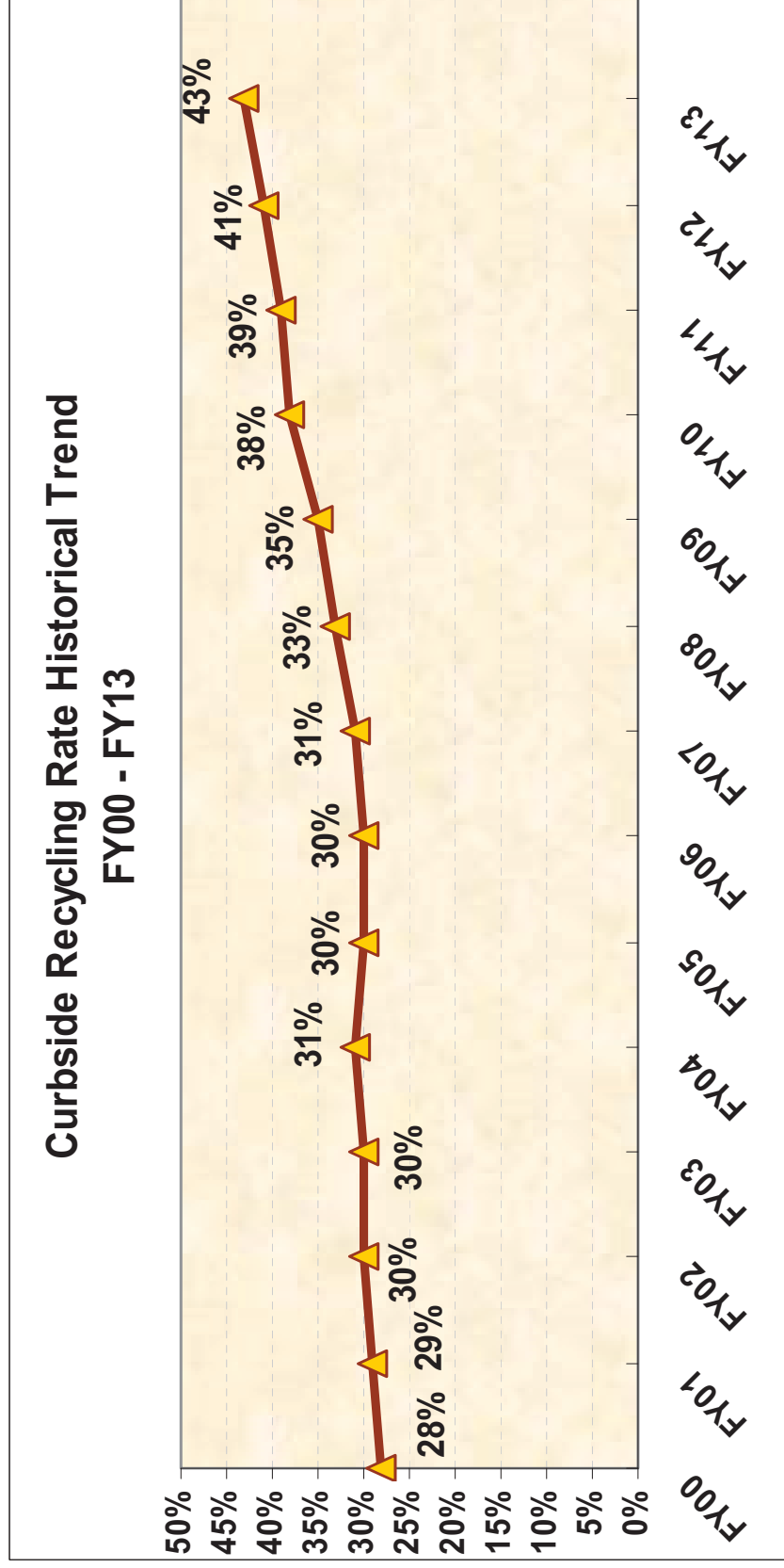


Figure 3-6

FIGURE 3-7



Existing Recycling, Processing and Resource Recovery Facilities

Solid Waste Management Plan

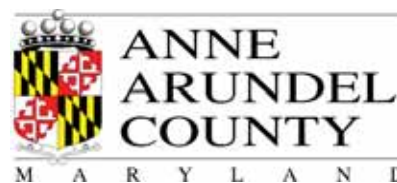
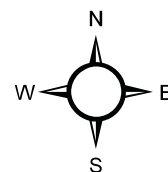
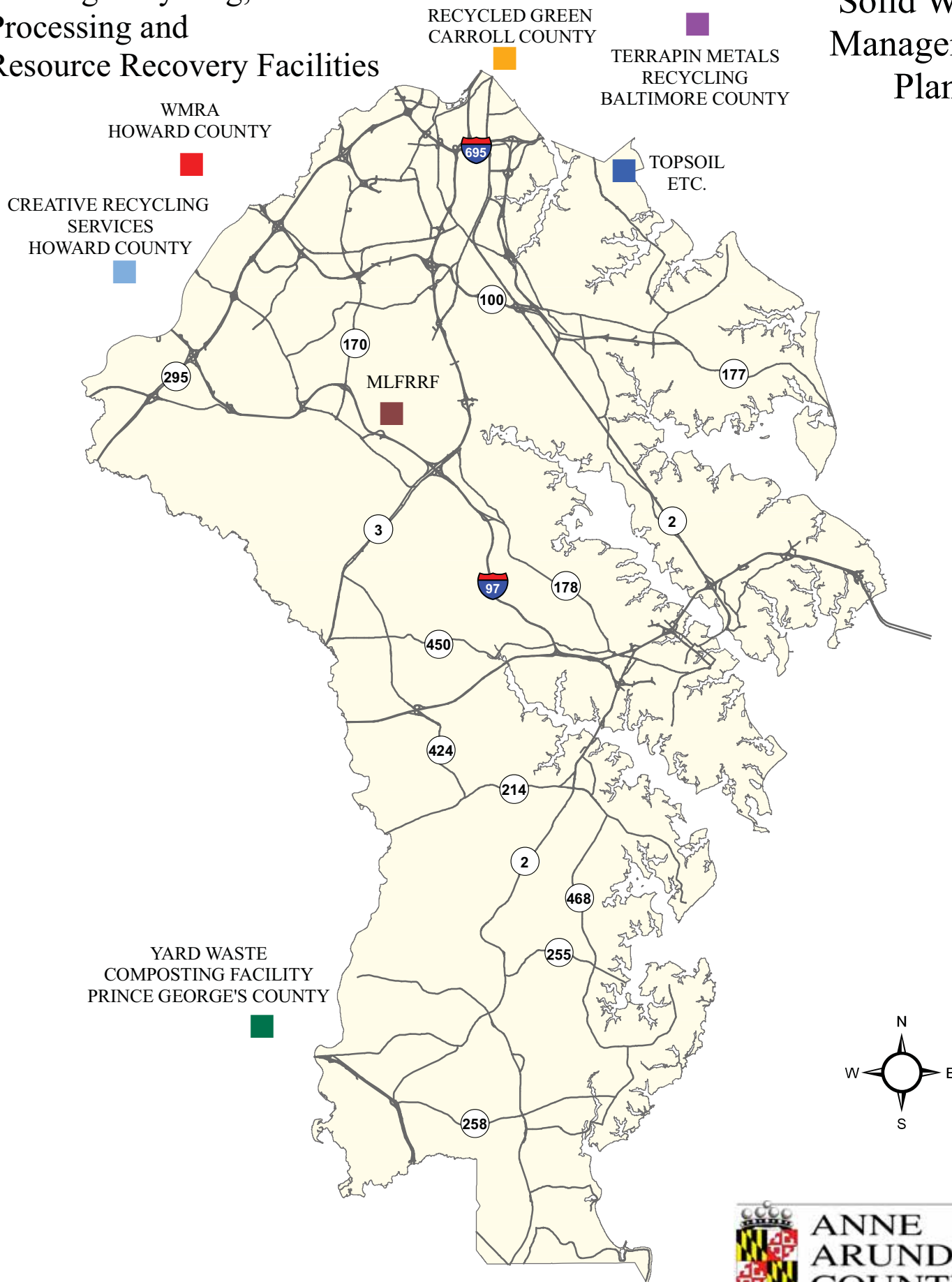


Figure 3-8

FIGURE 5-1
LIFESPAN COMPARISON OF CELLS 8 AND 9 AT THE MLFRRF

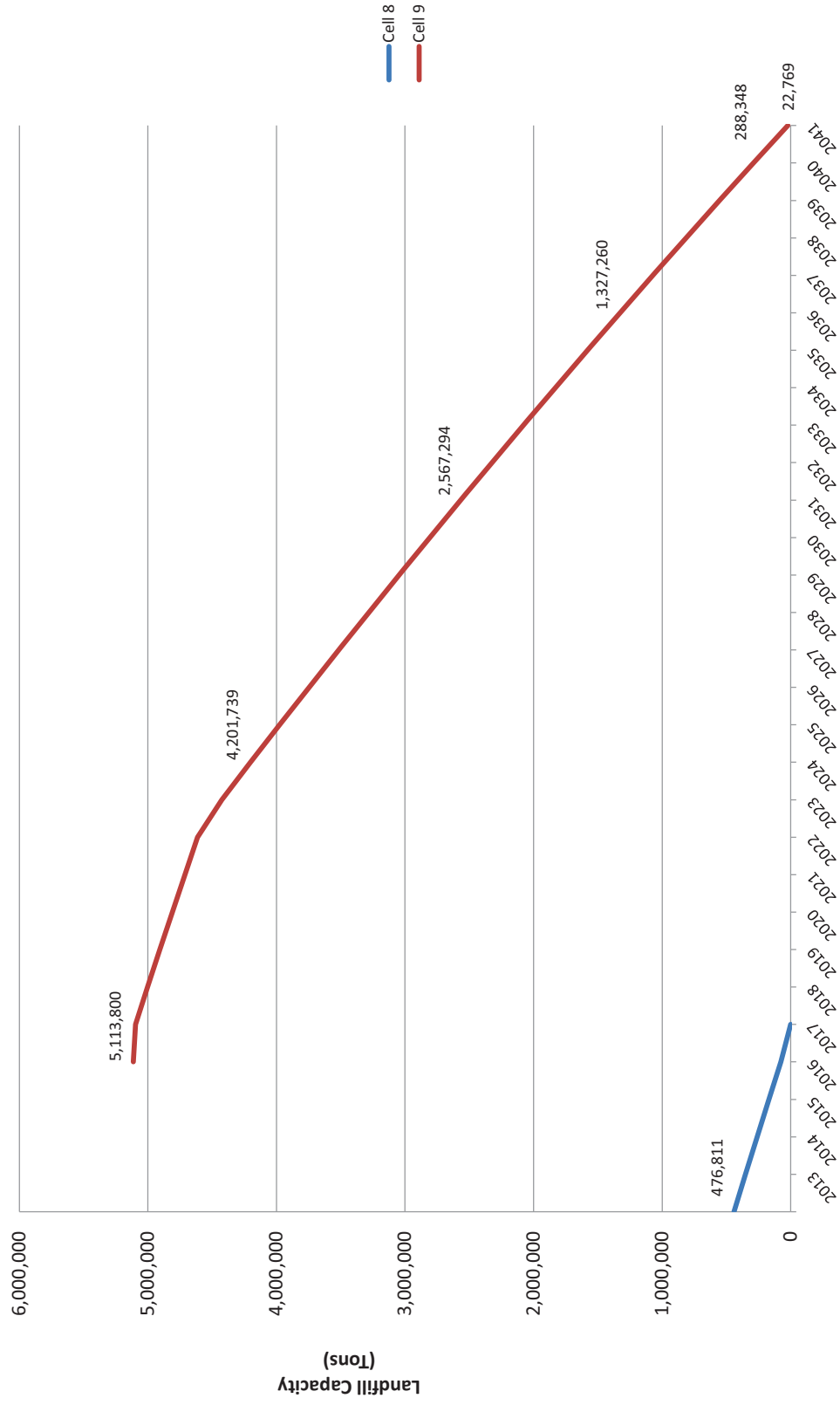


FIGURE 5-2
ANNE ARUNDEL COUNTY
ORGANIC MATERIAL PROCESSING STRATEGY

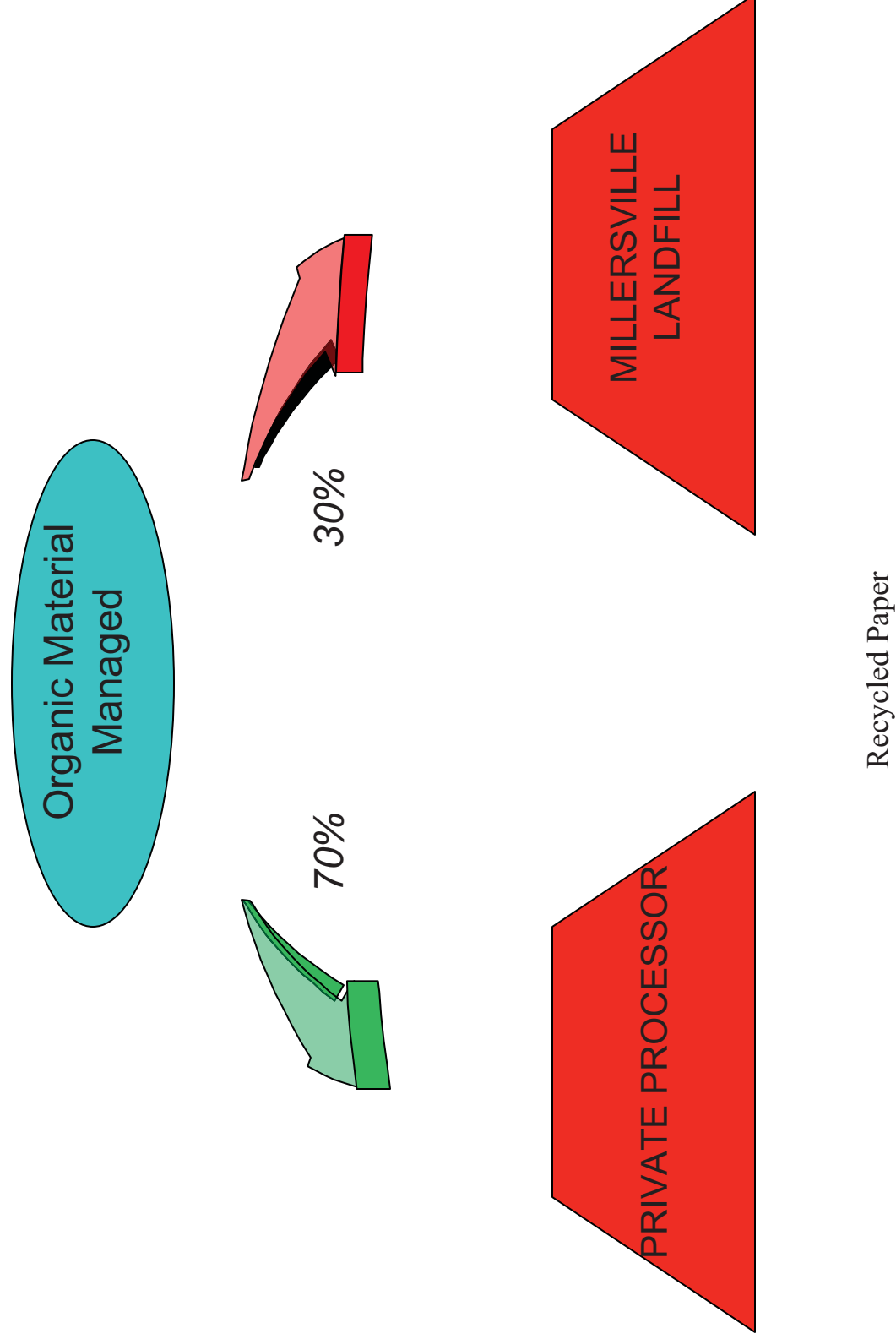
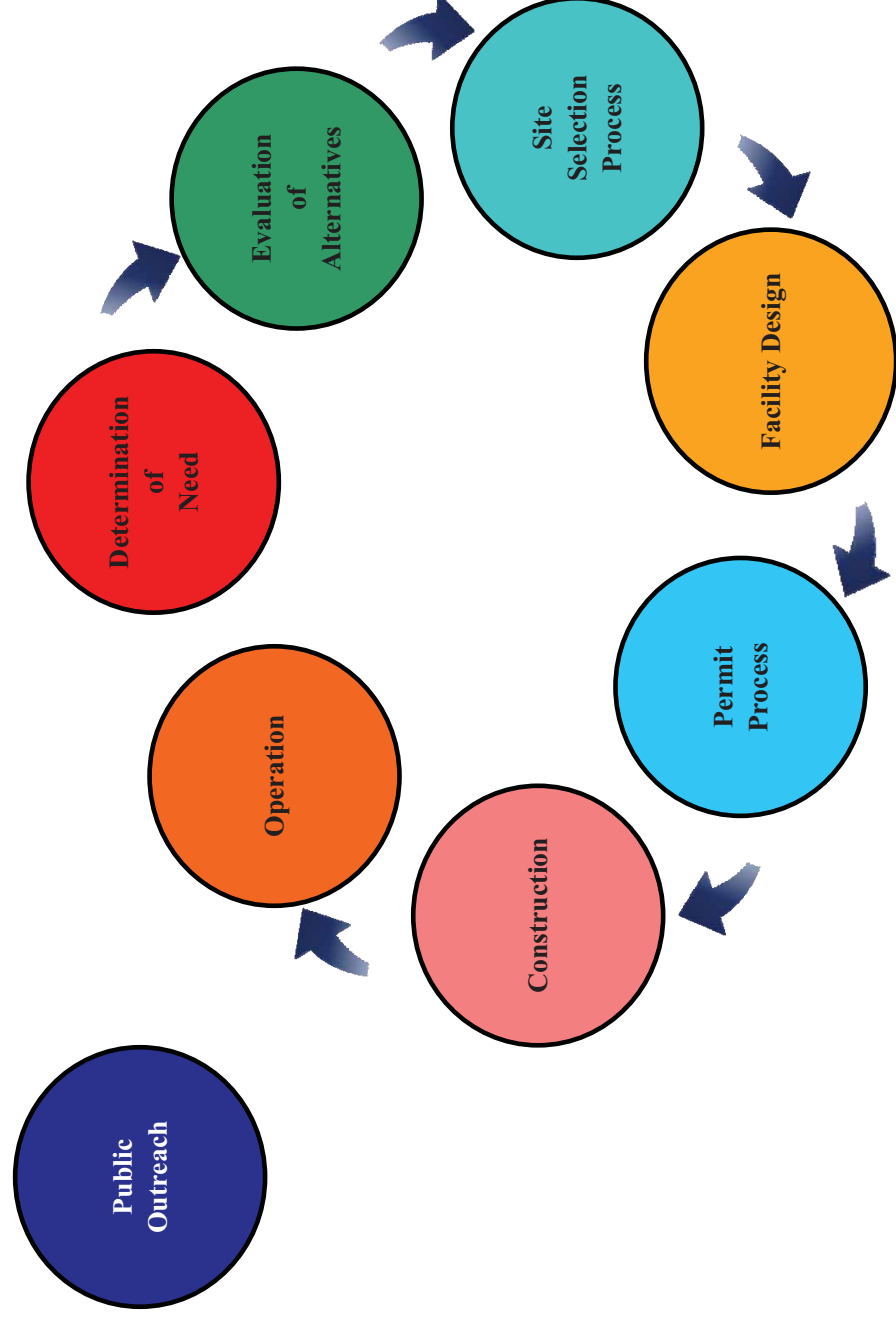


Figure 5-3

Typical County Site Selection for Solid Waste Acceptance Facilities



**Anne Arundel County
Ten Year Plan Update
2013-2023**

**Appendix B
Tables**

TABLE 1-1

SUMMARY OF THE FEDERAL ENVIRONMENTAL STATUTES

Resource Conservation and Recovery Act:

A primary objective of this Act is to promote recycling and reuse of recoverable materials in solid wastes, and/or conversion of wastes to energy. The Act also provides standards and guidelines for the environmentally sound hauling and disposal of both hazardous and non-hazardous solid waste. Subtitle D of the Act specifies siting, planning, design, permitting, construction, operation, closure and post-closure care criteria for municipal solid waste landfills.

Comprehensive Environmental Response, Compensation and Liability Act (Superfund):

This Act establishes programs for the identification and remediation of waste disposal sites containing hazardous substances; establishes standards for clean-up efforts and disposal of wastes; and provides a mechanism for assigning liability for environmental contamination and contaminated sites.

Clean Water Act:

Section 402 of this Act establishes the National Pollutant Discharge Elimination System (NPDES) program, which regulates effluent limitations for the discharge of wastewater and runoff from solid waste management facilities into surface water bodies. The construction of facilities that may impact rivers, lakes, marshes, swamps or wetlands of the United States is regulated by Section 404, which is administered by the Army Corps of Engineers. Section 405 addresses the disposal of wastewater treatment sludges and biosolids.

Clean Air Act:

Title I of this Act regulates emissions from landfills (landfill gas), landfill gas-to-energy facilities and resource recovery facilities and provides regulations on the collection and control of those emissions. Title V of this Act regulates the potential-to-emit pollutants and sets forth permitting regulations for major polluters. Landfill, Gas-to-Energy and Resource Recovery Facilities subject to Title I are required to obtain a Title V permit, in addition to any facility that is a "major source" of pollutants.

Safe Drinking Water Act:

This Act establishes maximum contaminant levels for parameters included in ground water monitoring programs.

Federal Emergency Management Act:

This Act prohibits the siting of landfills and other solid waste management facilities within the 100-year floodplain (Subtitle D allows exception if the unit will not restrict the flow of the 100-year flood, reduce the temporary storage capacity of the floodplain, or result in wash out of solid waste).

Endangered Species Act:

Prohibits construction or operation of solid waste management facilities that would result in the "taking" of an endangered or threatened wildlife species, or in the destruction of their critical habitat.

Mercury-Containing and Rechargeable Battery Act of 1996:

This Act addresses nickel-cadmium and small sealed lead-acid batteries and simplifies the regulatory framework to enhance collection and recycling of nickel-cadmium batteries.

TABLE 1-2

**SUMMARY OF THE FEDERAL SOLID WASTE REGULATIONS
(CFR, TITLE 40, SUBCHAPTER I)**

Part 240:	<i>Guidelines for the Thermal Processing of Solid Waste</i> Minimum performance level for municipal solid waste incinerators with a capacity of 50 tons per day or greater.
Part 241:	<i>Guidelines for the Land Disposal of Solid Wastes</i> Minimum performance levels for any municipal solid waste disposal site operation.
Part 243:	<i>Guidelines for the Storage and Collection of Residential, Commercial and Institutional Solid Waste</i> Minimum performance levels for solid waste collection operations. Issues addressed include storage, safety, equipment, frequency and management.
Part 244:	<i>Solid Waste Management Guidelines for Beverage Containers</i> Minimum actions to reduce beverage container waste; covers use of returnables, information requirements and implementation.
Part 245:	<i>Promulgation Resource Recovery Facilities Guidelines</i> Guidelines for the recovery of resources from residential, commercial and institutional solid waste, including regionalization and planning techniques.
Part 246:	<i>Source Separation for Materials Recovery Guidelines</i> Minimum actions for the recovery of resources from solid wastes, including high grade paper, residential materials and corrugated containers.
Part 247:	<i>Guidelines for the Procurement of Products that Contain Recycled Materials</i> Recommended guidelines only. Procedures that can be utilized in the specifications for procurement of products to increase the use of recycled material.
Part 255:	<i>Identification of Regions and Agencies for Solid Waste Management</i> Procedures for the identification of regional solid waste management planning districts pursuant to section 4002(a) of the Solid Waste Disposal Act.
Part 256:	<i>Guidelines for Development and Implementation of State SWMPS</i> Guidelines for development and implementation of State solid waste management plans.
Part 257:	<i>Criteria for the Classification of Solid Waste Disposal Facilities and Practices</i> Criteria to determine which solid waste facilities pose a reasonable probability of adverse effects on public health or the environment. Facilities in violation will be considered open dumps. Does not apply to municipal solid waste landfills (covered under section 258).
Part 258:	<i>Criteria for Municipal Solid Waste Landfills (Subtitle D Regulations)</i> Establishes minimum national criteria for the siting, design, permitting, construction and operation of municipal solid waste landfills. Includes location restrictions, operating criteria, design criteria, ground water monitoring and corrective action, closure and post-closure, and financial assurance criteria. Design criteria applies to all municipal solid waste landfill units that receive waste on or after October 9, 1991.

TABLE 1-2

SUMMARY OF THE FEDERAL SOLID WASTE REGULATIONS
(CFR, TITLE 40, SUBCHAPTER I)
(continued)

Part 260:	<i>Hazardous Waste Management System - General</i> Provides definitions and a general overview of Parts 260 through 265.
Part 261:	<i>Identification and Listing of Hazardous Waste</i> Provides identification of those materials which are subject to regulation as hazardous wastes under Parts 270, 271 and 124.
Part 262:	<i>Standards Applicable to Generators of Hazardous Waste</i> Establishes standards for generators of hazardous wastes including EPA identification numbers, manifest, pre-transportation requirements, record keeping and reporting. Provides definitions and terms and a general overview of Parts 260-265.
Part 263:	<i>Standards Applicable to Transporters of Hazardous Waste</i> Establishes regulations for transporters of materials requiring a manifest as defined in Part 262.
Part 264:	<i>Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities</i> Establishes minimum national standards for the management of hazardous wastes.
Part 265:	<i>Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage And Disposal Facilities</i> Establishes minimum national standards that define the management of hazardous wastes during the period of interim status and until the certification of post-closure or closure of the facility.
Part 266:	<i>Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Disposal Sites</i> Establishes minimum national standards for the recyclable materials used in a manner to constitute disposal, hazardous waste burned for energy recovery, used oil burned for energy recovery, recyclable material used for precious metal recovery and spent lead-acid batteries being reclaimed.
Part 267:	<i>Interim Standards for Owners and operators of New Hazardous Waste Land Disposal Facilities</i> Establishes minimum national standards which define the management of hazardous waste for new land disposal facilities.
Part 268:	<i>Land Disposal Restrictions</i> Identifies a schedule to evaluate listed wastes for prohibition of land disposal and establishment of treatment standards for these wastes.
Part 270:	<i>EPA Administered Permit Programs: The Hazardous Waste Permit Program</i> Application requirements, standard permit conditions, monitoring and reporting requirements for EPA permitting for the treatment, storage and disposal of hazardous waste.

TABLE 1-2
SUMMARY OF THE FEDERAL SOLID WASTE REGULATIONS
(CFR, TITLE 40, SUBCHAPTER I)
(continued)

Part 271:	<i>Requirements for Authorization of State Hazardous Waste Programs</i> Identifies the requirement that State programs must meet to fulfill interim and final authorization as well as the procedures EPA uses to approve, revise and withdraw approval of State programs.
Part 272:	<i>Approved State Hazardous Waste Programs</i> Establishes the applicable State hazardous waste management programs.
Part 273:	<i>Standards for Universal Waste Management</i> Establishes the requirements for managing batteries, pesticides, mercury-containing equipments and lamps.
Part 503:	<i>Standards for the Use and Disposal of Sewage Sludge</i> Establishes the requirements and standards for treatment, land application, surface disposal and incineration of sewage sludge and biosolids.

TABLE 1-3

**SUMMARY OF THE MARYLAND LAWS
AFFECTING SOLID WASTE MANAGEMENT AND RECYCLING**

Maryland State Implementation Plan (SIP):

Limits emissions from specific pollutant sources to prevent air quality from falling below National Ambient Air Quality (NAAQS) standards.

Chesapeake Bay Critical Area Protection Program (1984):

Controls development in the Chesapeake Bay area and drainage areas.

Maryland Recycling Act (1988):

Establishes a requirement for Maryland Counties with a population greater than 150,000 to plan and implement a recycling system by 1994 to reduce the waste stream of the County by 20%.

Asbestos Control - Asbestos Hazard Emergency Response Act (1990):

Deals with asbestos controls and requires completion of a teaming program by those who do asbestos-related work within schools.

Land Clearing Debris Landfills - Amount of Security (1990):

Addresses the amount of security required for each acre of land clearing debris landfills.

Newsprint Recycled Content Act (1991):

Regulates newsprint recycling by imposing specified recycling content percentage requirements on the Maryland Newspaper Industry.

Telephone Directory Recycling Act (1991):

Regulates telephone directory publishers to meet specified recycling content percentage requirements for telephone directories.

Plastic Material Code (1991):

Rigid plastic containers or bottles may not be distributed for sale in the State unless labeled indicating the plastic resin used to produce them.

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.

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.

Sludge Application:

Land application procedures are strictly regulated to maintain the public health.

Nontidal Wetland Regulations:

Prevent net loss of nontidal wetlands by establishing a stringent permitting process.

Medical Waste Legislation:

Regulates identification, record keeping, treatment, transport, and disposal of special medical wastes; disposal of infectious waste is prohibited in solid waste landfills in the State.

TABLE 1-3

**SUMMARY OF THE MARYLAND LAWS
AFFECTING SOLID WASTE MANAGEMENT AND RECYCLING
(continued)**

Scrap Tire Recycling Fees (1991) and Scrap Tire Law (1992):

The fee establishes a recycling fee on new tires sold in Maryland. The law regulates the storage of scrap tires and prohibits the disposal of scrap tires in landfills.

Waste Information and Assessment Program (1998):

Requires MDE to create a waste information and assessment program and to submit an annual report on the volume of certain types of waste disposed in or exported from Maryland. Requires permitted waste acceptance facilities to provide at least yearly information necessary to MDE.

Natural Wood Waste Recycling Act (1991):

Private wood waste recycling facilities must be appropriately permitted and operated and may accept only natural wood waste.

Maryland State Joint Resolution 6 (2000):

Establishes a requirement for Maryland counties to plan and implement a recycling system by 1994.

Maryland E-Waste Recycling Law (2005, modified 2007, 2012):

Requires computer manufacturers to submit a registration and fee into the Maryland State Recycling Trust Fund, which can be used to give grants to municipalities to implement local computer recycling programs (under HB 575). Modified in 2007 to include additional covered electronics and increases registration fee under (HB 488). Recent modification in 2012 to have a tiered registration fee and required educational and instructional materials related to material destruction and sanitization of data on covered electronics (under HB 879).

Maryland Public School and College Recycling Law (2009):

Requiring recycling in all publicly-funded schools with the exception of State Universities and that each county's recycling plan implement a strategy for collecting, processing, marketing, and disposing of recyclable materials from its public schools and colleges (under HB 1290).

Maryland Mercury Switch Removal from Vehicles Law (2009):

Requires motor vehicle manufacturers, individually or as a group, to develop and submit to the Maryland Department of the Environment (MDE), a mercury minimization plan that includes information on mercury switch removal from motor vehicles (under HB 1263).

Maryland Fluorescent and Compact Fluorescent Light Recycling Act (2010):

Requires each county to address the recycling of certain fluorescent and compact fluorescent lights and in an updated recycling plan (under HB 685).

TABLE 1-4

**SUMMARY OF THE ANNOTATED CODE OF MARYLAND ENVIRONMENT ARTICLE
TITLES AFFECTING SOLID WASTE MANAGEMENT**

TITLE 3 – ENVIRONMENTAL PROGRAMS

Subtitle 1 Maryland Environmental Service

Subtitle 9 Northeast Maryland Waste Disposal Authority

TITLE 4 – WATER MANAGEMENT

TITLE 5 – FOREST AND PARKS

TITLE 6 – TOXIC, CARCINOGENIC AND FLAMMABLE SUBSTANCES

TITLE 7 – HAZARDOUS MATERIALS AND SUBSTANCES

TITLE 9, SUBTITLE 2 – ENVIRONMENTAL ARTICLE (WATER, ICE AND SANITARY FACILITIES)

MDE regulates the location, design, and operation of landfills through refuse disposal permits issued and enforced under authority of the following sections of the Environment Article:

Section 204 Installing, Altering, or Extending Water Supply Systems, Sewerage System, or Refuse Disposal Systems

Section 204.1 Installing, Altering, or Extending Incinerators

Section 204.2 Installing, Altering or Extending Landfill Systems

Section 209 Landfill System Hearings

Section 210 Prerequisites for Issuance of Permit

Section 211 Landfills, Incinerators, and Transfer Stations; Requirements for Security

Section 212 Landfill Systems - Options to Purchase

Section 212.1 Denial of Permit to Non-government Person

Section 213 Term of Permit (5 years)

Section 214 Revoking or Refusal to Renew a Permit

Section 215 Closure and Cover when Operation Ends

Section 225 Landfills near Hospitals Prohibited (2 mile radius)

Section 226 Certification of Public Necessity Required for Hazardous Waste Landfill System

Section 227 Infectious Waste in Landfill System Prohibited

Section 228 Scrap Tires

TITLE 9, SUBTITLE 5 – COUNTY SOLID WASTE MANAGEMENT AND RECYCLING PLANS

Section 503/505/506 County Plan, Content, Reviews, Approvals and Amendments

TITLE 9, SUBTITLE 17 – OFFICE OF RECYCLING

Section 1703/1704 County Recycling Plan and Content and as they relate to 505

Section 1703 Fluorescent and Compact Fluorescent Light that Contain Mercury Recycling (House Bill 685)

Section 1703 Public School and Public College Recycling Programs (House Bill 1290)

Section 1703 Apartment Buildings and Condominiums Recycling (House Bill 1)

Section 1708 Natural Wood Waste Processing and Recycling

Section 1728.1 Statewide Electronics Recycling Program (House Bill 488)

TABLE 1-5

**SUMMARY OF THE CODE OF MARYLAND REGULATIONS (COMAR)
AFFECTING SOLID WASTE MANAGEMENT**

COMAR REGULATIONS

TITLE 08 (DEPARTMENT OF NATURAL RESOURCES), the following sections must be considered in the siting of solid waste management facilities:

Subtitle 3 Chapter 8, Threatened and Endangered Species

Subtitle 9 Chapters 1-6, Forest Conservation

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 solid waste management plan and establishes the format for these plans.

TITLE 26, SUBTITLE 3, CHAPTER 10, FINANCIAL ASSISTANCE FOR THE CONSTRUCTION OF SOLID WASTE PROCESSING AND DISPOSAL FACILITIES:

Stipulates the requirements, priority listing criteria, and ranking system for counties to receive financial assistance from the State.

TITLE 26, SUBTITLE 4, REGULATION OF WATER SUPPLY, SEWERAGE DISPOSAL, AND SOLID WASTE, CHAPTER 7 SOLID WASTE MANAGEMENT:

Regulations for permitting, designing, construction, operating and closing municipal, land clearing debris, rubble, and industrial waste landfills, processing facilities, transfer stations, and incinerators.

Subtitle 4 Chapter 6, Sewage Sludge Management

Subtitle 4 Chapter 8, Scrap Tire Regulations

Subtitle 4 Chapter 9, Natural Wood Waste Recycling Facilities

Other regulations under Title 26 that are important to solid waste management include

Subtitle 8 Water Pollution

Subtitle 11 Air Quality

Subtitle 13 Disposal of Controlled Hazardous Substances

Subtitle 17 Chapter 1, Erosion and Sediment Control

Subtitle 17 Chapter 2, Stormwater Management

Subtitle 17 Chapter 4 Construction on Nontidal Waters and Floodplains

Subtitle 23 Nontidal Wetlands

Subtitle 24 Tidal Wetlands Regulations

TABLE 1-6

**SUMMARY OF THE ANNE ARUNDEL COUNTY CODE
AFFECTING SOLID WASTE MANAGEMENT**

ANNE ARUNDEL COUNTY CODE, ARTICLE 13, TITLE 4.

13-4-101 This Section defines solid waste as trash, recyclables, yard waste, and other waste matter, but the term does not include explosives, poisons, acids and caustics, hot ashes, coals, hazardous waste or medical waste.

13-4-102 This Section addresses powers and duties of the Director.

13-4-103 This Section addresses collection service areas.

13-4-104 This Section addresses general collection practices: collection containers, number of containers, container placement and container removal.

13-4-105 This Section This regulation addresses the general need and basis of the solid waste service charge. The solid waste service charge specifies the fees charged to residents for solid waste collection, recycling, or disposal services provided by the County.

13-4-106 This Section addresses commercial recycling and associated service charges.

13-4-107 This Section addresses changes, requirements and prohibitions for County-owned or operated Landfills and solid waste disposal facilities.

13-4-108 This Section addresses stealing of recyclables.

13-4-109 The Section addresses the solid waste financial assurance fund section sets guidelines for the financial assurance required by federal regulation for closure and post-closure of the County landfills.

ANNE ARUNDEL COUNTY CODE ZONING USE LIST.

This document provides zoning regulations for certain solid waste management facilities.

ANNE ARUNDEL COUNTY CODE, ARTICLE 18, TITLE 11.

18-11-113 This Section addresses zoning requirements for clay and borrow pits and sand and gravel operations including the prohibition of the use of combustion ash.

18-11-129 This Section addresses zoning requirements for landfills, rubble and land clearing debris landfills including the prohibition of the use of combustion ash.

18-11-132 This Section addresses zoning requirements for natural wood waste recycling facilities.

18-11-144 This Section addresses zoning requirements for recyclables recovery facilities.

18-11-149 This Section addresses zoning requirements for rubble processing facilities.

18-11-152 This Section addresses zoning requirements for solid waste transfer stations.

TABLE 1-7

CITATIONS RELATED TO THE ADOPTION OF SUBSIDIARY SOLID WASTE MANAGEMENT PLANS

Environmental Article, Title 9, Subtitle 5 of the Annotated Code of Maryland § 9-504, (a) Required incorporation: To the extent that the incorporation will promote the public health, safety, and welfare, each County plan shall incorporate all or part of the subsidiary plan of each town; municipal corporation; sanitary district; privately owned facility; or local, State or Federal agency that has existing or planned development in that County.

Code of Maryland Regulations (COMAR) 26.03.02B: Each County plan shall include all or part of the towns; municipal corporations; sanitary districts; privately owned facilities; and local, State and Federal agencies having existing, planned, or programmed development within the County to the extent that these inclusions shall promote the public health, safety and welfare. These subsidiary plans may be incorporated by reference into the County plan.

TABLE 2-1

**STATE, REGIONAL, AND ANNE ARUNDEL COUNTY POPULATION DATA AND PROJECTIONS
2010 THROUGH 2025
(COUNTY SOLID WASTE MANAGEMENT PLAN UPDATE PLANNING PERIOD 2013-2023)**

	Year	Statewide	Baltimore Region ⁽¹⁾	Anne Arundel County ⁽⁶⁾
	2010 ⁽²⁾	5,773,552	2,662,691	537,656
	2011 ⁽³⁾			540,374
	2012 ⁽³⁾			543,106
	2013 ⁽³⁾			545,851
	2014 ⁽³⁾			548,611
	2015 ⁽⁵⁾	6,038,450	2,778,350	551,384
	2016 ⁽³⁾			553,382
	2017 ⁽³⁾			555,387
	2018 ⁽³⁾			557,399
	2019 ⁽³⁾			559,418
	2020 ⁽⁴⁾	6,276,300	2,847,550	561,445
	2021 ⁽³⁾			563,237
	2022 ⁽³⁾			565,034
	2023 ⁽³⁾			566,837
	2024 ⁽³⁾			568,646
	2025 ⁽⁴⁾	6,483,300	2,899,550	570,461

Notes:

- (1) Includes Anne Arundel, Baltimore, Carroll, Harford and Howard Counties, and the City of Baltimore.
- (2) Source: U.S. Census Data.
- (3) Source: Mid-year Interpolation of 2010, 2015, 2020, and 2025 Anne Arundel County data and/ or projections from the Anne Arundel County (AAC) 2013 Master Plan for Water Supply and Sewerage Systems.
- (4) Source: State information from Maryland State Data Center Information; Anne Arundel County projections from the AAC 2013 Master Plan for Water Supply and Sewerage Systems.
- (5) Source: State and Region data from Maryland State Data Center projections; Anne Arundel County projections from the AAC 2013 Master Plan for Water Supply and Sewerage Systems.
- (6) Anne Arundel Co. projections and interpolations from AAC 2013 Master Plan for Water Supply and Sewerage Systems.
- (7) Eleven years of population projections shown; 2013 SWMP ten-year planning period begins in mid-2013 and continues through mid-2023.

TABLE 3-1

ANNUAL WASTE GENERATION OF ANNE ARUNDEL COUNTY, 2013-2023

Anne Arundel County Population	2010 Actual Tons (1)	2010 Per Capita Rate (2)	Ten-Year Planning Period (mid-2013 through mid-2023) (3)			
			2013	2015	2019	2023
	537,656	537,656	545,851	551,384	559,418	566,837
All Values Listed Below are in Tons per Year						
Waste Category						
Trash - Residential	157,291	0.29255	159,688	161,307	163,657	165,828
Trash - Commercial	70,611	0.13133	71,687	72,414	73,469	74,443
Trash - Mixed (9)	137,404	0.25556	139,498	140,912	142,966	144,862
Industrial (solids, liquid, etc.) (8)						
Institutional (schools, hospitals, etc.) (8)						
Demolition Debris (C&D)	177,199	0.32958	179,900	181,723	184,371	186,816
Land Clearing	485	0.00090	492	497	505	511
Controlled Hazardous Substance (CHS) (8)						
Dead Animals (8)						
Bulky or Special Waste (8)						
Vehicle Tires	1,399	0.00260	1,420	1,435	1,456	1,475
Wastewater Treatment Plant Sludges (10)	5	0.00001	5	5	5	5
Asbestos	284	0.00053	288	291	295	299
Soil	435	0.00081	442	446	453	459
Special Medical Waste	871	0.00162	884	893	906	918
Concrete	270	0.00050	274	277	281	285
Witness Burns	546	0.00102	554	560	568	576
Waste Not Reported by MD Permitted Facilities	680	0.00126	690	697	708	717
Total MRA and Non-MRA Waste (4)	547,480	1.01827	555,825	561,459	569,640	577,194
Total MRA and Non-MRA Recyclables (5)	496,681	0.92379	504,251	509,363	516,785	523,638
Total Waste Managed (6)	1,044,161	1.94206	1,060,076	1,070,822	1,086,424	1,100,832
- MSW Ash Recycled	-11,906	-0.02214	-12,087	-12,210	-12,388	-12,552
- Backend Scrap Metal Recycled	-466	-0.00087	-473	-478	-485	-491
Total Waste Generation (7)	1,031,789	1.91905	1,047,516	1,058,134	1,073,551	1,087,789

(1) 2010 data provided to Anne Arundel County by MDE, and taken from solid waste tonnages reported to MDE by permitted solid waste facilities and the MRA reports completed by Anne Arundel County.

(2) 2010 per capita generation figures computed by dividing 2010 tons for each waste category by 2010 County census population.

(3) 2013-2023 tonnage projections computed by multiplying 2010 per capita rate for each waste category by respective future yearly population projection.

(4) 2010 AAC waste tonnage equals total of waste by category as provided by MDE. Of this total, MDE reports that MRA waste disposed = 367,252 tons; Non-MRA waste disposed = 180,228 tons.

(5) 2010 AAC recyclables tonnages are provided by MDE. Of this total, MDE reports that MRA waste recycled = 279,378 tons; Non-MRA waste recycled = 217,303 tons.

(6) Total of MRA plus Non-MRA wastes plus recyclables.

(7) Total waste managed in Anne Arundel County, minus MSW ash generated and backend scrap metal recycled.

(8) Category left blank in table at direction of MDE.

(9) Municipal solid waste managed by private entities and reported to MDE as mixed residential and commercial waste.

(10) Excludes land application.

TABLE 3-2

ANNE ARUNDEL COUNTY-MANAGED RECYCLABLES AND TRASH
(TONS PER YEAR)

Origin of Materials	2010 (tons)	2011 (tons)	2012 (tons)	3 Year Average
Northern Recycling Center (Glen Burnie)				
Recyclables	8,208	8,953	7,409	8,190
Yard Waste	14,560	13,625	9,606	12,597
Trash	14,411	16,781	17,413	16,202
Southern Recycling Center (Sudley)				
Recyclables	2,793	2,466	2,320	2,526
Yard Waste	10,606	6,034	5,986	7,542
Trash	5,253	5,926	6,657	5,945
Central Recycling Center (Millersville)				
Recyclables	5,346	4,543	3,761	4,550
Yard Waste	2,751	2,517	1,763	2,344
Trash	13,021	12,893	11,847	12,587
Millersville Landfill				
Recyclables	7,079	7,611	7,283	7,324
Yard Waste	11,611	11,685	12,850	12,049
Trash	37,264	34,878	35,562	35,901
Curbside Contracts				
Recyclables	50,825	52,864	54,954	52,881
Yard Waste	27,121	31,075	26,505	28,234
Trash	121,657	120,686	112,128	118,157
Other Recycling				
Recyclables	2,446	2,595	2,830	2,624
Yard Waste	2,358	2,744	2,866	2,656
Trash	1,635	1,680	1,333	1,549
Totals				
Recyclables	76,697	79,032	78,557	78,095
Yard Waste	69,007	67,680	59,576	65,421
Trash	<u>193,241</u>	<u>192,844</u>	<u>184,940</u>	<u>190,342</u>
Origin - Total In	338,945	339,556	323,073	333,858
Overall Recycling Rate	43%	43%	43%	43%
Destination of Materials	2010 (tons)	2011 (tons)	2012 (tons)	3 Year Average
Millersville Landfill Disposal/Use				
Recyclables	7,742	8,251	8,646	8,213
Trash	69,517	59,786	69,364	66,222
Millersville Landfill - Composting				
Yard Waste	17,493	20,961	22,352	20,268
Transfer				
Yard Waste	24,748	19,447	15,570	19,922
Trash	123,724	133,058	115,576	124,119
Recyclers				
Recyclables	68,955	70,781	69,911	69,882
Yard Waste	26,766	27,272	21,655	25,231
Total				
Recyclables	76,697	79,032	78,557	78,095
Yard Waste	69,007	67,680	59,577	65,421
Trash	<u>193,241</u>	<u>192,844</u>	<u>184,940</u>	<u>190,342</u>
Destination - Total	338,945	339,556	323,074	333,858
Millersville Landfill Overall Waste Diversion Rate				80%

(1) Data Summarized by WMS, and extracted From WMS Year End Reports and other WMS Staff Reports.

TABLE 3-3

**NO VARIATIONS IN CURRENT PRACTICES OVER THE SUCCEEDING 10 YEAR PLANNING PERIOD
ANNE ARUNDEL COUNTY MANAGED RECYCLABLES AND WASTE
ORIGIN AND DESTINATION PROJECTIONS 2013-2023**

	2010	Per Capita	Ten-Year Planning Period (mid-2013 through mid-2023), Tons of Material										
	WMS-Managed Tons (1)	WMS Tons tons/cap/yr	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AAC Pops. (historic, projections) (2)	537,656	537,656	545,851	548,611	551,384	553,382	555,387	557,399	559,418	561,445	563,237	565,034	566,837
Origin of Materials in AAC WMS System			Values Listed Below are in Tons per Year or in % of Tons per Year										
Recyclables													
3 Recycling Centers	16,347	0.0304											
Millersville Landfill Recycling	7,079	0.0132											
Curbside Contracts	50,825	0.0945											
Other	2,446	0.0045											
Yard Waste													
3 Recycling Centers	27,917	0.0519											
Millersville Landfill Yard Waste	11,611	0.0216											
Curbside Contracts	27,121	0.0504											
Other	2,358	0.0044											
Trash (MSW)													
3 Recycling Centers	32,685	0.0608											
Millersville Landfill	37,264	0.0693											
Curbside Contracts	121,657	0.2263											
Other	1,635	0.0030											
Total Materials In AAC System	338,945	0.6304											
Destination of Materials in AAC WMS System, Goals (5)													
Projected Gross Waste Generation (3,4)	338,945		344,111	345,851	347,599	348,859	350,123	351,391	352,664	353,942	355,072	356,204	357,341
Recycling Diversion Target (%)	23%		23%	23%	23%	23%	23%	23%	23%	23%	23%	23%	23%
Yard Waste Diversion Target (%)	20%		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Target MSW Diversion to Other Sites (%)	37%		37%	37%	37%	37%	37%	37%	37%	37%	37%	37%	37%
Target Max. Millersville LF Disposal (%)	20%		20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
Summary of AAC-Managed Waste Generation/Recovery/ Disposal (6)													
TOTALS													
Recyclables	76,697	0.1427	79,146	79,546	79,948	80,238	80,528	80,820	81,113	81,407	81,666	81,927	82,188
Yard Waste	69,007	0.1283	68,822	69,170	69,520	69,772	70,025	70,278	70,533	70,788	71,014	71,241	71,468
Trash (MSW) Diverted Elsewhere	123,724	0.2301	127,321	127,965	128,612	129,078	129,545	130,015	130,486	130,958	131,376	131,796	132,216
Trash (MSW) Disposed at MLF	69,517	0.1293	68,822	69,170	69,520	69,772	70,025	70,278	70,533	70,788	71,014	71,241	71,468
TOTAL TONNAGES MANAGED BY AAC	338,945	0.6304	344,111	345,851	347,599	348,859	350,123	351,391	352,664	353,942	355,072	356,204	357,341

(1) See Table 3-2 for detailed background data on 2010 WMS-managed tons, developed from Year End Reports and Related Staff Reports on Tonnages.

(2) Population projections from Table 2-1.

(3) 2010 Gross WMS-managed Per Capita Generation Value computed from Table 3-2 "Destination of Materials" WMS data. Gross Waste Generation Rate for the purposes of these projections is:

(4) Annual gross waste generation totals computed by multiplying respective year's population projection by gross per capita generation rate.

(5) Estimated waste fractions from various sources and to various destinations in 2010 from Figure 3-2.

(6) This is a function of assumptions used in goals for recyclables/ yard waste captured, and wastes diverted from Millersville Landfill.

0.6304 tons/ capita/ year.

TABLE 3-4
EXISTING AND APPROVED WASTE ACCEPTANCE FACILITIES
IN ANNE ARUNDEL COUNTY, MARYLAND AND UTILIZED BY THE COUNTY

Facility	Maryland Coordinates	Size (Through Put)	Wastes Accepted	Owner	Solid Waste Permit Number	Expiration Date
<u>Landfills</u>						
Millersville Landfill and Resource Recovery Facility	895,000: 460,000	567 acres total 269 fill area (200-1,000 tons per day)	Municipal Solid Waste (including segregation of recyclables)	Anne Arundel County	2012-WMF-0240	11/13/2017
<u>Recycling Centers</u>						
Central Recycling Center (formerly Millersville Convenience Center)	895,000: 460,000	N/A (varies based on customers per day)	Municipal Solid Waste (residential waste and recyclables)	Anne Arundel County	None Required	N/A
Northern Recycling Center (formerly Glen Burnie Convenience Center)	910,000: 490,000	N/A (varies based on customers per day)	Municipal Solid Waste (residential waste and recyclables)	Anne Arundel County	None Required	N/A
Southern Recycling Center (formerly Sudley Convenience Center)	920,000: 357,000	N/A (varies based on customers per day)	Municipal Solid Waste (residential waste and recyclables)	Anne Arundel County	None Required	N/A
<u>Transfer Stations</u>						
Annapolis Junction Processing Facility and Transfer Station	860,000: 470,000	32 acres total 22 acres developed (3,000 tons per day average)	Non-hazardous residential, commercial, municipal, industrial, agriculture, silvicultural, construction, demolition and other waste sources. (including segregation of recyclables)	Garnet of Maryland (dba Waste Management, Inc.)	2011-WPT-0158	3/24/2016
Curtis Creek Processing Facility and Transfer Station	920,000: 500,000	12.78 acres total (3,000 tons per day average)	Non-hazardous residential, commercial, municipal, industrial, agriculture, silvicultural, construction, demolition and other waste sources. (including segregation of recyclables)	Curtis Creek Recovery Systems, Inc. (Co/ AmeriWaste)	2008-WPT-0539	12/22/2013

TABLE 3-5

**EXISTING RECYCLING, PROCESSING AND RESOURCE RECOVERY FACILITIES
IN ANNE ARUNDEL COUNTY, MARYLAND AND UTILIZED BY THE COUNTY**

Facility	Site Location	Recyclable Materials Accepted	Owner
<u>Single Stream Commingled (not located within the County)</u>			
Waste Management Recycle America	Elkridge, MD	Commingled (paper, cardboard, glass, plastics, metal cans, etc.)	Waste Management, Inc.
<u>Yard Waste</u>			
Millersville Landfill (County Yard Waste Composting Facility)	Severn, MD	Yard Waste (brush, branches, logs, stumps, leaves, grasses, etc.)	Anne Arundel County
Central, Northern, and Southern Recycling Centers (formerly Millersville, Glen Burnie, and Sudley Convenience Centers)	Severn, MD Glen Burnie, MD Deale, MD	Yard Waste (brush, branches, logs, stumps, leaves, grasses, etc.)	Anne Arundel County
<u>Yard Waste (not located within the County)</u>			
Top Soil Etc.	Baltimore, MD	Yard Waste (brush, branches, logs, stumps, leaves, grasses, and wood, dirt, brick, block, stone)	Top Soil Etc.
Prince George's County Yard Waste Compositing Facility	Upper Marlboro, MD	Yard Waste (brush, branches, logs, stumps, leaves, grasses, etc.)	Prince George County
Recycled Green	Woodbine, MD	Yard Waste (brush, branches, logs, stumps, leaves, grasses, etc.)	Recycled Green Industries, LLC.

TABLE 3-5

**EXISTING RECYCLING, PROCESSING AND RESOURCE RECOVERY FACILITIES
IN ANNE ARUNDEL COUNTY, MARYLAND AND UTILIZED BY THE COUNTY**

Facility	Site Location	Recyclable Materials Accepted	Owner
<u>Scrap Metal (not located within the County)</u>			
Terrapin Recycling	Baltimore, MD	Metals (various types of scrap metal)	Terrapin Recycling, LLC
<u>Electronics (not located within the County)</u>			
Creative Recycling Services	Elkridge, MD	Electronics (various types of electronic equipment)	Creative Recycling Services, Inc.
<u>Rubble (not located within the County)</u>			
Rubble Bee Recycling	Owings, MD	Construction and Demolition Debris including Rubble materials	Rubble Bee Recycling, LLC

TABLE 4-1

**ALTERNATE PROJECTIONS - WITH INCREASED RECYCLING OVER THE SUCCEEDING 10 YEAR PLANNING PERIOD AND VARYING COUNTY LANDFILL DIVERSION
ANNE ARUNDEL COUNTY MANAGED RECYCLABLES AND WASTE
ORIGIN AND DESTINATION PROJECTIONS 2013-2023**

2010 WMS-Managed Tons (1)		Per Capita WMS Tons tons/cap/yr	Ten-Year Planning Period (mid-2013 through mid-2023), Tons of Material										
			2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AAC Pops. (historic, projections (2))			537,656	548,611	551,384	553,382	555,387	557,399	559,418	561,445	563,237	565,034	566,837
Origin of Materials in AAC WMS System			Values Listed Below are in Tons per Year or in % of Tons per Year										
Recyclables													
3 Recycling Centers			16,347										
Millersville Landfill Recycling			7,079										
Curbside Contracts			50,825										
Other			2,446										
Yard Waste													
3 Recycling Centers			27,917										
Millersville Landfill Yard Waste			11,611										
Curbside Contracts			27,121										
Other			2,358										
Trash (MSW)													
3 Recycling Centers			32,685										
Millersville Landfill			37,264										
Curbside Contracts			121,657										
Other			1,635										
Total Materials In AAC System			338,945										
Destination of Materials in AAC WMS System, Goals													
Projected Gross Waste Generation (3,4)			338,945										
Recycling Diversion Target (%)			23%										
Yard Waste Diversion Target (%)			20%										
Target MSW Diversion to Other Sites (%)			37%										
Target Max. Millersville LF Disposal (%)			20%										
Summary of AAC-Managed Waste Generation/Recovery/ Disposal (6)													
TOTALS													
Recyclables			76,697										
Yard Waste			69,007										
Trash (MSW) Diverted Elsewhere			123,724										
Trash (MSW) Disposed at Millersville Landfill			69,517										
TOTAL TONNAGES MANAGED BY AAC			338,945										

(1) See Table 3-2 for detailed background data on 2010 WMS-managed tons, developed from Year End Reports and Related Staff Reports on Tonnages.

(2) Population projections from Table 2-1.

(3) 2010 Gross WMS-managed Per Capita Generation Value computed from Table 3-2 "Destination of Materials" WMS data. Gross Waste Generation Rate for the purposes of these projections is:

(4) Annual gross waste generation totals computed by multiplying respective year's population projection by gross per capita generation rate.

(5) Estimated waste fractions from various sources and to various destinations in 2010 from Figure 3-2.

(6) This is a function of assumptions used in goals for recyclables/ yard waste captured, and wastes diverted from Millersville Landfill. See projected trends in far right column of Table 4-1.

0.6304 tons/ capital/ year.

TABLE 4-2

ANNE ARUNDEL COUNTY
MRA AND WASTE DIVERSION RATES 1991-2011

MRA CY	Anne Arundel County	
	MRA Recycling Rate	Waste Diversion Rate (MRA rate + Source Reduction Credit)
1991	12.21%	---
1992	15.44%	---
1993	29.66%	---
1994	26.63%	---
1995	33.00%	---
1996	33.00%	---
1997	39.00%	---
1998	41.00%	---
1999	42.00%	---
2000	38.00%	---
2001	39.00%	41.00%
2002	42.00%	44.00%
2003	41.00%	44.00%
2004	37.00%	40.00%
2005	41.00%	44.00%
2006	46.26%	49.26%
2007	39.16%	42.16%
2008	42.71%	45.71%
2009	39.40%	42.40%
2010	44.05%	47.05%
2011	47.17%	51.17%

TABLE 5-1**LIFESPAN SUMMARY OF THE MLFRRF**

Disposal Rate	Landfill Utilization Rate = 1,200 lbs/CY	
	Years	Fill Date
Cell 8 Lifespan at 90,000 tons/yr with an annual increase of 1% until 4/13/2023 or until filled, whichever occurs first.	4.8	2017
Cell 9 Lifespan at 90,000 tons/yr with an annual increase of 1% until 4/13/2023; and then at a rate that is projected from 201,000 tons/yr in the first year and increases 1% annually	24.3	2041

TABLE 5-2

STRATEGIC RECYCLING AND SOLID WASTE ACTION ITEMS

Category	Item ID	Action Description
Integrated System Management	ISM1	Continue to implement new recycling and waste management initiatives, programs and systems that are innovative as well as responsive to changes in regulations.
	ISM2	Promote a hierarchical flow for County-managed materials from source reduction and reuse, to recycling and composting, to beneficial use and energy recovery, and to treatment and disposal.
	ISM3	Promote programs and policies that increase recycling, divert waste from the Landfill and otherwise extend the life of the landfill.
	ISM4	Initiate long-term planning, assessments and other measures as needed to promote a sustainable system upon Landfill closure.
Regional Partnerships	RP1	Continue to develop partnerships with public and private entities and associated facilities on a regional basis to help meet the County's recycling and solid waste needs.
	RP2	Periodically reassess existing partnerships for conformance with the County's goals and objectives and as needed, develop new partnerships and arrangements to meet the needs of the County.
Protecting Public Health and the Environment	PPHE1	Ensure measures to protect public health and the environment are implemented at County-managed and privately-operated facilities from the time recyclables and solid wastes are placed curbside for collection until their ultimate processing, recovery, and/or disposal. Also refer to and comply with the Environmental Monitoring Program.
Waste Reduction	WR1	Continue to promote increased recycling and waste reduction through public education and other measures.
	WR2	Expand waste reduction initiatives such as backyard composting and grass-cycling programs.
	WR3	Expand waste recovery activities including beneficial use applications for solid waste residues.
Recycling	R1	Increase the recycling % of County-managed waste to a minimum of 45%, per County Solid Waste Management Strategy.
	R2	Attain the highest recycling rate in the State.
	R3	Continue to use and provide multiple recycling containers and larger carts to residential curbside customers for recycling.
	R4	Establish a comprehensive recycling campaign at the Recycling Centers (i.e. homeowner drop-off facilities).
	R5	Continue to promote the 50/50 Challenge for everyone in the County to recycle at least 50% of all discarded materials.
	R6	Continue to provide education and outreach to students (school-aged children), families and staff so that they will recycle more at school and ultimately more at home.
	R7	Continue to assist public schools and colleges with recycling through the Public School and Public College Recycling Program.
	R8	Continue provide recycling assistance to small businesses and recreational areas of the County including County Parks.
	R9	Continue to assist County office building to recycle through expanding the County Office Recycling Program (CORP).
	R10	Continue to encourage commercial businesses and establishments to recycle by providing program development assistance.
	R11	Develop and implement an apartment building and condominium recycling program.
	R12	Evaluate additional mechanisms to recycle, process and/or market single stream recyclables, refined yard waste, scrap metal, electronics, fluorescent lighting, rubble and other potentially recyclable materials including food waste, carpet and textiles.
	R13	Continue to search for the highest revenues for recyclables managed by the County.
	R14	Continue to evaluate new materials that can be added to the curbside contract and homeowner drop-off recycling programs.
Collection	C1	Continue to provide residential curbside customers with: weekly collection of recyclables, yard waste and trash; scheduled bulky item and metal collections; dumpsters for scheduled community clean-up events; and seasonal collection Christmas trees.
	C2	Improve site usage and customer service at the Central, Northern and Southern Recycling Centers through modernization activities, enhanced signage, public education and outreach, staff training and regular customer interaction.
	C3	Continue to provide additional services for materials not accepted at curbside.
	C4	Evaluate the collection of additional recyclable and solid waste materials and their eventual processing and disposal needs.
Waste Diversion	WD1	Continue the waste diversion % of County-managed waste to a minimum of 31%, per the County Solid Waste Management Strategy.
	WD2	Attain the highest MRA Waste Diversion Rate in the State.
	WD3	Continue to divert residential waste from the Millersville Landfill to transfer stations and other waste acceptance facilities to prolong the useful life of the Landfill as long as such feasible and cost-effective alternatives exist.
	WD4	Evaluate alternatives to the current practices of waste diversion.

TABLE 5-2 (continued)

STRATEGIC RECYCLING AND SOLID WASTE ACTION ITEMS

Category	Item ID	Action Description
Disposal		Strive to dispose of no more than 24% of County-managed waste at the Landfill, where feasible and cost-effective alternatives exist, per the County Solid Waste Management Strategy.
	D1	Implement measures to preserve and maximize landfill airspace and capacity to prolong the useful life of the Millersville Landfill.
	D2	Complete the closure of Cell 8 at the Millersville Landfill.
	D3	Complete the construction of the initial waste disposal area of Cell 9 (subcell 9.1).
	D4	Ensure a smooth transition of waste disposal operations between Cells 8 and 9 at the Millersville Landfill.
Enhancements to the Existing Systems	EES1	Continue to evaluate and implement technically feasible and cost-effective enhancements to the existing recycling and solid waste systems to increase the capture of recyclables and waste disposal efficiencies.
Alternatives to the Millersville Landfill	AML1	Continue to divert residential curbside waste to a regional transfer station or out-of-County disposal facility.
	AML2	Evaluate the potential need for and/or use of a Regional or County-owned Organic Waste Composting Facility.
	AML3	Evaluate the potential need for and/or use of a Regional or County-owned Waste-to-Energy Facility.
	AML4	Evaluate waste mining of the unlined closed cells at the Millersville Landfill to reduce the County's environmental liability.
	AML5	Evaluate the potential need for a new County-owned Landfill to provide future waste disposal capacity.
	AML6	Evaluate the potential impact of adding measures listed in AML2 thru AML5 on further extending the life of the Millersville Landfill, beyond 2040.
Revenue and Funding	RF1	Perform annual reviews of the residential rate structure to ensure that adequate funding exists to support the recycling and solid waste programs, and to identify measures to keep the rate structure cost-effective and affordable.
	RF2	Continue to investigate advantageous markets for the sale of single-stream recyclables, yard waste (compost and mulch), scrap metal, electronics and other recyclable materials to provide a revenue stream for the Solid Waste Fund.
	RF3	Continue to develop beneficial use applications for solid waste residues similar to rubble to offset operational expenditures for raw materials and for landfill gas for electricity generation to provide a revenue stream.
Regulatory Compliance	RC1	Perform site inspections utilizing County DPW-WMS Staff regarding the operation and maintenance of existing County recycling and solid waste facilities.
	RC2	Perform joint audit inspections utilizing County DPW-WMS Staff in conjunction with State and County regulatory agencies when significant recycling and solid waste facility changes are implemented.
	RC3	Monitor proposed Federal, State and Local regulations that may impact the operations of existing County recycling and solid waste facilities, as well as the need for design/construction/operation of future facilities.
Environmental Monitoring Program	EMP1	Ensure compliance with all requirements of the Refuse Disposal Permit for the Millersville Landfill.
	EMP2	Maintain the closure cover and/or capping systems at the Millersville, Glen Burnie and Sudley Road Landfills.
	EMP3	Continue to implement an Environmental Monitoring Plan at the Millersville and Sudley Road Landfills.
	EMP4	Continue post-closure care maintenance, inspections and reporting for the closed cells of the Millersville, Glen Burnie and Sudley Road Landfills.
	EMP5	Ensure compliance with materials handling procedures and permits for household hazardous waste, used/waste oil and tires.
	EMP6	Continue stormwater pollution prevention inspections, record keeping, tracking and training for staff.
	EMP7	Develop updated plans, procedures and sampling protocols for the Landfill and Recycling Centers to comply with the new general permit for stormwater discharges.
	EMP8	Routinely conduct site visits to public and private sector recycling and waste disposal facilities utilized by the County to ensure the facilities are being operated and maintained in an environmentally sound manner.
	EMP9	Explore additional beneficial uses for collected landfill gas at the Millersville Landfill, beyond Gas-to-Electricity.
	EMP10	Develop additional compliance programs to meet the requirements of changing and/or new environmental regulations. Also, refer to Protecting Public Health and the Environment.

TABLE 5-2 (continued)

STRATEGIC RECYCLING AND SOLID WASTE ACTION ITEMS

Category	Item ID	Action Description
Customer Service and Relations	CSR1	Continue education and outreach efforts to County residents and adjacent landowners of the County's facilities regarding current and future recycling and solid waste programs and facility activities.
	CSR2	Continue to respond to issues and concerns raised by County residents and facility customers regarding programs and services in a prompt and complete manner.
	CSR3	Review the County DPW-WMS website on a routine basis to ensure that the most current and accurate information regarding services, programs, facilities and staff contact information is presented.
Zoning	Z1	Review existing land use policies and zoning regulations to determine the benefits of allowing solid waste recycling, processing and disposal facilities that are of similar type to existing County Facilities in zones other than those already designated for these types of facilities.
	Z2	Work with the County Office of Planning and Zoning to develop land use policies and zoning regulations that, if in the best interests of the County, allow solid waste recycling, processing and disposal facilities that are of different type than existing County Facilities in land use zones within the County.
	Z3	Perform permit application reviews for solid waste recycling, processing and disposal facilities for conformance with the Solid Waste Management Plan.

**Anne Arundel County
Ten Year Plan Update
2013-2023**

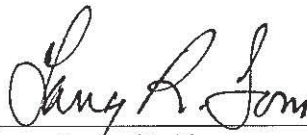
**Appendix C
County and State Approvals of the Plan**

**Anne Arundel County Office of Planning and Zoning
Plan Certificate of Conformance**

October 3, 2013

Certificate of Conformance

This document is consistent with the General Development plan of Anne Arundel County and
was prepared in accordance with COMAR 26.03.03



Larry R. Tom
Planning & Zoning Officer

**Anne Arundel County Council
Plan Adoption**

FINAL

COUNTY COUNCIL OF ANNE ARUNDEL COUNTY, MARYLAND

Legislative Session 2013, Legislative Day No. 40

Bill No. 91-13

Introduced by Mr. Walker, Chairman
(by request of the County Executive)

By the County Council, November 1, 2013

Introduced and first read on November 4, 2013
Public Hearing set for and held on December 2, 2013
Bill Expires February 7, 2014

By Order: Elizabeth E. Jones, Administrative Officer

A BILL ENTITLED

1 AN ORDINANCE concerning: Solid Waste Management Plan 2013

2
3 FOR the purpose of adopting the Anne Arundel County Solid Waste Management Plan
4 2013 as one of the documents used to guide the future development of land and the
5 location of public services and facilities in the County; and generally relating to the
6 Solid Waste Management Plan 2013.

7
8 BY repealing and reenacting, with amendments: § 18-2-103 (a)(5)(vii)
9 Anne Arundel County Code (2005, as amended)

10
11 SECTION 1. *And be it further enacted*, That Section(s) of the Anne Arundel County
12 Code (2005, as amended) read as follows:

13
14 **ARTICLE 18. ZONING**

15
16 **TITLE 2. GENERAL PROVISIONS**

17
18 **18-2-103. Planning for future development.**

19
20 (a) **Guides.** The following documents shall be used as a guide in the future
21 development of land in and the location of public services and facilities by the County:

22
23 (5) the following additional County plans:

EXPLANATION: CAPITALS indicate new matter added to existing law.
[Brackets] indicate matter stricken from existing law.

1 (vii) the Anne Arundel County Solid Waste Management Plan [2003] 2013, as
2 adopted by [Bill No. 35-03 and amended by Bill No. 49-10] BILL NO. 92-13.
3

4 SECTION 2. *And be it further enacted*, That the Anne Arundel County Solid Waste
5 Management Plan 2013 is incorporated herein by reference as if fully set forth. A copy
6 of the Anne Arundel County Solid Waste Management Plan 2013 shall be permanently
7 kept on file with the Administrative Officer of the County Council, the Office of
8 Planning and Zoning, and the Department of Public Works.
9

10 SECTION 3. *And be it further enacted*, That this Ordinance shall take effect 45 days
11 from the date it becomes law.

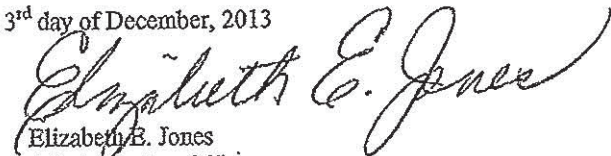
READ AND PASSED this 2nd day of December, 2013

By Order:




Elizabeth E. Jones
Administrative Officer

PRESENTED to the County Executive for her approval this 3rd day of December, 2013



Elizabeth E. Jones
Administrative Officer

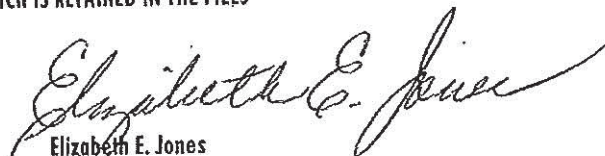
APPROVED AND ENACTED this 13th day of December, 2013



Laura Neuman
County Executive

EFFECTIVE DATE: January 27, 2014

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF BILL NO.
91-13 THE ORIGINAL OF WHICH IS RETAINED IN THE FILES
OF THE COUNTY COUNCIL.



Elizabeth E. Jones
Administrative Officer

**Maryland Department of the Environment
Plan Approval**



MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Suite 610 • Baltimore, MD 21230-1719

410-537-3000 • 800-633-6101 • www.mde.maryland.gov

Martin O'Malley
Governor

Robert M. Summers, Ph.D.
Secretary

Anthony G. Brown
Lieutenant Governor

March 3, 2014

The Honorable Laura Neuman, County Executive
County Council of Anne Arundel County
44 Calvert Street
Annapolis MD 21401

Dear County Executive Neuman:

The Maryland Department of the Environment (the "Department") has completed its review of Anne Arundel County's Resolution Bill No. 91-13 for adopting Anne Arundel County's Solid Waste Management Plan (the "Plan") for the planning period 2013-2023. The Anne Arundel County Council adopted the Plan on December 2, 2013 and forwarded the Plan to the Department for its review and approval in response to the requirements of Section 9-503 (a) of the Environment Article, Annotated Code of Maryland. The Department received the Plan on December 18, 2013.

Based on this review, the Department has determined that the adopted resolution satisfies the requirements of Section 9-503 (a) of the Environment Article, Annotated Code of Maryland, and the 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.

Please note that Section 9-506(b)(2) of the Environment Article, Annotated Code of Maryland, Anne Arundel County is required to submit a progress report at least every two years including any revisions or amendments to the County Plan that have been adopted. Since the Plan was adopted on December 2, 2013, the County must submit to the Department its first progress report on or before **December 2, 2015**.

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 Mr. A.Hussain Alhija, Acting Program Manager, Waste Diversion and Utilization Program at 410-537-3431 or you may contact me at 410-537-3304.

Sincerely,

Horacio Tablada, Director
Land Management Administration

cc: A.Hussain Alhija, Acting Program Manager, Land Management Administration

**Anne Arundel County
Ten Year Plan Update
2013-2023**

**Appendix D
Amendments to the Plan**



MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Suite 610 • Baltimore, MD 21230-1719

410-537-3314 • 800-633-6101 • www.mde.maryland.gov

Larry Hogan
Governor

Ben Grumbles
Secretary

Boyd Rutherford
Lieutenant Governor

October 9, 2015

Mr. Rhody Holthaus, Acting Deputy Director
Bureau of Waste Management Service
Anne Arundel County Department of Public Works
2662 Riva Road
Annapolis, MD 21401

Dear Mr. Holthaus:

The Maryland Department of the Environment (the "Department") has completed its review of Anne Arundel County's Bill No. 75-15 for adopting the County's Special Event Recycling Plan (SERP) amendment to its 2013 – 2023 Solid Waste Management Plan (the "Plan"). The Anne Arundel County Council adopted the SERP amendment on September 11, 2015 and forwarded the adopted amendment to the Department for its review and approval in response to the requirements of Section 9-503(c) of the Environment Article, Annotated Code of Maryland. The Department received the SERP amendment on September 25, 2015.

The SERP amendment addressed the requirements of Section 9-1712 of the Environment Article, Annotated Code of Maryland, which mandates the County to address the collection and recycling of recyclable materials from special events. Based on the review, the Department has determined that the adopted SERP amendment satisfies the requirements of Section 9-1712 of the Environment Article. In accordance with Section 9-507 of the Environment Article, Annotated Code of Maryland, the adopted SERP amendment is approved.

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 on these matters, please contact Mr. A.Hussain Alhija, Program Manager, Resource Management Program, at 410-537-3314, or hussain.alhija@maryland.gov, or you may contact me at 410-537-3304.

Sincerely,

Hilary Miller, Acting Director
Land Management Administration

cc: Christopher J. Phipps, P.E., Director, Department of Public Works
Richard Bowen, Manager, Recycling and Waste Reduction Division
A.Hussain Alhija

RECEIVED
Waste Management Services

OCT 16 2015

**Recycling and Waste
Reduction Division**

FINAL

COUNTY COUNCIL OF ANNE ARUNDEL COUNTY, MARYLAND

Legislative Session 2015, Legislative Day No. 31

Bill No. 75-15

Introduced by Mr. Walker, Chairman
(by request of the County Executive)

By the County Council, July 6, 2015

Introduced and first read on July 6, 2015
Public Hearing set for and held on September 8, 2015
Bill Expires October 11, 2015

By Order: Elizabeth E. Jones, Administrative Officer

A BILL ENTITLED

1 AN ORDINANCE concerning: 2015 Amendments to the Solid Waste Management Plan
2 2013
3

4 FOR the purpose of amending the Anne Arundel County Solid Waste Management Plan
5 2013 to include a Special Events Recycling Program and a list of Special Events
6 Recycling Locations; and generally relating to the Anne Arundel County Solid Waste
7 Management Plan.
8

9 BY repealing and reenacting, with amendments: § 18-2-103(a)(5)(vii)
10 Anne Arundel County Code (2005, as amended)
11

12 SECTION 1. *Be it enacted by the County Council of Anne Arundel County,*
13 *Maryland,* That Section(s) of the Anne Arundel County Code (2005, as amended) read as
14 follows:
15

16 **ARTICLE 18. ZONING**

17 **TITLE 2. GENERAL PROVISIONS**

18 **18-2-103. Planning for future development.**
19

20 (a) **Guides.** The following documents shall be used as a guide in the future
21 development of land in and location of public services and facilities by the County:
22
23

EXPLANATION: CAPITALS indicate new matter added to existing law.
[Brackets] indicate matter stricken from existing law.

(5) the following additional County plans:

(vii) the Anne Arundel Solid Waste Management Plan 2013, as adopted by Bill No. 91-13 AND AMENDED BY BILL NO. 75-15.

SECTION 2. *And be it further enacted*, That the Anne Arundel County Solid Waste Management Plan 2013 is hereby amended as follows:

1. In Appendix D of the Plan, insert the "Special Events Recycling Program", attached hereto as Exhibit A; and

2. In Appendix D of the Plan, insert "Special Events Recycling Locations", attached hereto as Exhibit B.

SECTION 3. *And be it further enacted*, That the Anne Arundel County Solid Waste Management Plan 2013, as amended by this Ordinance, is incorporated herein by reference as if fully set forth. A copy of the Anne Arundel County Solid Waste Management Plan 2013, as amended by this Ordinance, shall be permanently kept on file with the Administrative Officer to the County Council, the Office of Planning and Zoning, and the Department of Public Works.

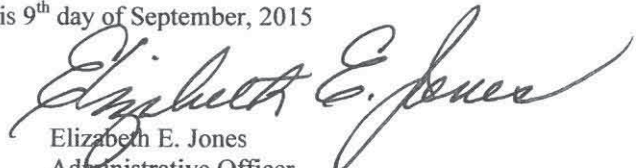
SECTION 4. *And be it further enacted*, That this Ordinance shall take effect 45 days from the date it becomes law.

READ AND PASSED this 8th day of September, 2015

By Order:


Elizabeth E. Jones
Administrative Officer

PRESENTED to the County Executive for his approval this 9th day of September, 2015


Elizabeth E. Jones
Administrative Officer

APPROVED AND ENACTED this 11th day of September, 2015


Steven R. Schuh
County Executive

EFFECTIVE DATE: October 26, 2015

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF BILL NO.
75-15, THE ORIGINAL OF WHICH IS RETAINED IN THE FILES
OF THE COUNTY COUNCIL.


Elizabeth E. Jones
Administrative Officer

Special Events Recycling Program

Background

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 Solid Waste Management Plan (SWMP). The law also requires each county to update its plan by October, 2015, to address the collection and recycling of recyclable materials from special events.

Special Events Subject to the Recycling Program

The Environment Article, § 9-1712, of the State Code, requires Special Events Organizers (SEO) to provide for recycling at events that meet the following criteria:

1. Include temporary or periodic use of a public street, publicly owned site or facility, or public park;
2. Serve food or drink; and
3. Are 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.

The County has identified public sites within the County that host or may host Special Events meeting the above criteria. In addition to the sites listed individually in the charts contained in Exhibit 1 to this Special Events Recycling Program (SERP), Special Events taking place on any other Municipal, State, or Federally-owned property are also included in the SERP.

Materials and Obligations

SEO's are responsible for:

1. Providing and placing recycling receptacles adjacent to each trash receptacle at the event;
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 transported for recycling; and
5. Paying any costs associated with recycling at the special event.

SEO's may fulfill the requirement to ensure materials are collected and transported for recycling through one or more of the following methods:

1. Transporting collected materials to one of the County's recycling drop-off sites;
2. Contracting with a recycling hauler to collect the materials and transport them to a recycling processor; or
3. Receiving prior agreement from the site owner to use an existing recycling collection system available at the site.

The SERP must include collection of at least plastic containers, metal containers, glass containers, and paper. The SEO may assess the availability of food scraps recycling services for the event though as of October 2014, there are no commercial scale food scraps composting facilities within Anne Arundel County, or the Baltimore Metropolitan area. If such services become available, the SEO may 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 SEO may develop a recycling program in accordance with the SERP. Recycling at municipally-owned sites must follow any applicable regulations established by the municipality.

Stakeholders

The following stakeholders will be involved in the SERP:

1. DPW's Bureau of Waste Management Services: Responsible for overseeing the Recycling and Waste Reduction Division's activities and assuring that all properties that potentially host events falling under the recycling mandate in the Environment Article, § 9-1712, of the State Code are included in the SERP. In cooperation with the County's Health Department, Department of Recreation and Parks, Board of Education and Community College, DPW is responsible for communicating the requirements of the law to prospective SEO and owners or operators of publicly-owned sites in the County. The Recycling and Waste Reduction Division may also assist special events organizers in setting up recycling programs.
2. SEO's: Responsible for providing recycling bins and ensuring collection for recycling in accordance with the requirements outlined within the Materials and Obligations section, beginning no later than October 1, 2015.

Program Monitoring

The Recycling and Waste Reduction Division and SEO will monitor progress and performance of the SERP, however it is the responsibility of the SEO to implement the program.

Recycling at events subject to the SERP will be ensured by doing the following:

1. Special Event Permits issued for use of County sites will include a statement on the Permit Application that recycling is required for all events that meet the SERP criteria. The application form will require a certification that the SEO will provide for recycling in accordance with the requirements of the SERP.

2. A fact sheet or other informational document such as a flyer or brochure outlining the requirements of the SERP will be distributed with each Special Event Permit issued by the County.

The SEO is responsible for monitoring the implementation of recycling at the special event. In addition, they 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 SEO to ensure proper performance. The SEO must promptly take action to correct any deficiencies in contractor performance.

Program Enforcement

The Recycling and Waste Reduction Division will monitor the implementation of SERP and may conduct inspections of events from time to time to ensure compliance. If necessary, the County Office of Law will be consulted on any enforcement action contemplated as provided in the State Law.”

**SPECIAL EVENTS RECYCLING LOCATIONS
COUNTY FACILITIES**

LOCATION	ADDRESS	ZIP
Emergency Management, Office of (Old Hein Bldg.)	7480 Balto/Annap Blvd, Glen Burnie	21061
Fire Dept, 7th District Rescue Squad	6274 Shady Side Rd, Shady Side	20764
Fire Dept, Academy Training Facility	415 Frye Road, Millersville	21108
Fire Dept, Annapolis Neck Fire Station	991 Bay Ridge Rd., Annapolis	
Fire Dept, Anne Arundel Alarms	113 Glenmonth Ave, Glen Burnie	21061
Fire Dept, Armiger	304 Mountain Rd, Pasadena	21122
Fire Dept, Arnold	1505 Ritchie Hwy, Arnold	21012
Fire Dept, Arundel Volunteer	2380 Davidsonville Rd, Gambrills	21054
Fire Dept, Avalon Shores Vol.	6270 Shady Side Rd, Shady Side	20764
Fire Dept, Brooklyn Park Vol.	5100 Ritchie Hwy, Baltimore	21225
Fire Dept, Cape St. Claire Vol.	1411 Cape St. Claire Rd, Annapolis	21401
Fire Dept, Deale Volunteer	6007 Drum Point Road, Deale	20751
Fire Dept, Earleigh Heights Vol	161 Ritchie Hwy, Severna Park	21146
Fire Dept, Ferndale Volunteer	4 Broadview Blvd, Glen Burnie	21061
Fire Dept, Galesville Volunteer	954 Main Street, Galesville	20765
Fire Dept, Glen Burnie Volunteer	15 Central Ave, Glen Burnie	21061
Fire Dept, Harmons Dorsey	1367 Dorsey Road, Hanover	21076
Fire Dept, Harwood - Lothian Vol.	5165 Solomons Island Rd, Lothian	20711
Fire Dept, Headquarters	8501 Veterans Highway, Millersville	21108
Fire Dept, Herald Harbor Vol.	401 Hall Road, Crownsville	21032
Fire Dept, Jacobville	3725 Mountain Rd, Pasadena	21122
Fire Dept, Jessup Volunteer	7891 Max Blobs Park Rd, Jessup	20177
Fire Dept, Jones Station	960 Ritchie Hwy, Severna Park	21146
Fire Dept, Lake Shore Volunteer	4496 Mountain Rd, Pasadena	21122
Fire Dept, Linthicum Volunteer	309 Camp Meade Road, Linthicum	21090
Fire Dept, Marley Volunteer	7726 Balto/Annap Blvd, Glen Burnie	21061
Fire Dept, Maryland City Vol.	3498 Fort Meade Rd, Laurel	20810
Fire Dept, Odenton Volunteer	1425 Annapolis Road, Odenton	21113
Fire Dept, Orchard Beach	7549 Solley Rd, Baltimore	21226
Fire Dept, Riva Volunteer	3123 Riva Road, Riva	21140
Fire Dept, Riviera Beach Vol.	8506 Fort Smallwood Rd, Pasadena	21123
Fire Dept, Severn	7860 Telegraph Road, Severn	21144
Fire Dept, South Glen Burnie	7880 S. Crain Hwy, Glen Burnie	21060
Fire Dept, Waugh Chapel	1300 Waugh Chapel Rd, Gambrills	21054
Fire Dept, West Annapolis Volunteer	121 Jennifer Rd, Annapolis	21401
Fire Dept, Woodland Beach Vol.	529 Londontown Rd, Edgewater	21037
Health Department, Administration	3 Harry S. Truman Pkwy, Annapolis	21401
Health Department, Brooklyn Park - Health Center	300 Hammonds Lane near, Baltimore	21225
Health Department, Glen Burnie	416 A Street, S. W., Glen Burnie	21061
Health Department, Magothy	2501 Mountain Road, Pasadena	21122
Health Department, Mental Health Addictions Services	407 S. Crain Highway, Glen Burnie	21061
Health Department, North County	791 Aquahart Road, Suite 200, Glen Burnie	21061
Health Department, Parole	1950 Drew Street, Annapolis	21401
Hein Building (New) North County Complex - BD of Electric	7320 Baltimore Annapolis Blvd, Glen Burnie	21061
Heritage Office Complex	2660-2666 Riva Road, Annapolis	21401
Library, Annapolis	1410 West St, Annapolis	21401

LOCATION	ADDRESS	ZIP
Library, Broadneck	1275 Green Holly Dr, Annapolis	21401
Library, Brooklyn Park	1 East 11th Avenue, Baltimore	21225
Library, Crofton	1681 Riedel Road, Crofton	21114
Library, Eastport	269 Hillsmere Dr, Annapolis	21403
Library, Edgewater	25 Stepneys Lane, Edgewater	21037
Library Headquarters	5 Harry S. Truman Pkwy, Annapolis	21401
Library, Linthicum	400 Shipley Road, Linthicum	21090
Library, Maryland City	3501 Russett Common, Laurel	20708
Library, Mountain Road	4730 Mountain Road, Pasadena	21122
Library, North County	1010 East Way, Glen Burnie	21060
Library, Provinces	2624 Annapolis Rd, Severn	21144
Library, Riviera Beach	1130 Duvall Hwy, Pasadena	21122
Library, Severna Park	45 McKinsey Road, Severna Park	21146
Library, Deale Community (South County Lib.)	5940 Churchton Road, Deale	20751
Library, West County	1325 Annapolis Road, Odenton	21113
Misc, Chrysalis Group Home -- Boys/Girls	8148 Jumpers Hole Road, Millersville	21108
Misc, Group Home -- Mary Mount Manor Girls Home	25 Mary's Mount Road, Harwood	20776
Misc, Mount Moriah Church / Banneker Douglass Museum	84 Franklin Street, Annapolis	21401
Misc, Pumphrey Keaser Comm. Ctr.	5757 Belle Grove Road, Baltimore	21225
Misc, Ralph Bunch Comm. Ctr.	374 Mill Swamp Road, Edgewater	21037
Police Training Academy	3737 Elmer F Hagner Ln, Davidsonville	21035
Police, Dorsey	315 Dorsey Rd, Harmans	21077
Police, Eastern District	3700 Mountain Rd, Pasadena	21122
Police, Headquarters / Property	8495 Veterans Hwy., Millersville	21108
Police, Northern District	939 Hammonds Lane, Baltimore	21225
Police, Southern District	35 Stepneys Lane, Edgewater	21037
Police, Western District	8273 Telegraph Rd, Severn	21114
Rec & Parks, Administration Truman Pkwy	1 Harry S. Truman Pkwy, Annapolis	21401
Rec & Parks, Andover Equestrian Center	Andover Rd, Linthicum	21090
Rec & Parks, Annapolis High Court	Riva Road, Annapolis	21401
Rec & Parks, Arden of the Severn Park	1103 Sunrise Beach Road, Crownsville	21032
Rec & Parks, Arnold Park	1325 Jones Station Road, Arnold	21012
Rec & Parks, Arundel Hills Park	1209 Furnace Branch Road, Ferndale	21060
Rec & Parks, Arundel Olympic Swim Center	2690 Riva Rd, Annapolis	21401
Rec & Parks, Arundel Village	705 Cross Street, Brooklyn	21225
Rec & Parks, B&A Bike Trail Railroad Substation	Jones Station Rd and B&A Trail, Severna Park	21146
Rec & Parks, B&A Bike Trail Ranger Station	51 Earleigh Heights Rd, Severna Park	21146
Rec & Parks, B&A Bike Trail Station Office	1 Holly Rd, Severna Park	21146
Rec & Parks, Bachman Athletic Complex	570 East Ordnance Rd, Baltimore	21226
Rec & Parks, Bacontown Park	3602 Whiskey Bottom Road, Laurel	20724
Rec & Parks, Bay Head Park	1651 Bay Head Rd, Annapolis	21401
Rec & Parks, Bell Branch Park	2400 Davidsonville Rd, Gambrills	21054
Rec & Parks, Belvedere Park	300 Broadwater Road, Arnold	21012
Rec & Parks, Bestgate Park	716 Bestgate Road, Annapolis	21401
Rec & Parks, Beverly/Triton Beach	1399 Triton Beach Road, Mayo	21106
Rec & Parks, Bodkin Park	8263 Bodkin Avenue, Pasadena	21122
Rec & Parks, Broadneck	618 Broadneck Road, Arnold	21012

LOCATION	ADDRESS	ZIP
Rec & Parks, Broadneck Caretaker	Broadneck Road, Arnold	21012
Rec & Parks, Brooklyn Park 1	340 West 10th Street, Brooklyn	21225
Rec & Parks, Brooklyn Park 2	101 11th Avenue, Brooklyn	21225
Rec & Parks, Brownswood Park	317 Forest Beach Road, Annapolis	21401
Rec & Parks, Cape St. Claire Park	1000 Magothy Park Lane, Annapolis	21401
Rec & Parks, Carrs Wharf	1000 Carr's Wharf Road, Mayo	21106
Rec & Parks, Cecil Avenue Ranger Station	1003 Cecil Avenue, Gambrills	21054
Rec & Parks, Cedar Hill Park	Arundel Corp Road, Glen Burnie	21061
Rec & Parks, Compass Pointe Golf Courses	9010 Fort Smallwood Rd., Pasadena	
Rec & Parks, Cook Farm Caretaker	2793 Bayside Road, Pasadena	21122
Rec & Parks, Corridor Park	1758 Crownsville Road, Crownsville	21032
Rec & Parks, Corridor Park Caretaker	Crownsville Road, Crownsville	21032
Rec & Parks, Crofton Park	2295 Davidsonville Road, Crofton	21114
Rec & Parks, Cypress Creek Park	16 Cypress Creek Road, Severna Park	21146
Rec & Parks, Davidsonville Family Rec Center	3789 Queen Anne Bridge, Davidsonville	21035
Rec & Parks, Davidsonville Park	960 W. Central Avenue, Davidsonville	21035
Rec & Parks, Deale Wharf	511 Deale Road, Deale	20751
Rec & Parks, Deale/Tracys Park	20 Deale Road, Deale	20751
Rec & Parks, Downs Park	8311 John Downs Loop, Pasadena, MD. LOCAT	21122
Rec & Parks, Dwight D. Eisenhower Golf Course	Generals Highway, Annapolis	21401
Rec & Parks, Edgewater Park	209 Maryland Avenue, Edgewater	21037
Rec & Parks, Elvaton Park	311 Dogwood Road, Millersville	21108
Rec & Parks, Freetown Rec. Center	7769 Freetown Road, Pasadena	21122
Rec & Parks, Friendship Park	1501 Dorsey Road	21061
Rec & Parks, Ft. Smallwood Park	9500 Ft. Smallwood Rd., Pasadena	21122
Rec & Parks, Galesville Wharf	4847 Riverside Drive, Gambrills	21054
Rec & Parks, Glen Burnie Park	499 Elizabeth Road, Glen Burnie	21061
Rec & Parks, Glen Burnie Town Center Ice Rink	101 Crain Highway, Glen Burnie	21061
Rec & Parks, Golf Course	Generals Highway, Crownsville	21032
Rec & Parks, Hammonds Park	501 Hammonds Lane, Crownsville	21032
Rec & Parks, Hancock's House	2793 Bayside Rd, Pasadena	21122
Rec & Parks, Hancocks Resolution	2795 Bayside Beach Road	21122
Rec & Parks, Harmans Park	7551 Ridge Road, Hanover	21076
Rec & Parks, Havenwood Park	7923 Outing Avenue, Pasadena	21122
Rec & Parks, Herald Harbor Park	350 Kyle Road, Crownsville	21032
Rec & Parks, High Point Park	7723 Overland Road, Pasadena	21122
Rec & Parks, Jacobsville Park	85 Magothy Beach Road, Pasadena	21122
Rec & Parks, Jessup 1 Park	1834 Montevideo Road, Jessup	20794
Rec & Parks, Jessup Provinces Park	Disney Road, Jessup	20794
Rec & Parks, Jessup YMCA	2668 Jessup Road, Jessup	20794
Rec & Parks, Jessup/Dorsey Park	7486 Race Road, Jessup	20794
Rec & Parks, Joe Cannon Baseball Stadium	7551 Ridge Rd, Hanover	21076
Rec & Parks, Joe Cannon Caretaker	7553 Teague Rd, Hanover	21076
Rec & Parks, Jonas Green Park	1990 Ritchie Highway, Annapolis	21401
Rec & Parks, Jug Bay Caretaker	Wrighton Road, Lothian	20711
Rec & Parks, Jug Bay Wetlands Sanctuary	1361 Wrighton Rd, Lothian	20711
Rec & Parks, Kinder Park (Athletic Field)	1001 Kinder Farm Park Road, Millersville LOCAT	21108

LOCATION	ADDRESS	ZIP
Rec & Parks, Kinder Park	146 Upper Kinder Road, Severna Park	21146
Rec & Parks, Lake Shore Athletic Complex	863 Woods Road, Pasadena	21122
Rec & Parks, Lake Waterford	830 Pasadena Road, Pasadena	21122
Rec & Parks, Lake Waterford Park	8291 Baltimore Annapolis Blvd, Pasadena	21122
Rec & Parks, Linthicum Park	214 Sycamore Road, Linthicum	21090
Rec & Parks, Loch Haven Park	660 Loch Haven Road, Edgewater	21037
Rec & Parks, Londontown Publik House	839 Londtown Road, Edgewater	21037
Rec & Parks, Londontown Publik House & Gardens	839 Londontown Rd, Edgewater	21037
Rec & Parks, Mago Vista Park	832 Mago Vista Road, Arnold	21012
Rec & Parks, Maryland City Rec. A.	565 Brockbridge Road, Laurel	20724
Rec & Parks, Mayo Beach	4150 Honeysuckle Drive, Mayo	21106
Rec & Parks, Mayo Beach Park	4150 Honeysuckle Dr, Edgewater	21037
Rec & Parks, Meade Village Rec. Center	1130 Meade Village Drive, Severn	21144
Rec & Parks, North County Aquatics Center	7888 Crain Hwy, Glen Burnie	21061
Rec & Parks, North Glen Park	1400 Gordon Court, Ferndale	21060
Rec & Parks, Odenton Park (GORC)	921 Strawberry Lakeway, Odenton	21113
Rec & Parks, Overlook Park	Milton Avenue, Linthicum	21090
Rec & Parks, Peninsula Park/Arundel on Bay	1005 Bay Ridge Road, Annapolis	21401
Rec & Parks, Pleasantville Park	830 Cedar Branch Road, Glen Burnie	21061
Rec & Parks, Point Pleasant Park	Dumberton Road, Glen Burnie	21061
Rec & Parks, Poplar Ridge/Ft. Smallwood	1720 Poplar Ridge Road, Pasadena	21122
Rec & Parks, Provinces Park	Disney Road, Severn	21144
Rec & Parks, Pumphrey Park	5757 Belle Grove Road, Brooklyn	21125
Rec & Parks, Queenstown Park	580 Queenstown Road, Severn	21144
Rec & Parks, Quiet Waters Park	602 Quiet Waters Park Rd., Annapolis	21403
Rec & Parks, Randazzo/Upton Softball	582 Upton Road, Severn	21144
Rec & Parks, Riva Park	3629 Riva Road, Annapolis	21401
Rec & Parks, Riverside Park	2 Old Riverside Road, Brooklyn	21225
Rec & Parks, Riverwood Park	1542 Morgon Road, Davidsonville	21035
Rec & Parks, Rock Creek Park	79 Bar Harbor Road, Pasadena	21122
Rec & Parks, Sawmill Creek	301 Dorsey Road, Glen Burnie	21061
Rec & Parks, Severn/Danza Park	726 Donaldson Avenue, Severn	21144
Rec & Parks, Shady Side Park	1355 East W. Shady Side Road, Shady Side	20764
Rec & Parks, Shipley's Choice	300 Gov. Wm. Stone Pkwy	21032
Rec & Parks, Smith Horse Farm	580 Broadneck Road	21401
Rec & Parks, South County Softball Field	5385 Solomons Island Road, Lothian	20711
Rec & Parks, South River Farm	Loch Haven Drive, Edgewater	21037
Rec & Parks, Solley Park	7535 Solley Road	21061
Rec & Parks, South County Rec Center	4510 Owensville Sudley Rd, Harwood	20776
Rec & Parks, South River Farm Caretaker	Loch Haven Road, Edgewater	21037
Rec & Parks, South Shore Trail		
Rec & Parks, Southgate/Old Mill Park	8226 Elvaton Road, Millersville	21108
Rec & Parks, Sunset Park	500 Fort Smallwood Road	21122
Rec & Parks, Thomas Point	3890 Thomas Point Road	21401
Rec & Parks, Tick Neck Park	7750 Edwin Raynor Boulevard	21122
Rec & Parks, Towers Branch Park	Evergreen Ave & Jackson Blvd, Gambrills	21054
Rec & Parks, Triton/Beverly Beach	1399 Triton Beach Road, Mayo	21106

LOCATION	ADDRESS	ZIP
Rec & Parks, Twin Oaks	240 Peninsula Farm Road, Arnold	21012
Rec & Parks, Waterbury Park	1261 Sunrise Beach Road, Crownsville	21032
Senior Center, Arnold	44 Church Road, Arnold	21012
Senior Center, Annapolis (Bates)	119 Southvilla Rd, Annapolis	21401
Senior Center, Brooklyn Park	202 Hammonds Lane, Brooklyn Park	21225
Senior Center, O'Malley	1275 Odenton Road, Odenton	21113
Senior Center, O'Malley Annex	1270 Odenton Road, Odenton	21113
Senior Center, Pasadena	4103 Mountain RD, Pasadena	21122
Senior Center, Pascal	125 Dorsey Road, Glen Burnie	21061
Senior Center, South County	27 Stepneys Lane, Edgewater	21037
Anne Arundel Community College	101 College PKWY, Arnold	

CITY OF ANNAPOLIS

LOCATION	ADDRESS
1st, 3rd, 5th & 6th Streets & Spa Creek	Eastport
Acton Cove Park	
Amos Garrett Park	
Annapolis Maritime Museum	2nd Street & Back Creek
Annapolis Sports Complex	Locust Avenue
Annapolis Walk Community Park	Belle Drive
Barbara Neustadt Park	Monticello Avenue & Spa Creek
Bates Athletic Complex	(behind Bates Middle School)
Bates Heritage Complex	Smithville Road
Burnside Park	Eastport
Chambers Park	Dorsey Avenue & Kirby Lane
College Creek Park	Clay Street & College Creek
Commodore John Barry Park	Prince George Street
Davis Park, 4th Street	Eastport
Ellen O. Moyer Nature Park	Back Creek Edgewood Road
Fleet Street Park	Historic District
Horn Point,	Chesapeake Avenue, Eastport
Jeremy's Way, Eastport	Eastport
Kingsport Playground	
Lafayette Avenue & Spa Creek	
Leon Wolfe, 4th Street & Spa Creek	
Naval Academy Stadium Trail	
Newman Street Playground	
Northwest Street End Park	
"Pip" Moyer Recreation Center	273 Hilltop Lane
Poplar Park and Trail	
Post Office Park	Eastport
Primrose Acres	Garden Gate Lane & Edelmar Drive
Rev. Joseph J. Turner Park	3rd Street & Chester Avenue
Richard B. "Dick" Sims Park	2nd Street & Back Creek
Severn Avenue & Spa Creek	Eastport
Spa Creek Trail	
Stanton Community Center	West Washington Street
Truxtun Park	Hilltop Lane
Tucker Street	West Annapolis
Waterworks Park	260 Defense Highway
Weisman Park	Inner West Street
Whitmore Park	Calvert & Clay Streets
Chesapeake Childrens' Museum	25 Silopanna RD, Annapolis

LOCATION	STATE	ADDRESS
Sandy Point State Park		1100 East College PKWY, Annapolis
Crownsville Fairgrounds		1581 Crownsville RD, Crownsville
Annapolis Maritime Museum		723 2nd St., Annapolis, MD 21403

FEDERAL

LOCATION	ADDRESS
US Naval Academy	121 Blake Rd, Annapolis, MD 21402
Fort George G. Meade Military Base	Fort Meade, MD 20755
Smithsonian Environmental Research Center	647 Contees Wharf Rd, Edgewater, MD 21037



Maryland

Department of the Environment

Larry Hogan
Governor

Boyd Rutherford
Lieutenant Governor

Ben Crumles
Secretary

March 24, 2017

Mr. Rhody Holthaus, Deputy Director
Anne Arundel County Department of Public Works
2662 Riva Road
Annapolis, MD 21401

Dear Mr. Holthaus:

The Maryland Department of the Environment (the "Department") has completed its review of Anne Arundel County's (the "County") Ordinance (Bill No. 85-16) regarding amendments to the County's 2013-2023 Solid Waste Management Plan (the "Plan") that was received on January 11, 2017.

Amendments provided in the Ordinance include the addition of a scrap tire processing and recycling facility and a special medical waste facility to the Plan. The County Council adopted the Plan amendments on December 20, 2016, and submitted the Ordinance to the Department for its review and approval in response to the requirements of Section 9-503(c) of the Environment Article, Annotated Code of Maryland.

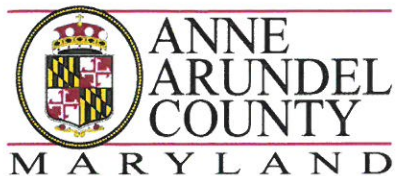
Based on this review, the Department has determined that the adopted resolution satisfies the requirements of Section 9-503(c) of the Environment Article, Annotated Code of Maryland, and Code of Maryland Regulations 26.03.03. In accordance with Section 9-507(a) of the Environment Article, Annotated Code of Maryland, the Plan amendments are approved.

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 on these matters, please contact Mr. John Sullivan, Program Manager, Resource Management Program, at 410-537-3314, or john.sullivan1@maryland.gov, or you may contact me at 410-537-3304.

Sincerely,

Hilary Miller, Director
Land Management Administration

cc: Honorable Steven R. Schuh, Anne Arundel County Executive
Richard Bowen, Anne Arundel County
John Sullivan



County Executive Steven R. Schuh

Christopher J. Phipps, P.E.
Director, Department of Public Works

Bureau of Waste Management Services
Heritage Complex
2662 Riva Road
Annapolis, Maryland 21401

January 3, 2017

Ms. Hillary Miller, Director
Land Management Administration
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230

Dear Ms. Miller:

Bill No. 85-16 amending Anne Arundel County's 2013 Solid Waste Management Plan (Plan) was passed by the Anne Arundel County Council on December 19 and approved and enacted by the County Executive on December 20, 2016. The amendment recognizes two private facilities located within Anne Arundel County.

Enclosed is a copy of the adopted legislation. Once we receive the Department's final approval letter, it will be included along with Bill 85-16 in Appendix D, Amendments to the Plan.

If you have questions, please contact Mr. Richard Bowen, Recycling and Waste Reduction Division Manager, at 410-222-7951.

Sincerely,

A handwritten signature in dark ink, appearing to read "Rhody Holthaus", with a long horizontal flourish extending to the right.

Rhody Holthaus
Deputy Director

**Recycle.
More.Often.**

Telephone: 410-222-7425 Mailstop: 7406 Fax: 410-222-4484
Web Address: www.aacounty.org/dpw/WasteManagement
Recycled Paper

Maryland Department of the Environment
Re: Bill No. 85-16
January 3, 2017

Page 2

bcc: Tariq Masood with encl.
Christopher J. Phipps, P.E.
Stephen Krajcsik, P.E.
Richard Bowen

**Recycle.
More Often.**

Telephone: 410-222-7425 Mailstop: 7406 Fax: 410-222-4484
Web Address: www.aacounty.org/dpw/WasteManagement
Recycled Paper

FINAL

COUNTY COUNCIL OF ANNE ARUNDEL COUNTY, MARYLAND

Legislative Session 2016, Legislative Day No. 39

Bill No. 85-16

Introduced by Mr. Fink, Chairman
(by request of the County Executive)

By the County Council, November 21, 2016

Introduced and first read on November 21, 2016
Public Hearing set for and held on December 19, 2016
Bill Expires February 24, 2017

By Order: Elizabeth E. Jones, Administrative Officer

A BILL ENTITLED

1 AN ORDINANCE concerning: 2016 Amendments to the Solid Waste Management Plan
2 2013

3
4 FOR the purpose of amending the Anne Arundel County Solid Waste Management Plan
5 2013 to include reference to certain private facilities; and generally relating to the
6 Anne Arundel County Solid Waste Management Plan.
7

8 BY repealing and reenacting, with amendments: § 18-2-103(a)(5)(vii)
9 Anne Arundel County Code (2005, as amended)
10

11 SECTION 1. *Be it enacted by the County Council of Anne Arundel County,*
12 *Maryland,* That Section(s) of the Anne Arundel County Code (2005, as amended) read as
13 follows:
14

15 **ARTICLE 18. ZONING**

16
17 **TITLE 2. GENERAL PROVISIONS**

18
19 **18-2-103. Planning for future development.**
20

21 (a) **Guides.** The following documents shall be used as a guide in the future
22 development of land in and location of public services and facilities by the County:
23

24 (5) the following additional County plans:

EXPLANATION: CAPITALS indicate new matter added to existing law.
[Brackets] indicate matter stricken from existing law.

(vii) the Anne Arundel Solid Waste Management Plan 2013, as adopted by Bill No. 91-13 [and], AS amended by Bill No. 75-15 AND AS FURTHER AMENDED BY BILL NO. 85-16.

SECTION 2. *And be it further enacted*, That the Anne Arundel County Solid Waste Management Plan 2013 is hereby amended as follows:

1. On page 3-46, after Section 3.7.3, insert the following:

“3.7.4 Scrap Tire Processing & Recycling

K&K Tires, Inc.

K&K Tires, Inc. (“K&K”) is an existing privately owned, full-service scrap tire processing company located at 816 Oregon Avenue, Linthicum, MD 21090. K&K’s primary operation is the processing of scrap tires into a raw material or product that is returned to the marketplace.”

2. On page 4-28, under “**Section 4.8.2 Special Medical Waste**”, strike:

“County facilities do not accept special medical wastes, including infectious or bio-hazardous medical waste. The County does not have authority to accept special medical waste and it is not addressed in this plan. These wastes are managed by MDE under specific medical waste regulations.”

and substitute:

“County facilities do not accept special medical wastes, including infectious or bio-hazardous medical waste. The County does not have authority to accept special medical waste. These wastes are managed by MDE under specific medical waste regulations. *See* Section 5.14.1.”

3. On page 5-34, under “**Section 5.14.1 Proposed Private Waste Processing Facilities**” strike:

“Currently there are no proposed private waste processing facilities located in the County.”

and substitute:

“Currently, there is one (1) proposed private processing facility and transfer station with a permit application under review by the MDE. This facility is Biomedical Waste Services Inc. The proposed facility has not yet obtained its Refuse Disposal Permit.

Biomedical Waste Services, Inc.

Owner: Biomedical Waste Services, Inc.

MDE Permit: Permit Application Under Review by MDE

The proposed Biomedical Waste Services facility is planned to be sited at 7610 Energy Parkway, Baltimore, Maryland 21230, located within Anne Arundel County. The proposed operation involves the acceptance, processing and transfer of special medical waste. The processing component will involve the use of an autoclave for the purpose of sterilization and compaction of the medical waste prior to transfer.


The County's Office of Planning and Zoning has reviewed Biomedical Waste Services Inc.'s proposed operation and determined that it is allowed in the Zoning Code as a permitted use in the W2-Industrial District."

SECTION 3. *And be it further enacted*, That the Anne Arundel County Solid Waste Management Plan 2013, as amended by this Ordinance, is incorporated herein by reference as if fully set forth. A copy of the Anne Arundel County Solid Waste Management Plan 2013, as amended by this Ordinance, shall be permanently kept on file with the Administrative Officer to the County Council, the Office of Planning and Zoning, and the Department of Public Works.

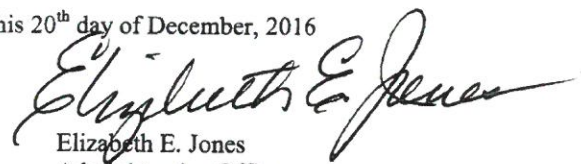
SECTION 4. *And be it further enacted*, That this Ordinance shall take effect 45 days from the date it becomes law.

READ AND PASSED this 19th day of December, 2016

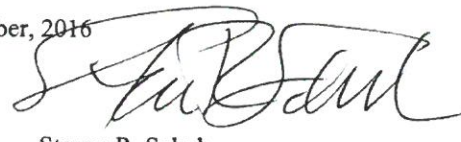
By Order:


Elizabeth E. Jones
Administrative Officer

PRESENTED to the County Executive for his approval this 20th day of December, 2016



Elizabeth E. Jones
Administrative Officer

APPROVED AND ENACTED this 20th day of December, 2016


Steven R. Schuh
County Executive

EFFECTIVE DATE: February 3, 2017

I HEREBY CERTIFY THAT THIS IS A TRUE AND CORRECT COPY OF BILL NO. 85-16. THE ORIGINAL OF WHICH IS RETAINED IN THE FILES OF THE COUNTY COUNCIL.


Elizabeth E. Jones
Administrative Officer

**Anne Arundel County
Ten Year Plan Update
2013-2023**

**Appendix E
Anne Arundel County Program Development Documents
& Recycling Initiatives**

**Anne Arundel County
Residential Recycling Advisory Committee Report**

County Executive John R. Leopold
Arundel Center
44 Calvert Street
Annapolis, MD 21401

December 13, 2010

Dear County Executive Leopold:

I am pleased to submit the final report prepared by the County's Residential Recycling Advisory Committee (RAC) for your review. The report includes the RAC's recommendations for increasing the residential recycling rate across the County, along with additional, more general recommendations for broadening the County's Recycling Program. Since September 2009, the RAC has reviewed, discussed and debated a wide variety of topics important to recycling initiatives in Anne Arundel County. We have concluded that implementing the recommendations presented in this report will allow the County to meet, and possibly exceed, its 50% residential curbside recycling goal.

On behalf of the Committee, I want to extend our thanks for giving us the opportunity to assist in developing proposals for a program that is tremendously important to all of us. In the course of our tenure, all of us on the RAC have been deeply impressed with the high caliber of both the staff and the programs of the County's recycling office. Our report is intended to help Anne Arundel County to build on the substantial successes this program has already achieved.

Should you have any questions regarding the report, please do not hesitate to contact me. We look forward to hearing back from you.

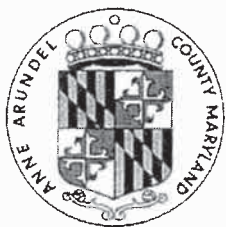
Sincerely,

Joanna Bache Tobin, Ph.D.
Chair



Kate Fritz, LEED Green Associate
Vice-Chair





Final Report

Anne Arundel County
Residential Recycling Advisory
Committee (RAC)

December 2010

Submitted by:

Joanna Bache Tobin, Ph.D., Chair
Kate Fritz, LEED Green Associate, Vice-Chair
Maria Broadbent
Jerry Pesterfield
C. Ann Chaffee
Anne-Marie Dammeyer
Linda Flannery-Liebermann
Deb Frank
Becky Fredericks
Susan Gustafson
Garry Holtzman
Amy Miller
Nancy O'Donnel
Gary O'Neil
Colin Rand
Celeste Riddle
Patricia Roop
Richards Steinbock
Lauren Symmes
Susan Venter

Executive Summary

Appointed in August 2009, the Residential Recycling Advisory Committee (RAC) has been meeting monthly to discuss, research, and review best practices for increasing the residential recycling rate for Anne Arundel County. The Committee, comprised of 20 citizens, was appointed by County Executive Leopold for a one year term, set to end in December 2010. This Final Report is the documentation of the RAC's year-long work.

The Final Report includes many recommendations, but prioritizes the Service Change Proposal (**Appendix A**) as being the most critical to positively impact the residential recycling rate in the short-term. The proposal involves moving from two times a week trash pick-up and once a week recycling pick-up, to a one-and-one trash and recycling pickup. Through conversations with DPWT staff, professionals in the solid waste management field, other governmental entities, and research into best practices, the RAC determined that this change in service would help move Anne Arundel County quickly towards reaching its 50/50 recycling goal. The details of the service change proposal are found in the body of this report. Other major recommendations from the RAC include:

- Encourage increased recycling in schools
- Encourages increased business recycling
- Encourage recycling in high density residential areas
- Expand recycling for communal and seasonal-use areas
- Provide outreach to new county residents
- Increase citizen-to-citizen outreach
- Create recycling awards/rewards/incentives
- Increase media outreach

While the RAC was originally appointed for a one year term, members feel strongly that there are opportunities for the Committee to continue into the future. The RAC would be administered differently, with less formal whole-committee meetings, and more subcommittee work in the areas recommended in this report. The DPWT staff have expressed their interest in the RAC continuing to help support and expand outreach efforts to residents, schools, and businesses in the county. A specific example of the RAC's continued work could be to work closely with schools in educating the staff on recycling and its benefits.

This Final Report sums up the feelings of the Recycling Advisory Committee, and conveys their interest in continuing to assist county staff in future endeavors. Anne Arundel County's aggressive and well-designed recycling initiative has laid the framework for increasing recycling and changing behaviors, while allowing for more citizen input and assistance. The RAC hopes to continue its work alongside the county staff until the 50/50 recycling goal has been met.

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I. Introduction

This is the final report detailing the work and history of the Residential Recycling Advisory Committee (RAC), along with the final proposals presented by the RAC for raising the recycling rate in Anne Arundel County, Maryland. The RAC met from September 2009 to November 2010. This report is intended to reflect, to the fullest extent possible, the activities and conversations undertaken by the RAC as it worked towards developing its final proposals for helping the County to meet and to surpass the its goal of an average County-wide residential recycling rate of 50% trash and 50% recycling, by weight (the 50/50 goal), and to extend the life of the County's landfill.

II. History of the RAC

The RAC was formed at the direction of County Executive Leopold in August of 2009, and held its inaugural meeting in September of that year. Membership for the RAC was solicited through an announcement in The Capital newspaper. The goals of the RAC were stated broadly as reviewing policy and helping the County to reach the 50/50 recycling goal. Interested citizens were asked to apply by submitting a letter indicating their background and reasons for wanting to participate. James Pittman, Deputy Director, Waste Management Services and Richard Bowen, Solid Waste Recycling Manager, reviewed the applications and recommended the committee of 20 members from throughout the County, as well as the Chair and Vice-Chair. The County Executive made all Committee appointments. The Vice-Chair, Jerry Pesterfield, resigned due to family concerns in February of 2009. Subsequently Kate Fritz was appointed to the position of Vice-Chair of the RAC.

The RAC spent the first several months of its existence engaged in learning as much as possible about the County's recycling program and the services provided by the Waste Management Division. The staff gave several extensive presentations to the RAC, outlining the history of the recycling program, including information regarding current initiatives and programs, and in December 2009 a number of RAC members were able to attend a tour of the Millersville Landfill, where they also observed a trash sort, followed by a tour of the Elkridge facility that sorts the County's recycling.

Beginning in January 2010, the RAC turned its attention to reviewing specific policies, and drafting policy proposals for reaching and surpassing the 50/50 goal. Since January, the RAC has met regularly every month, with one break scheduled for August. Staff is no longer present routinely at all RAC meetings, only those at which their expertise and input are required regarding particular issues under discussion by the RAC.

The following is a summary of the activities undertaken by the RAC to date:

- **Formed three ad hoc subcommittees** focusing on Schools, Media, and Business. Each subcommittee was tasked with the goal of developing proposals to increase recycling rates and educational opportunities in these different areas. (May 2010 – November 2010)
- **Assisted Recycling staff at public outreach events.** Several members of the RAC assisted at various community events throughout the year, handing out bins and information, and speaking individually with members of the public who stopped by the booths with questions. Committee members also initiated participation in a number of events, including HOA meetings, community "green" events, Earth Day celebrations, Church markets, and others, effectively extending the reach of the recycling staff for a greater presence at multiple community events. (March 2010 – current)

- **Initiated visioning for the future of the RAC.** At the July 2010 meeting of the RAC, a portion of the agenda was devoted to a visioning session concerning the goals and future of the RAC. Following that visioning session, an online survey was sent to the members of the committee to solicit their views on the RAC's mission and goals, going forward, as well as structural changes that might help the committee better achieve its goals. (July 2010 – September 2010)
- **Wrote and published an article on recycling in the Capital newspaper.** The article, "Recycling Makes Cents for Everyone," was written by several members of the Media subcommittee, and published in the "Our Bay" section of the Capital. (August 2010)
- **Drafted and voted upon a Service Change Proposal,** recommending a change from twice-weekly trash collection to once-weekly trash collection, preferably to occur on the same day as recycling collection. (January 2010 – July 2010)
- **Several members attended a business recycling seminar,** sponsored by the Main Street Maryland program. The meeting took place in Frederick County and was also broadcasted on the internet. Frederick, Howard, and Montgomery Counties presented commercial recycling options that Anne Arundel County may consider in the future. (April 2010)
- **Served as a focus group** for choosing the story line for a new recycling commercial, and for mailing and handout materials.
- **Two members were interviewed** by the County Executive as a part of his local TV broadcast show about the efforts of the RAC.

III. Proposals for Increasing the County-Wide Recycling Rate

Overview of RAC's Proposals

When the RAC was formed in August of 2009, the County's Waste Management Division had already undertaken an extensive marketing and public outreach campaign that had begun in March of 2008. This was the "Recycle More Often" campaign which had already raised the County's average recycling rate from approximately 31% to 35%. Thus the RAC was formed in an institutional environment that was already very pro-actively promoting recycling. As the RAC met throughout its appointed term, discussions focused on two central areas: proposals that would affect the immediate management of the waste stream, and behavioral changes which could affect the waste stream over the long-term.

A central theme emerging from the conversations of the RAC was that in order to raise the recycling rate significantly throughout the County, moving beyond the focus on single-family homes as the central locus of recycling will be required. This may necessitate something of a paradigm shift as it requires thinking about recycling services in a different way than has previously been done. It is the RAC's contention, however, that if we are to be successful in encouraging individuals to adopt recycling as a central and fundamental way of disposing of waste, efforts to encourage recycling need to encompass not only single family homes, but all the areas where the residents of Anne Arundel County live, learn, work and play.

In light of the committee's title as the Residential Recycling Advisory Committee, this assertion may seem to stray beyond the parameters that were set forth initially for the RAC's activities. As the RAC began to delve more deeply into ways to increase recycling, however, it became apparent that raising the County's recycling rate would necessitate moving beyond the single-family residential realm.

This assertion also raises additional questions about the numbers that have been used to date to report the County's recycling rate. Specifically the average recycling rate, which is the basis for the 50/50 goal, is a measure of residential recycling only. As such it does not reflect recycling that individual residents take to the County's convenience centers (a practice more common in the rural areas of the County), nor does it reflect business and high-density residential recycling that is handled by private haulers. Thus the RAC suggests that the way recycling is reported, and the way the county's average recycling number is calculated, should be revised to more realistically reflect residents' recycling activity. Due to the ever-increasing amount of materials accepted for recycling, it is proposed to revisit the 50% residential recycling goal in order to continue to increase residential recycling efforts.

Another of the most significant among the issues discussed was a strong sense, voiced by members of the RAC representing North County, that the needs of the more urban parts of the County were somewhat different from much of the rest of the County. The requirements of this part of the County will need to be addressed more specifically to raise the recycling rate in those areas significantly. In addition to further outreach and education directed towards those parts of the County, members felt materials, including multiple sizes of containers, lids, and possibly even metal containers, should be available.

With regard to proposals having to do with encouraging better recycling behaviors over the long-term, the Committee focused primarily on addressing ways to increase recycling in areas not presently covered by the County's curbside recycling pickup services. The RAC also explored numerous specific options and ideas for encouraging recycling in these additional areas. Thus, noted below each of the major proposals are strategies for implementing programs and initiatives the RAC recommends for each particular area.

Finally, the RAC recognizes that many of its proposals may carry additional implications. In keeping with its original charter, however, the Committee has determined that the proposals made here offer the best and most effective ways to raise the recycling rate across the County.

Proposals

- 1) **Change service to once-a-week trash pickup, with pickup scheduled on same day as recycling pickup, as soon as possible.**

Justification: This will discourage the use of the second trash pickup day as a way to dispose of extra recyclables, and will generally encourage a higher recycling rate. This change could also provide some cost savings, as well as less wear and tear on the roads, along with fewer added emissions from extra trucks running.

Strategies:

- a. See **Appendix A** for the specific details regarding the Service Change Proposal.
- b. Alongside staff, revisit the 50/50 residential recycling goal. There is potential to increase this goal since the county is approaching a 50% recycling rate.
- c. See **Appendix F** for research on service in other jurisdictions.

2) **Encourage Increased Recycling in Schools**

Justification: Emphasis on recycling at the earliest stages possible is the most likely way to encourage strong recycling behaviors in later years, and in other settings.

Strategies:

- a. Provide recycling bins for every classroom, along with bins in common areas such as cafeterias and sports fields.
- b. Develop incentive programs to encourage schools to use only recyclable and recycled products in the cafeterias.
- c. Develop a recycling in-service training unit for teachers, students and custodial staff.
- d. Encourage inclusion of recycling in curriculum whenever possible and appropriate, including programs at Arlington Echo Outdoor Education Center.
- e. Appoint a staff member as “Recycling Coordinator” for each school in the County.
- f. Continue, and increase where possible, outreach and education efforts on recycling in schools, including presentations, and sponsoring art and essay competitions.
- g. Develop a Recycling Month calendar, similar to the Maryland Math Month calendar (see **Appendix G**).
- h. Develop recognition programs for students and teachers who exhibit leadership in recycling efforts in their schools, such as a student “Recycling Captain” for each school and a County “Recycling Teacher of the Year.”
- i. Work with groups, such as Girl Scouts and Boy Scouts, to develop recognition programs for recycling, such as a recycling patch.
- j. Develop a recycling “mascot” to aid with presentations, and appear at recycling events (see **Appendix E**).
- k. Improve the coordination between Anne Arundel County Public Schools and Anne Arundel County Recreation and Parks Department to maximize recycling efforts at public venues, especially high-use sites such as County high schools.
- l. Coordinate with Anne Arundel County Public Schools to create a tracking and monitoring system for recycling.

3) **Encourage Increased Business Recycling**

Justification: Recycling in the business setting will encourage consistency of behavior, and therefore likely increase the overall recycling rate. Encouraging citizens to recycle at home, and increasing recycling opportunities at businesses sends a clear and consistent message for Anne Arundel County citizens on the importance of recycling everywhere.

Strategies:

- a. Increase the Small Business Recycling program capacity and availability through extensive outreach and education.
- b. Develop incentive programs, such as a “Green Business” designation, for County businesses that undertake, or significantly increase, recycling. This program could mimic the City of Annapolis’ Environmental Stewardship Program.
- c. Encourage businesses to apply for the Maryland Green Registry, which promotes active recycling at business locations.
- d. Develop a handout about recycling opportunities for businesses in the County. This brochure can be used for outreach by Waste Management Division staff along with RAC members.

- e. Develop a recycling tracking and monitoring system geared specifically toward business recycling efforts. Create a business recycling goal similar to the 50/50 Challenge for residential.

4) **Encourage Recycling in High Density Residential Areas**

Justification: This will enable a significantly larger portion of the residents of the County to participate regularly in recycling at their homes, which helps give a more consistent message.

Strategies:

- a. Offer multiple sizes of recycling containers, including smaller sizes and containers with lids, in order to best accommodate different lifestyles and living situations.
- b. Develop and support outreach and education presentations on recycling for residents, owners, and landlords of high density residential areas.
- c. Develop specific educational presentations aimed at the concerns of the more urban areas of the County to address the specific concerns of these residents.
- d. Develop incentive programs, such as a “Green Complex” designation, in recognition of complexes that undertake recycling and strive to increase their recycling rates.

5) **Expand Recycling for Communal and Seasonal-Use Areas**

Justification: Extending County recycling pickup services to communal areas, such as community beaches and sports fields owned by home owners’ associations and community associations, will encourage consistent recycling in communities even in areas not directly tied to single-family home, curbside pickup.

Strategies:

- a. Develop a designation, such as “special event area” to allow for County pickup at community beaches and sports fields.
- b. Continue to work with the Department of Recreation and Parks to increase single-stream recycling opportunities at all of their facility locations.

6) **Provide Outreach to New County Residents**

Justification: Providing as much information about the County’s recycling program as possible when new residents first move to the County will encourage them to become active recyclers early.

Strategies:

- a. Develop an informational program geared directly to realtors so they can give the information out to all their prospective buyers.
- b. Develop an information program geared specifically to property management companies in order to include literature in all new-tenant lease or own agreements.
- c. Include all recycling information with utility information, such as water bills, for new and existing residents.

7) **Increase Citizen-to-Citizen Outreach**

Justification: Recycling seems to be most successful when it comes as a bottom-up message, rather than a top-down message. Residents better understand the extent to which they must take ownership of the need for recycling in their community when the message comes from a fellow neighbor. Because of this, when the information is communicated one-on-one, citizen-to-citizen, it often carries significant weight.

Strategies:

- a. Develop a citizen group of “Recycling Ambassadors” who could attend public events, community and homeowners’ association meetings, and other such activities to give presentations and speak about the County’s recycling efforts. This group could be trained and supported by the County and the RAC in a way similar to the County’s Master Watershed Stewards Academy program.
- b. Increase outreach to underperforming service areas.
- c. Increase outreach to non English speaking communities.

8) **Create Recycling Awards/Rewards/Incentives**

Justification: Positive designations that reward service areas and communities for increased recycling rates can encourage greater recycling as well as community pride.

Strategies:

- a. Initiate additional recognition for service areas that have reached the 50/50 goal with a designation such as the “Golden Recycling Award.” Create a designation such as a “Green Ribbon Community” for communities that have reached the goal.
- b. Develop rewards such as decals for mailboxes in “Green Ribbon Communities”
- c. Post street signs indicating “Green Ribbon Community” designations, similar to signs presently used indicating “neighborhood watch” communities.
- d. Disseminate information on winners of “Green Ribbon Community” and “Golden Recycling Award” to realtors for distribution to prospective buyers.

9) **Increase Media Outreach**

Justification: Cultivating and maintaining consistent media outlets, such as local newspapers and websites, will keep recycling in the forefront, and offer easy access to updated information. These media outlets offer avenues for relaying updated information on recycling policies and rates, as well as providing information on particular strategies for increasing recycling and highlighting communities and delivery areas that have achieved high recycling rates.

Strategies:

- a. Create a weekly or monthly “Trash Talk” article to appear in local news outlets.
- b. Continue staff supported Facebook and Twitter pages.
- c. Increase e-mail distribution lists and provide for more regular e-mail blasts to citizens.
- d. A “Google Group” created and promoted by the RAC to encourage recycling..
- e. Increase outreach to non-English publications and media outlets.

IV. **Future of the RAC**

The initial appointment of RAC members was to end in December 2010. The activities initiated by the RAC in its first year, however, suggest that it is desirable that Anne Arundel County continue to have a standing Recycling Advisory Committee. Should the County Executive wish to extend the life of the RAC, we propose several structural changes to the Committee. Our goals in proposing these changes are to ensure appropriate continuity in RAC membership, as well as greater diversity, and to maximize the RAC’s efficiency and efficacy. The RAC proposes to work more specifically in subcommittees, meeting as a whole committee on a much less frequent basis, and possibly at different locations around the County

as a way of highlighting various recycling initiatives and issues in different communities. Members will be expected to work on the subcommittees of their interest, and occasionally within the context of the larger group, as needed. We propose changes in the following areas:

- **Change the name of the Committee to Citizens' Recycling Advisory Committee** in order to more accurately reflect the full nature and extent of the RAC's activities.
- **Committee Membership Solicitation and Composition.** In addition to the appeal placed in The Capital newspaper, we propose more targeted appeals to particular populations that are not presently in evidence in committee membership. We advocate for representation from each service area, with specific need for stronger representation from the areas of the County where the recycling rates are low. Outreach through community groups and HOA's in those areas might offer one possible avenue for recruitment. We also need greater participation from populations where we have traditionally encountered cultural and linguistic barriers to getting the recycling message out. Again, working through community organizations that represent some of these populations could be a way of increasing membership on the RAC from these groups. Age diversity is also important, and we propose that one position on the RAC should be reserved specifically for a high school student from the county. We also propose that the RAC should seek to have at least one member who is a local business owner, a member of the Board of Education, and a member from one of the area's non-profit organizations.
- **Standing Subcommittees.** At present, the RAC fulfills two central functions: policy review and outreach and education. We propose that there should be two standing subcommittees, one for each of these areas. The entire RAC would meet and vote on policy changes, but it would be the work of the policy review subcommittee to determine which policies came before the committee as a whole. Members of the outreach and education subcommittee, on the other hand, would be responsible for supporting staff at public events, initiating involvement at new events, and promoting educational opportunities in general. The standing subcommittees would be in addition to any ad hoc subcommittees or task forces formed to address specific time-sensitive issues.
- **Expectations for RAC Members.** Membership would include attendance at regular RAC meetings as well as any relevant subcommittee meetings, with a commitment of approximately 4 hours of time per month. Each Committee member would be expected to join one of these subcommittees. This would allow for individual preference, as members are generally inclined to prefer one or the other of these areas.
- **Terms.** Each member would be expected to commit to a two-year term, and the terms would be staggered, to ensure continuity. The RAC would suggest members for appointment to the County Executive. The County Executive would then appoint RAC members with the possibility of extension.
- **Officers.** In addition to the Chair and Vice-Chair, we propose that there also be a Secretary. As a Citizens Advisory Committee, it is particularly important that the minutes of the RAC's meetings be as thorough and accurate as possible. Subcommittee Chairs would also be appointed for each of the standing subcommittees and ad hoc groups, in order to ensure reporting and recording of the subcommittee's work.
- **Post Minutes Online.** As recycling is a topic that is focused heavily on citizen involvement, it is important that the work of the RAC should be as visible and transparent as possible. To that end,

we propose that, after minutes have been circulated for comment to both the RAC members and the staff, the minutes of each RAC meeting be posted on the County's recycling website.

APPENDIX A

Service Change Proposal

RAC Service Change Proposal

The Recycling Advisory Committee of Anne Arundel County, Maryland recommends that the second day of trash collection should be discontinued. The RAC strongly recommends that this change should be made before 2014, when the next contracts are up for renewal, and preferably as soon as possible. The RAC also strongly recommends that trash and recycling collection should occur on the same day.

The committee has concluded that this service change will have the following results:

- increase recycling rates throughout the county
- extend the life of the Millersville landfill
- present a possible cost savings
- reduce the environmental impact of trash collection by reducing fuel use, emissions, and wear and tear on the roads

In order to facilitate this service change, the RAC also recommends the following:

1. Additional materials:
 - a. Lids for recycling containers for those residents who request them.
 - b. Metal containers for those areas that have a significant problem with vermin.
 - c. Multiple sizes of containers to include a smaller size as well as the larger current size. The county should also make large size bins with wheels and covers available to residents at an additional cost (similar to the bins used presently in Howard County).
 - d. Phasing in containers in all sizes that can be used with automatic “tippers” on collection trucks.
2. Education/Outreach:
 - a. Send informational mailings to all residents in those areas of the county about to undergo collection contract renewal alerting them to the coming service change several months before the change occurs.
 - b. Hold informational meetings with community groups and HOAs in areas about to undergo collection contract renewal.
 - c. Focus on developing increased opportunities for distributing materials and recycling bins in areas about to undergo contract renewal for several months prior to service change, such as informational tables at shopping centers, handing out bins and information at community events, etc.

APPENDIX B

The Capital Article

Recycling makes cents for everyone

Ahh, summertime, time to relax and enjoy those backyard cookouts. You've eaten your fill of burgers, deviled eggs, corn on the cob, and now it's time to throw away your trash.

But wait!

You're standing over that big yellow recycling bin, right next to the gray trash can. Sure, you know that your aluminum can go in the recycling bin, but what else? Not sure, you toss your plastic fork, red Solo cup and Chinet plate in the trash can, along with the corn cob and dirty napkin. Yikes!

You happen to be at my house, so as I walk by, I reach in the trash can and retrieve your plate, fork and cup. "Yes, it all goes in the recycling bin, except for food waste," I gently inform you. The corn cob is compost while your dirty napkin is trash. Just remember, "When in doubt, don't throw it out!"

As one of 20 members of the Anne Arundel County Recycling Advisory Committee, formed in 2009 by County Executive John R. Leopold "to increase participation in the county's recycling program," it's my goal to improve your recycling habits.

Most recycling residents are diligent about having a bin in the kitchen or nearby in the garage. Sure, it's easy to recycle newspapers, cereal boxes and cans, but what about elsewhere in the home? Do you have a recycling basket in your bathroom? Does that toothpaste box or empty toilet paper tube

go in the trash? How about that empty shampoo or prescription bottle?

In the laundry room, those detergent boxes or plastic jugs are all recyclable. What

about a bin in the office or bedroom? Junk mail, telephone books, catalogs, file folders, the tissue paper in your new shirt, the tags on your new dress and your dry cleaning plastic are all recyclable. Even your old plastic trash cans, flower pots, toys and buckets are now recyclable.

To find a complete list, visit www.recyclemoreoften.com. You can also sign up to take the "50/50 Challenge" by recycling as much as you throw away. Take the pledge and find out how you and your neighbors are doing.

The current report card shows that only Area 8 in Severna Park has reached the goal, recycling 51 percent. Starting at just 31 percent countywide, we are improving, but need to do better.

Anne Arundel County has made it easy to recycle more by becoming the first county in the state to offer curbside, single-stream recycling. That means all our recycling can go in one container, whether it be the big yellow bins that the county has provided for us, or any other container, box or clear plastic

bag, as long as its marked with a large X. It doesn't even have to be yellow!

Use as many recycling containers as needed, for there is no limit. However, each should weigh no more than 40 pounds.

No need to rinse anything or remove labels. Plastic bags and wraps are also accepted, but should be placed in one bag together in your recycling bin. Waxed cartons such as juice boxes and milk or juice cartons are now recyclable, too. Some skeptics question the mixing of items, saying that the recycling becomes "contaminated," but all items are taken to the Waste Management sorting facility in Elkridge. So throw in that cat food can with your pickle jar and pizza box.

But why recycle?

First of all, recycling saves energy. Providing recycled materials to industry for reuse uses much less energy than supplying virgin material. For example, 75 percent of energy consumed in the manufacture of plastic is saved by recycling old plastic, and a whopping 95 percent of the energy needed for the production of aluminum cans from scratch is saved by recycling.

Secondly, recycling saves resources. With our supply of natural resources disappearing as a result of disposable products and packaging production, recycling tremendously reduces this consumption.

Also, recycling saves the environment by decreasing

pollutants of new raw material production, thus lowering greenhouse gas emissions.

Next, recycling is good business. In the process of turning "waste" into valuable products for reuse, recycling creates jobs, contributes to manufacturing efficiency and adds value to the economy. In 2009, Anne Arundel County netted about \$855,000 from recycled paper, plastic, metal and glass, using this profit to defray the costs of curbside collection and waste disposal.

Recycling reduces long-term waste disposal costs by prolonging the life of our landfill and delaying the costly process of developing new landfill space.

Lastly, recycling makes us environmental stewards for the generations to come. We as consumers should be aware of our choices. Teaching our children to be environmentally reactive is our duty, as we show them how that plastic milk jug becomes our soft fleece jacket.

So, recycle ... more ... often. It's easy. And the next time you're at my house for a cookout, we'll be using reusable plates, utensils and pint glasses. But that's another story.

Anne-Marie Dammeyer is an outdoor education teacher specialist for the county school system and a member of Anne Arundel County's Recycling Advisory Committee. For more information about recycling in the county, visit www.aacounty.org/DPW/WasteManagement.



THIS WEEK'S TAKE

By Anne-Marie Dammeyer

APPENDIX C

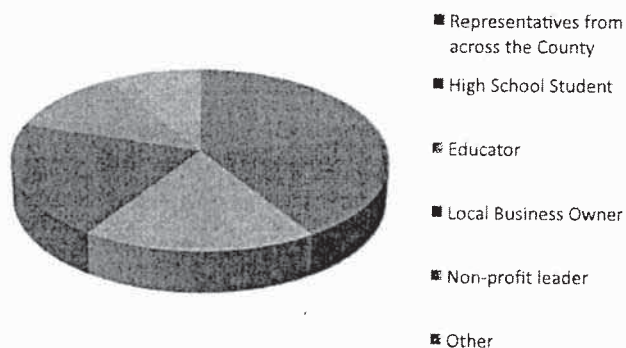
Committee Survey Results and Summary

Recycling Advisory Committee (RAC) Visioning Survey Summary

An electronic survey soliciting input on the future of the RAC was sent out to the 20 members for approximately two weeks from the end of July to the beginning of August, 2010. This survey was meant to give RAC members another opportunity to comment on the future direction of the Committee. Of the 20 people it was sent to, there were 11 responses.

Role of the RAC in Anne Arundel County: Most members saw the Committee as having a role in: County policy review, advocacy, education and outreach, and recommending new legislation or changes to existing laws. Responses were in agreement to continue to help the County reach their 50/50 recycling challenge. The majority of responses felt that the RAC should continue to help the County at outreach events, while creating new venues for education and outreach to the community. Responses included a desire for a clear mission statement of the RAC. Members agreed that the Committee should not take the role of telling County staff what to do, but to remain advisory. There was non-agreement if the RAC should work on increasing business-related recycling.

Membership:



(Other includes: member of Board of Education, senior citizens, residents of apartments/condos, minority residents, other county professionals)

Most members answered that future members should be targeted specifically, in order to enlist non-represented members. These memberships would be reviewed by the RAC as a whole. Committee members did not think that the County Executive or County staff should make appointments to the RAC. Most responses were for duration of membership ranging from one year to two years, with possibility of reappointment.

APPENDIX D
Maryland Gazette Article

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North county recycling rates among lowest in the county

Awareness key to raising rates, advocates say

By KATHY BOLAND, Staff Writer
Published 10/20/10

Walk down the streets of Millersville's Brintingham neighborhood on a Thursday, and you'll see two and three yellow recycling bins for every trash can.

That's because the community is part of a cluster of neighborhoods at the center of the county where residents recycle at least half of what they throw away every week.

And some of them, like Ann Chaffee, recycle far more than that.

"I'd say it's at least 80 percent. At least," Chaffee said, sorting through two recycling bins packed full of junk mail, ticket stubs, tissue paper, newspapers and other odds and ends. "I just got to the point where pretty much everything goes in here."

She'll even take disposable containers home from fast food restaurants to recycle them, in case the eatery isn't so diligent about recycling.

"It just becomes a lifestyle," said Chaffee, a member of the county's Recycling Advisory Committee. "My parents grew up in the Depression, so we were taught to always reuse everything and never waste anything. I inherited those values."

In March 2008, County Executive John R. Leopold kicked off the RecycleOn10 campaign to increase outside recycling in the county from 30 to 50 percent.

Service Area 8, which runs along the Ritchie Highway corridor in Severna Park, Millersville and Pasadena and includes Brintingham, became the first waste collection service area to reach that goal this year.

But residents there were already recycling about 48 percent of their disposables, more than most of the county. And in most of north county, recycling hovers between 30 and 40 percent.

Area 1 - which includes parts of Brooklyn Park and Glen Burnie - was the worst in the county with a 28 percent recycling rate. In Area 4, which includes Riviera Beach, Rockview Beach, Venice on the Bay, Chestnut Hill Cove and Compass Points, residents recycle about 32 percent of their trash.

"It's embarrassingly low," said Lauren Symmes, a Riviera Beach resident and member of the advisory committee.

Her family of five puts out about two full kitchen bags a week for collection, and three to four bins of recyclables.

"If it weren't for the diapers, it would be more (recycling)," she said.

Symmes suspects residents just don't know that they can recycle more than just plastic bottles and tin cans. At a recent family party, she had to remind guests that plastic utensils and paper plates can be recycled.

There has been some improvement, Chaffee said. When members of the advisory committee distributed 2900 recycling bins throughout Glen Burnie, recycling there increased by 17 percent in one week.

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EVENTS CALENDAR

more >>

Nov 04 - New dog obedience classes at the SPCA
Nov 04 - Baltimore Beer Release Party @
Flame Head Tavern Annapolis
Nov 05 - Nov 05 - Annapolis Symphony Performs
Side by Side
Nov 05 - Arundel Lodge Bennett Auction
Nov 06 - Talking Story: Students' Experiences with
Bullying

VIDEOS

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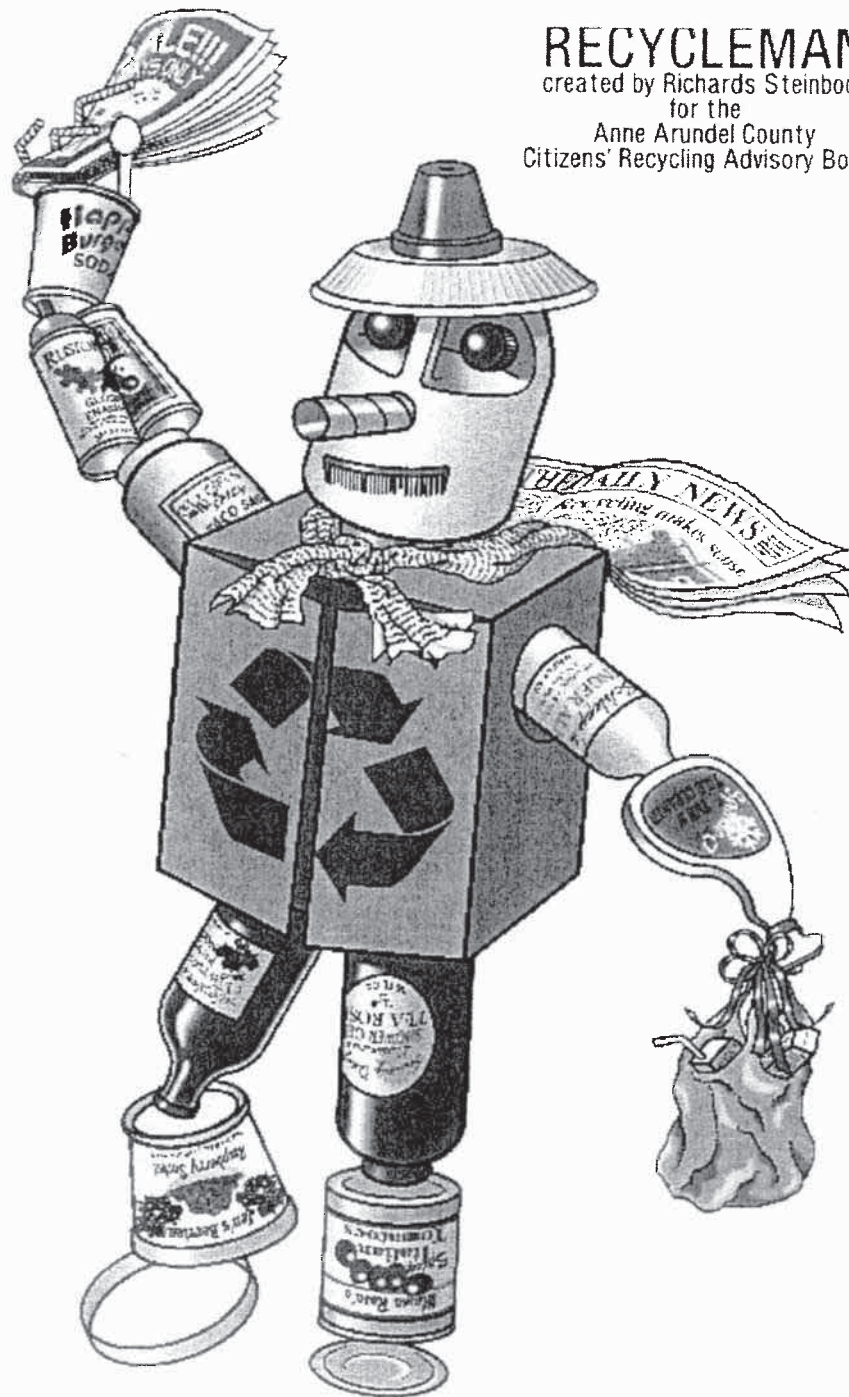


See what our waste and recycling services can do for you.



http://www.hometownglenburnie.com/news/Top_Stories/2010/10/20-02/North+county+re... 11/4/2010

APPENDIX E
“Recycled Person” Sketch for Mascot



RECYCLEMAN
created by Richards Steinbock
for the
Anne Arundel County
Citizens' Recycling Advisory Board

APPENDIX F

Summary of Research on Other Jurisdictions

In July 2010 a request for assistance was sent to the recycling coordinators in several counties in Maryland. The request read:

"I am a member of the voluntary citizens Recycling Advisory Committee for Anne Arundel County, MD. We are exploring ways to increase our county's curbside recycling rates. I was given your name by Richard Bowen, who is the Solid Waste Recycling Manager for the department of Waste Management Services in Anne Arundel county. Richard is advising our committee and assisting us with our efforts.

Currently, our county curbside residential program has two trash, one recycle, and one yard waste pick ups every week. We are proposing to move to **one** day a week for trash, recycle and yard waste. We understand that this may help increase our recycling rates while at the same time reduce costs.

Our committee is gathering data to support this proposal. We are looking for data that would show an increase in recycling rates that other counties or municipalities experienced after moving to one day a week for trash curbside pickup. If you have any studies, statistics, reports or presentations that you could share with us it would be greatly appreciated."

Below is a list of jurisdictions and companies we contacted, along with their responses:

- **Baltimore County** - began curbside recycling in 1995, at that time moved to a one plus one format (one day a week each for trash and recycling), therefore unable to assist
- **Baltimore City** - detailed response as discussed below
- **Frederick County** - recycling coordinator does not handle trash collection, was not able to assist
- **Howard County** - switched to one plus one format in 1993, unable to locate relevant data
- **Montgomery County** - no response
- **Kessler Consulting of Florida** - no response
- **Maryland Department of the Environment** - no response

Ms. Tonya Simmons of Baltimore City was very responsive. Baltimore City switched to single stream recycling in early 2008. In July 2009 they switched to one plus one from two day a week trash and one day a week recycling pick up. This is the scenario that that the RAC is proposing in our Service Change Proposal (see Appendix A).

For the six months prior to July 2009, Baltimore City averaged 1,399 tons per month of single stream curbside recycling. Following the change to one plus one, their six month average increased to 2,162 tons per month. That is an increase of 54.5% in recycling tonnage on a monthly basis by switching to a one plus one format.

Ms. Simmons was also able to provide bi-weekly data from 2007 through August 2010. The data showed a clear increase in recycling in July 2009. Almost all of the two week periods in 2010 appear to be above 1,000 tons, which is approximately 2,100 tons a month. This would indicate that the one plus one format is continuing to work as there does not appear to be a drop off in the rate during 2010.

APPENDIX G
Maryland Math Month Calendar



Maryland Math Month
April 2010 - High School



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
<p>www.marylandmath.org</p> <p> Maryland Council of Teachers of Mathematics</p>	<p>Maryland Math Month calendar is sponsored in a partnership between the Maryland State Department of Education and the Maryland Council of Teachers of Mathematics</p>			<p>1. Use your graphing calculator to find as many ways as you can to write an expression for 100 that uses the same digit repeated and any operations. Example: $99 + (99 - 99)$</p>	<p>2. The diagonal of one square is four times the length of the diagonal of a second square. How many times larger is the area of the larger square?</p>	<p>3. Pi Day Celebrations: http://www.pisces.com/usa/index.html</p>
<p>4. Find different cell phone plans and determine which would be the cheapest for your family, based on each family member's minutes of use.</p>	<p>5. $16^n + 16^n + \dots + 16^n$ (16 terms) = 16^*256. Find n.</p>	<p>6. What is nth term in the following set of numbers: 3, 9, 19, 33, 51</p>	<p>7. The Maryland population in 1990 was 4,781,468 and in 2000 was 5,296,486 (according to the U.S. Census). Determine a linear and an exponential model for Maryland's population (Note: use 1990 as $x = 0$)</p>	<p>8. Explore the connection between mean and median at online.statbook.com/stat_sim/descriptive/index.html (link needs to be added)</p>	<p>9. For the population question, using the Maryland population in 2006 at 5,615,727 (again from the U.S. Census), which model from April 7th is the better fit?</p>	<p>10. Calculus help: http://www.calculushelp.com/index.html</p>
<p>11. Plan a trip for you and your family - including travel (car or plane), lodging (hotel or with friends), ticket/ admission price, food and extras for gifts</p>	<p>12. Abby buys eight doughnuts, some plain at \$0.45 each and some frosted at \$0.75 each. She spent a total of \$5.10. How many plain doughnuts did she buy?</p>	<p>13. Visit http://www.rossmath.com/softek/teaching/teaching.htm to solve some Tangram puzzles</p>	<p>14. Solve: $1/x = 0/x$</p>	<p>15. $A + B + C + D = 100$ and A, B, C, D are all nonnegative. What are the largest and smallest possible values of ABCD?</p>	<p>16. I am a number between 80 and 100. When you divide me by 5, you get an even number. The sum of my digits is 3. What number am I?</p>	<p>17. Explore logistic growth models at http://www.mathworksheets.com/Subjects/LogisticGrowth.htm</p>
<p>18. Family fun! Find the height of each member of your family. Find the mean, median, mode, and range of this data.</p>	<p>19. Using all of the digits 1, 3, 4, 6, and 7, create the largest two-digit even number that is divisible by 3.</p>	<p>20. Compare experimental and theoretical probability as well as explore the Law of Large Numbers at www.ck12.org/interactives/ck12-lln-interactive</p>	<p>21. MaryAnn needs to build a fence around a garden that is 25 feet by 45 feet. The posts are to be set 5 feet apart. How many posts will she need?</p>	<p>22. Solve equations by using a balance at www.ck12.org/interactives/ck12-lln-interactive (link needs to be added)</p>	<p>23. The length of a rectangle is 4 times the width. The perimeter is 70 cm. Find the dimensions of the rectangle.</p>	<p>24. Visit http://www.mathworksheets.com/Subjects/LogisticGrowth.htm to solve some Tangram puzzles. Are you a math magician?</p>
<p>25. Plan a proposal for a vacation for your family. Have a budget for everything you will need. Now convince your family to go!</p>	<p>26. How many integers between 100 and 1000 are divisible by 7? How did you figure it out?</p>	<p>27. Each letter in the word WEDNESDAY is put on a card and placed in a hat. The "A" card is drawn and not replaced. Two more cards are drawn. What is the probability of drawing a "D" and a "Y"?</p>	<p>28. Larry the Late is always late for work. He usually decides to exceed the speed limit. If, on a 14-mile stretch of Interstate 95, he usually goes 70 mph and now he decides to go 80 mph, how many minutes does he save?</p>	<p>29. Frank the Flighty leaves home and drives for awhile at 20 mph. He realizes that he forgot his wallet so he turns back and drives home at 80 mph. He has spent one hour traveling. How far from home did he travel before turning back?</p>	<p>30. The expression $\sqrt{1 + 2 + 3 + 4 + x}$ has the value 4 when $x = 6$. What are all four integers $x \leq 6$ for which this expression has an integral value?</p>	

Maryland Council of Teachers of Mathematics, 2010

**Anne Arundel County
Recycling Initiatives and Programs**

ANNE ARUNDEL COUNTY RECYCLING INITIATIVE

ELECTRONICS RECYCLING

A recent addition to the County's recycling program involves collection of household electronics (computers, monitors, televisions, etc.). From 2002 through 2005, Anne Arundel County held a total of 4 one-day electronics recycling collection events. Those events resulted in collecting over 260,000 pounds of electronics, to be reused or recycled, depending on their condition.

In July 2006, Anne Arundel County established three permanent electronics recycling collection sites. The sites are located at our three residents' only Recycling Centers in Glen Burnie, Severn and Deale, Maryland. The Recycling Centers are free of charge to residents of Anne Arundel County. The County's program accepts TVs, VCRs, DVD players, computer monitors, CPUs, mice, keyboards, cell phones, power supplies, laptops, scanners, stereos, answering machines, and other home electronics from residents for year-round recycling collection.

Electronics are collected under a contract managed by the Northeast Maryland Waste Disposal Authority (the Authority). Until January 31, 2011, these materials were collected and processed by Computer Donation Management, Inc. (CDM) and transported to their facility in Baltimore, Maryland.

The Authority rebid the electronics recycling contract during the fall of 2010 and awarded the contract to Creative Recycling Service (CRS) in December 2010. Anne Arundel County began utilizing CRS in February 2011. As the electronics recycling contractor for Anne Arundel County, CRS manages the materials collected from our three sites by shredding the equipment and separating the materials into various commodities for recycling. The contract with CRS will be utilized through the end of calendar year 2013. The Authority is in the process of procuring a new electronics processing contract that will have a start date of January 1, 2014.

Anne Arundel County has collected more than 15,100,000 pounds of electronics for reuse or recycling from July 2006 through August 2013.

**ANNE ARUNDEL COUNTY
RECYCLING INITIATIVE**

FLUORESCENT LIGHTING RECYCLING

As Required by House Bill 685

**The Collection and Recycling Of Fluorescent and Compact Fluorescent Lights
that Contain Mercury**

Anne Arundel County began collecting fluorescent lighting in conjunction with the Household Hazardous Waste (HHW) Drop-off Program in 1988. Since July 2006 Anne Arundel County has collected approximately 5.27 tons of fluorescent lighting.

Since 1996 Anne Arundel County has been conducting eight HHW Drop-off Days per year. The events are held at our three residents' only Convenience Centers in Glen Burnie, Severn and Deale Maryland. The Convenience Centers are free of charge to residents of Anne Arundel County. The HHW events are conducted by a licensed hazardous waste collection contractor. Their responsibilities with fluorescent light collection include proper containerization, transportation and recycling of all collected material. This program will continue in the future.

In addition to directing residents to our HHW Drop-off Days to dispose of fluorescent lighting, the County also directs them to local retail establishments that also offer the service free to the public on a year-round basis.

ANNE ARUNDEL COUNTY RECYCLING INITIATIVE

PUBLIC SCHOOLS RECYCLING

In July, 2009, the Maryland General Assembly passed House Bill 1290, Environmental-Recycling – Public School Plans requiring recycling in all publicly-funded schools with the exception of State Universities. The law became effective on July 1, 2009 (amending 9-1703 of Environment Article, Annotated Code of Maryland). This bill requires each county's recycling plan to implement a strategy for collecting, processing, marketing, and disposing of recyclable materials from its public schools. It is mandated to have a plan in place by October 1, 2010.

Anne Arundel County Public School Recycling Program

Anne Arundel County Public Schools (AACPS) operates independently from Anne Arundel County's Waste Management Services program. However, the public schools' have been a proactive recycling partner with the County Government since 1989 and have continually increased their commitment to recycling over the years. Beginning with the 2008 school year, the school system adopted a single stream recycling program allowing the schools to place the same items accepted by the County's residential recycling program into one container. All County schools participate in the single stream recycling program. Recycling containers are located within each classroom, office space and common areas. Additionally, each school has single stream dumpster(s) located outside, utilized for material collection by a private contractor. AACPS custodial personnel are responsible for the collection of recyclables within the schools and placement of said material into the single stream recycling dumpster(s).

Single Stream Recycling has allowed the school system to increase recyclable volume while contractually decreasing the number of trash containers and service needed at each school location. The change has yielded immediate cost avoidance and significant savings to the school system's budgetary bottom-line. The collection of each school's recycled materials is provided under a multi-year contract held by a licensed solid waste hauler (contractor). The collected material is transported to a local Materials Recycling Facility (MRF) for further processing and marketing. Additionally, over 80% of the schools voluntarily participate in the Abitibi Paper Retriever fundraising program.

Materials Included in Program

Recyclables include but are not limited to: mixed paper defined as all paper products like newspaper, books, colored paper, computer paper, letters, envelopes, file folders, paper bags, etc.; Comingle items includes aluminum beverage cans, narrow neck glass bottles (any color), glass jars (any color), plastic bottles (drink containers), and all steel and tin food cans (empty aerosol cans are also acceptable); and flattened and non-flattened corrugated cardboard boxes. The contract manager may add other materials to the recycling collection program should markets become available. Contractors are advised that cans and bottles may contain liquids and polystyrene trays may contain food waste.

**ANNE ARUNDEL COUNTY
RECYCLING INITIATIVE**

PUBLIC SCHOOLS RECYCLING

Collection of Materials

The Contractor is responsible for providing all containers, labor and equipment required to fulfill the recycling services for AACPS on a scheduled basis throughout the County's school system. All recycling dumpsters must be colored yellow to be in sharp contrast to the green trash dumpster to avoid cross contamination. Additionally, recycling cans must be clearly marked as recycled in plain text 100 font or greater and at a minimum, clearly display the universal recycling emblem. Unless otherwise directed, six (6) cubic yard containers are used for recyclable materials.

The work shall consist of collecting, transporting and disposing recyclable materials from schools, office and learning locations considered as property of AACPS. All material that is set out in designated recycling areas for each of these facilities shall be collected. In the event a recycling container is severely contaminated with non-recyclables, that is, greater than 20%, the contractor is to notify the contract manager of the problem. An allowance for disposal of the container in the landfill shall be made by AACPS equal to the monthly landfill disposal fee divided by the number of pick-ups per month. No service charge allowance is allowed. If the problem continues routinely, the Contractor's recycling specialist should determine the source of the contamination and make recommendations to the contract manager on how to resolve the issue, such as: education programs, alternate container placement, locks, etc.

All designated recyclables will be delivered by the Contractor to a MRF of the Contractor's choosing. The facility shall be in full compliance with all federal, state, and local laws, covenants and ordinances. AACPS may require the Contractor to furnish documentation verifying such compliance. Any infraction there-of, if repeated after warning by the contract manager, shall be just cause for termination of this contract.

Marketing of Materials

All collected recyclables must be delivered to a MRF where material will be processed and marketed for its best possible reuse. The Contractor must submit to the AACPS Contract Manager, quarterly reports and a route schedule on all recycling tonnage removed from AACPS. The contractor may be requested to provide written indication of secured processing and marketing capacity. Thereafter, upon written request by the Contract Manager additional markets for AACPS recycling materials collected through this bid must be presented in written form. The Contractor shall have 30 days to comply. All market information will be handled with the strictest confidentiality. The Contractor is to continue to promote, develop and manage recycling efforts to enhance the current AACPS recycling program.

Stakeholders

Stakeholders within the Anne Arundel County Public School system include the Environmental Issues Program Manager (Contract Manager), Superintendent of Schools, Regional Area

ANNE ARUNDEL COUNTY RECYCLING INITIATIVE

PUBLIC SCHOOLS RECYCLING

Superintendents, Chief Operating Officer, School Principals, High School Business Managers, School Chief Custodians, Acting Director of Facilities, Supervisor of Operations and Logistics and the Operations Area Managers.

The AACPS stakeholders are responsible for ensuring all publicly-funded schools are participating in the School Recycling Program. The Contract Manager will ensure the contractor is providing the recycling services to each facility including the required collection dumpsters and the regularly scheduled pick-up service. The AACPS Contract Manager provides the necessary contract management to ensure the Contractor is meeting the contract specifications. Every three years Anne Arundel County Public Schools will submit any changes and updates to the Schools' Recycling Program to be included in the Ten Year Solid Waste Management Plan. Changes will be submitted to Anne Arundel County's Department of Public Works, Recycling Division, Solid Waste Recycling Manager at 2662 Riva Road, Annapolis, Maryland 21401

Anne Arundel County Public Schools Recycling Program success depends heavily upon the support and cooperation received from the Anne Arundel County Recycling Division. The Recycling Division staff conduct student and staff recycling awareness presentations, develop grade appropriate recycling lesson plans/educational videos and conduct recycling contests tailored for elementary, middle and high school students. The Anne Arundel County Recycling Division may provide office and classroom recycling containers and other recycling materials as budgets allow.

Schools in Program

ELEMENTARY

ANNAPOLIS	180 Green St Annapolis 21401
ARNOLD	90 Church Rd Arnold 21012
BELLE GROVE	4502 Belle Grove Rd Baltimore 21225
BELVEDERE	360 Broadwater Rd Arnold 21012
BENFIELD	365 Lynwood Dr Severna Park 21146
BODKIN	8320 Ventor Road Paadena 21122
BROADNECK	470 Shore Acres Rd Arnold 21012
BROCK BRIDGE	405 Brock Bridge Rd Laurel 20724
BROOKLYN PARK	200 14th Avenue Baltimore 21225
CAPE ST. CLAIRE	931 Blue Ridge Dr Annapolis 21409
CENTRAL	130 Stepney Lane Edgewater 21037
CROFTON	1405 Duke of Kent Crofton 21114
CROFTON MEADOWS	2020 Tilghman Dr Crofton 21114
CROFTON WOODS	1750 Urby Dr Crofton 21114
DAVIDSONVILLE	962 W Central Ave Davidsonville 21035
DEALE	759 Masons Beach Rd Deale 20751
EASTPORT	420 Fifth Ave Annapolis 21403
EDGEWATER	121 Washington Rd Edgewater 21037
FERNDAL EARLY	105 Packard Ave Glen Burnie 21061
FOLGER McKINSEY	175 Arundel Beach Rd Severna Park 21146

**ANNE ARUNDEL COUNTY
RECYCLING INITIATIVE**

PUBLIC SCHOOLS RECYCLING

FORT SMALLWOOD	1720 Poplar Ridge Rd Pasadena 21122
FOUR SEASONS	979 Waugh Chapel Rd Gambrills 21054
FREETOWN	7904 Freetown Rd Glen Burnie 21060
GEORGE CROMWELL	525 Wellham Ave Glen Burnie 21061
GEORGETOWN EAST	111 Dogwood Rd Annapolis 21403
GERMANTOWN	1411 Cedar Park Rd Annapolis 21401
GLEN BURNIE PARK	500 Marlboro Rd Glen Burnie 21061
GLENDALE	105 Carroll Rd Glen Burnie 21060
GLENDALE ED REGIONAL	105 Carroll Rd Glen Burnie 21060
HEBRON-HARMAN	7660 Ridge Chapel Rd Hanover 21076
HIGH POINT	924 Duvall Highway Pasadena 21122
HILLSMERE	3052 Arundel on the Bay Rd Annapolis 21403
HILLTOP	415 Melrose Ave Glen Burnie 21061
JACOBSTOWN	3801 Mountain Rd Pasadena 21122
JESSUP	2900 Elementary School Lane Jessup 20794
JONES	122 Hoyle Lane Severna Park 21146
LAKE SHORE	4804 Mountain Rd Pasadena 21122
LINTHICUM	101 School Lane Linthicum 21090
LOTHIAN	5175 Solomons Island Rd Lothian 20711
MANOR VIEW	2900 MacArthur Rd Ft. Meade 20755
MARLEY	715 Cooper Rd Glen Burnie 21060
MARYLAND CITY	3359 Crumpton South Laurel 20724
MAYO	1260 Mayo Ridge Rd Edgewater 21037
MEADE HEIGHTS	1925 Reece Rd Ft. Meade 20755
MILLERSVILLE	1601 Millersville Rd Millersville 21108
MILLS-PAROLE	103 Chinquapin Round Rd Annapolis 21401
NANTUCKETT	2350 Nantuckett Drive, Crofton, 21114
NORTH GLEN	615 West Furnace Branch Rd Glen Burnie 21061
OAK HILL	34 Truckhouse Rd Severna Park 21146
OAKWOOD	330 Oak Manor Dr Glen Burnie 21061
ODENTON	1290 Odenton Rd Odenton 21113
OVERLOOK	401 Hampton Rd Linthicum 21090
PARK	201 East 11th Ave Baltimore 21225
PASADENA	105 Spruce Ave Pasadena 21122
PERSHING HILL	7600 29th Division Rd Ft. Meade 20755
PINEY ORCHARD	2641 Strawberry Lake Way Odenton 21113
POINT PLEASANT	1035 Dumbarton Rd Glen Burnie 21060
QUARTERFIELD	7967 Quarterfield Rd Severn 21144
RICHARD HENRY LEE	400 A St Glen Burnie 21061
RIDGEWAY	1440 Evergreen Rd Severn 21144
RIPPLING WOODS	530 Nolfield Dr Glen Burnie 21061
RIVIERA BEACH	8515 Jenkins Rd Pasadena 21122
ROLLING KNOLLS	1985 Valley Rd Annapolis 21401
SEVEN OAKS	1905 Town Center Blvd Odenton 21113

**ANNE ARUNDEL COUNTY
RECYCLING INITIATIVE**

PUBLIC SCHOOLS RECYCLING

SEVERN	838 Reece Rd Severn 21144
SEVERNA PARK	6 Riggs Ave Severna Park 21146
SHADY SIDE	4859 Atwell Rd Shady Side 20764
SHIPLEY'S CHOICE	310 Governor Stone Pkwy Millersville 21108
SOLLEY	7608 Solley Rd Glen Burnie 21060
SOUTH SHORE	1376 Fairfield Loop Rd Crownsville 21032
SOUTHGATE	290 Shetlands Lane Glen Burnie 21061
SUNSET	8572 Ft. Smallwood Rd Pasadena 21122
TRACEY'S	5235 Solomons Island Rd Lothian 20711
TYLER HEIGHTS	200 Janwal St Annapolis 21403
VAN BOKKELEN	1140 Reece Rd Severn 21144
WAUGH CHAPEL	840 Sunflower Dr Odenton 21113
WEST ANNAPOLIS	210 Annapolis St Annapolis 21401
WEST MEADE EARLY	7722 Ray St Ft. Meade 20755
WINDSOR FARM	591 Broadneck Rd Annapolis 21409
WOODSIDE	160 Funke Rd Glen Burnie 21061

MIDDLE

ANNAPOLIS	1399 Forest Dr Annapolis 21403
ARUNDEL	1179 Hammond Lane Odenton 21113
BATES	701 Chase Ave Annapolis 21401
BROOKLYN PARK	200 Hammonds Lane Baltimore 21225
CENTRAL	221 Central Ave East Edgewater 21037
CHESAPEAKE BAY	4804 Mountain Rd Pasadena 21122

CORKRAN	7600 Quarterfield Rd Glen Burnie 21061
CROFTON	2301 Davidsonville Rd Crofton 21114
GEORGE FOX	7922 Outing Ave Pasadena 21122
LINDALE	415 Andover Rd Linthicum 21090
MacArthur	3500 Rockenbach Rd Ft. Meade 20755
MAGOTHY RIVER	241 Peninsula Farm Rd Arnold 21012
MARLEY	10 Davis Court Glen Burnie 21060
MEADE	1103 26th St Ft. Meade 20755
OLD MILL NORTH	620 Patriot Lane Millersville 21108
OLD MILL SOUTH	620 Patriot Lane Millersville 21108
SEVERN RIVER	241 Peninsula Farm Rd Arnold 21012
SEVERNA PARK	450 Jumpers Hole Rd Severna Park 21146
SOUTHERN	5235 Solomons Island Rd Lothian 20711

HIGH

ANNAPOLIS	2700 Riva Rd Annapolis 21401
ARUNDEL	1001 Annapolis Rd Gambrills 21054
BROADNECK	1265 Green Holly Dr Annapolis 21409
CHESAPEAKE	4798 Mountain Rd Pasadena 21122
GLEN BURNIE	7550 Baltimore Annapolis Blvd. Glen Burnie 21060

**ANNE ARUNDEL COUNTY
RECYCLING INITIATIVE**

PUBLIC SCHOOLS RECYCLING

MEADE	1100 Clark Rd Ft. Meade 20755
NORTH COUNTY	10 E. 1st Avenue Glen Burnie 21061
NORTHEAST	1121 Duvall Highway Pasadena 21122
OLD MILL	600 Patriot Lane Millersville 21108
SEVERNA PARK	60 Robinson Rd Severna Park 21146
SOUTH RIVER	201 Central Avenue East Edgewater 21037
SOUTHERN	4400 Solomons Island Rd Harwood 20776

All new school facilities will be included in the School Recycling Program upon opening.

Program Monitoring

The Anne Arundel County Public School System's Operation Division, Environmental Issues Program will monitor the school recycling program to ensure participation. The school system shall conduct inspections, review service levels, investigate reported or unreported pick-up and disposal complaints, conduct meetings between AACPS and Contractor staff to educate or review practices, and review Contractor compliance with the school recycling contract. Any issues which arise from these visits that are deemed deficiencies on the part of the Contractor will be detailed in writing and reported to the Contractor within 10 business days after discovering the service issue. The Contractor shall initiate actions to correct all deficiencies found within 10 business days after receipt of deficiency notification. If deficiencies are not being satisfactorily corrected, the AACPS may take over the service and pursue it to completion, by contract or otherwise, and the Contractor shall be liable to AACPS for all costs incurred.

The Contractor shall be available to conduct educational seminars and/or tours on new products, practices and procedures for AACPS employees and/or students. As well, the contractor shall be responsible to keep AACPS current on new regulations, laws, mandates, etc. affecting trash removal and recycling in the State of Maryland.

The contractor, throughout the life of the contract, shall be required to work with AACPS to further develop, implement and expand Anne Arundel County Public School System's existing recycling program, to include the addition of any future AACPS facility added to the current list of locations.

The Anne Arundel County Recycling Division helps to monitor the AACPS Recycling Program and makes recommendations to the contract manager to ensure the schools highly successful recycling program continues.

The Anne Arundel County Council is responsible for adopting the School Recycling Plan for inclusion into the Ten Year Solid Waste Management Plan.

ANNE ARUNDEL COUNTY RECYCLING INITIATIVE

PUBLIC COLLEGE RECYCLING

In July, 2009, the Maryland General Assembly passed House Bill 1290, Environmental-Recycling – Public College Plans requiring recycling in all publicly-funded schools with the exception of State Universities. The law became effective on July 1, 2009 (amending 9-1703 of Environment Article, Annotated Code of Maryland). This bill requires each county's recycling plan to implement a strategy for collecting, processing, marketing, and disposing of recyclable materials from its public schools. It is mandated to have a plan in place by October 1, 2010.

Anne Arundel Community College Program

Anne Arundel Community College (AACC) is a public, comprehensive, community-engaged institution of higher education. In cooperation with and with the support of Anne Arundel County, Anne Arundel Community College has promoted the sustainability of the recycling and solid waste system that includes maximum efficiency, economic vitality, and reduced environmental and human health impacts. The college strives to reduce per capita waste generation and increase the recovery of recyclable materials. Beginning with the 2009 college year, the college system adopted a single stream recycling program allowing the college to place the same items accepted by the county's residential recycling program into one container that is located in each classroom or building area. Single stream recycling allowed the college to increase recyclable volume while contractually decreasing the number of trash containers and service needed at each college location. AACC staff, students and maintenance personnel are responsible for the collection of recyclables within the campus facilities and placement of said material within the recycling dumpster(s) or carts. Collection service is provided under a multi-year contract held by a licensed solid waste hauler (Contractor). The college's recycled materials are collected and transported to a local Materials Recycling Facility (MRF), of the Contractor's choosing, for further processing and marketing. Additionally, the college participates in the Abitibi Paper Retriever fundraising program, recycles scrap metal, pallets, cardboard in bulk, and used motor and cooking oil. The recycling program shall continue in full force.

Materials Included in Program and the Collection of Materials

The College launched a college wide single stream recycling program in 2009. This program recycles all cardboard, glass, plastic, aluminum, and paper products. The Contractor making collections of recyclables shall provide all labor, materials, equipment, transportation, and supervision as necessary to make collections from the Anne Arundel Community College main campus in Arnold, two facilities at Glen Burnie, and one facility at Arundel Mills located in Hanover, MD.

Containers used for collection will include 2, 4, 6 and 8 cubic yard dumpsters as well as 96 gallon carts and containers will be collected on a scheduled basis. Provided containers shall be both leak proof and rodent proof, having a sealed bottom and tight fitting cover, and be structurally capable of supporting a capacity load.

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PUBLIC COLLEGE RECYCLING

All collected recyclables must be delivered to a MRF where material will be processed and marketed for its best possible reuse. The Contractor shall be responsible for obtaining any and all required State, County or City license(s) and providing copies of license to AACC prior to the award of any contract

Stakeholders

Stakeholders within the Anne Arundel Community College system include the Purchasing Agent, the Director of Facilities Operations and Maintenance, the Supervisor of Custodians, Maintenance personnel, AACC staff, AACC students and the Hauling contractor.

AACC staff, students and maintenance personnel are responsible for the collection of recyclables within the campus facilities and placement of said material within the recycling dumpster(s) or carts. The Director of Facilities Operations and Maintenance will ensure the Contractor is providing the recycling services to each facility including the required collection containers and the regularly scheduled pick-up service. Additionally, this stakeholder will provide the necessary contract management to ensure the Contractor is meeting the contract specifications. AACC will submit every three years to Anne Arundel County's Department of Public Works, Recycling Division, Solid Waste Recycling Manager at 2662 Riva Road, Annapolis, Maryland 21401 any changes and updates to the School Recycling Program to be included in the Ten Year Solid Waste Management Plan.

Anne Arundel County's Recycling Division will support AACC recycling program by conducting student and staff recycling awareness presentations. Additionally, the Division will assist and monitor the AACC Recycling Program to ensure a highly successful program continues to exist. The Anne Arundel County Council is responsible for adopting the School Recycling Plan for inclusion into the Ten Year Solid Waste Management Plan.

Participating Locations

Recycling Dumpster collection:

Location	Building
Arnold Campus	CALT
Arnold Campus	CSB
Arnold Campus	Student Union
Arundel Mills	Arundel Mills

**ANNE ARUNDEL COUNTY
RECYCLING INITIATIVE**

PUBLIC COLLEGE RECYCLING

Recycling Cart collection:

Location	Building(s)
Arnold Campus	All
Arundel Mills	Arundel Mills
Glen Burnie	GBTC&HCAT

All new AACC facilities will be included in the Recycling Program upon opening.

Program Monitoring

The Director of Facilities Operations and Maintenance shall conduct inspections, review service levels, and investigate reported or unreported pick-up and disposal complaints, conduct meetings between AACC and Contractor staff to educate or review practices, and review Contractor compliance with the school recycling contract. If revisions or changes are required in connection with this contract which, in the opinion of AACC, are rendered necessary as a result of the Contractor's services or if the Contractor's work is determined by the AACC to be inferior, defective or not in accordance with terms of the collection contract, AACC will provide written notification to the Contractor within 48 hours after discovering the service issue. The Contractor shall, within 48 hours after receiving the notification from AACC, and without expense to the AACC:

- Place in satisfactory condition in every particular all such work and correct all defects therein;
- Make good all work, which in the opinion of AACC is the result of failure on the part of the Contractor to respond to or correctly complete the terms of the contract.

If the Contractor, after notice, fails to proceed promptly to comply with the terms of the guarantee, AACC may have the work corrected by another company and the Contractor shall be liable for any and all expenses incurred.

The contractor, throughout the life of the contract, shall be required to work with AACC to further develop, implement and expand the Anne Arundel Community College System's existing recycling program, to include the addition of any future AACC facility added to the current list of locations.

**ANNE ARUNDEL COUNTY
RECYCLING INITIATIVE**

APARTMENT BUILDING AND CONDOMINIUM RECYCLING

Apartment Building and Condominium Recycling (ABCR) Program

A. Recycling Program

The Recycling and Waste Reduction Division, with the assistance of other County Departments, identified apartment buildings and condominiums that fall under the scope of the law. With the assistance of MDE, the County's Recycling and Waste Reduction Division will notify apartment and condominium officials, referred to as property owners in this document, of their legal requirements, including the materials that must be recycled (plastic, metal, glass containers, and paper) at their identified locations.

Property owners are responsible for contracting necessary services to provide for the storage, collection, and transportation to the recycling markets for collected materials. They must report the details on their recycling activities to the County on an annual basis, beginning with calendar year 2014. Per Section 9-1703 (b) (12) of the Environment Article, Annotated Code of Maryland, recycling programs will entail the following:

1. Materials Included in Program

Plastic, metal and glass containers and paper

2. Collection of Materials

Property owners 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 should be provided to avoid cross contamination. Additionally, property owners are responsible for the collection and transportation of recyclable materials from apartment and condominium locations to markets. Size, type and number of recycling containers to be used are at the discretion of the property owner. Residents will be responsible for placing recyclables in the supplied recycling containers prior to their collection on the scheduled pick up day.

3. Marketing of Materials

Property owners are responsible for the marketing of their recyclables. Annual reports shall be submitted detailing the recycling tonnage removed from the apartment and condominium and the end-markets for the materials.

B. Stakeholders

Stakeholders that will be involved in implementing the law are:

1. Anne Arundel County Council – Responsible for adopting the MDE approved language of ABCR Program for the Plan amendment.

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APARTMENT BUILDING AND CONDOMINIUM RECYCLING

2. Department of Public Works, Waste Management Services, Recycling and Waste Reduction Division – Communicate the requirements of the law to the apartment and condominium officials. If requested, assist apartment and condominium officials in developing a recycling program. Beginning with calendar year 2014, utilize the established Maryland Recycling Act (MRA) Solid Waste Survey as the mechanism for apartment and condominium officials in reporting recycling activities.
3. Owner or Manager of the Apartment Building or Councils of the Unit Owners of Condominium – Responsible for providing recycling to the residents of each apartment building or condominium by October 1, 2014. 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 report to the County on annual basis.

C. Participating Apartment Buildings or Condominiums in ABCR Program

See the attached list of participating properties.

Note: New apartment buildings or condominiums that will fall under the requirements of the law will begin participating in the ABCR program within 3 months of being notified by the County.

D. Schedule for the Development and Implementation of the Program

The ABCR Program will be implemented according to the following schedule:

1. By October 31, 2013, County will have completed distribution of the MDE approved language for the ABCR Program to the apartment and condominium officials for ABCR Program implementation.
2. By September 1, 2014, property owners finalize and secure recycling services contracts with the private contractors.
3. On or before October 1, 2014, residents begin utilizing the provided recycling program at the participating apartment buildings or condominiums.

5. Program Monitoring

The Recycling and Waste Reduction Division shall oversee the progress and performance of the ABCR Program. However, the property owners will be responsible for conducting inspections, review of service levels, investigation of 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 that are deemed deficiencies on the part of the residents or recycling collection contractor will be detailed in writing by the property owner and reported to the violator. Property Owners shall require

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APARTMENT BUILDING AND CONDOMINIUM RECYCLING

corrective actions occur within 60 days of notification. The property owners 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.

6. Program Enforcement

The Recycling and Waste Reduction Division will monitor the implementation of a recycling program at apartment and condominiums as required by Sections 9-1703 and 9-1711 of the Environment Article, Annotated Code of Maryland. The Recycling and Waste Reduction Division will confirm program compliance through the receipt of the annual MRA Solid Waste Survey beginning with calendar year 2014. Shortly after the end of each calendar year, the Recycling Division will provide each property that falls within the scope of the law; the MDE approved MRA Solid Waste Survey. Within this survey, property owners will provide data on their solid waste management, to include information regarding their recycling program.

If necessary, the County Office of Law will be consulted on any enforcement action contemplated as provided in the State Law.

Property Name	Physical Address	Mailing Address
Aloft Arundel Mills	7520 Teague Road., Hanover, MD 21076	7520 Teague Road., Hanover, MD 21076
Americana Southdale	7847 Americana Circle., Glen Burnie, MD 21060	7847 Americana Circle., Apt #T4, Glen Burnie, MD 21060
Aquahart Manor Apartments	0 Cayer Drive., Glen Burnie, MD 21061	C/O Southern MGMT Corp, 1950 Old Gallowes, Suite 600, Vienna, VA 22182
Arbors at Arundel	2109 Piney Branch Circle., Hanover, MD 21076	2109 Piney Branch Circle., Hanover, MD 21076
Arundel Woods Apartments	403 W Ordinance Road., Glen Burnie, MD 21061	403 W Ordinance Road., Glen Burnie, MD 21061
Bay Hills Apartments	451 Shore Acres Road., Apt #2A, Arnold, MD 21012	451 Shore Acres Road., Apt #2A, Arnold, MD 21012
Burwood Gardens	6652 Shelly Road., Glen Burnie, MD 21061	6652 Shelly Road., Glen Burnie, MD 21061
Camden Russell	8500 Summit View Road., Laurel, MD 20724	8500 Summit View Road., Laurel, MD 20724
Carlyle Apartments	1668 Carlyle Drive., Crofton, MD 21114	1668 Carlyle Drive., Crofton, MD 21114
Cedar Creek Apartments	215 Woodhill Drive., Suite D, Glen Burnie, MD 21061	215 woodhill Drive., Suite D, Glen Burnie, MD 21061
Claiborne Place Apartments	130 Hearne Court., Annapolis, MD 21401	Capital MGMT Strategies, 11200 Rockville Pike #250., Rockville, MD 20852
College Parkway Place	570 Bellevue Road., Annapolis, MD 21409	218 N Charles Street., Suite 220, Baltimore, MD 21201
Colonial Square Apartments	7779 New York Lane., Glen Burnie, MD 21061	7779 New York Lane., Glen Burnie, MD 21061
Concord Park at Russell	9003 Orion Circle., Laurel, MD 20724	7903 Orion Circle., Laurel, MD 20724
Conte Lubrano Apartments LLC	130 Lubrano Drive., Annapolis, MD 21401	130 Lubrano Drive., Suite 114, Annapolis, MD 21401
Country Club Apartments	7491 E. Furnace Branch Road., Glen Burnie, MD 21060	7491 E. Furnace Branch Road., Glen Burnie, MD 21060
Crain Court Apartments	216 Crain Court Circle., Glen Burnie, MD 21061	216 Crain Court Circle., Glen Burnie, MD 21061
Crofton Village Apartments	917 Eastham Ct T-1., Crofton, MD 21114	917 Eastham Ct T-1., Crofton, MD 21114
Doll Apartments	1420 Crain HWY., Glen Burnie, MD 21061	1420 Crain HWY S W., Glen Burnie, MD 21061
Drexel Park I Apartments (NOW CALLED ASHLEY APARTMENTS)	3472 Andrew Court, Laurel, MD 20724	3472 Andrew Court, Laurel, MD 20724
Drexel Park III Apartments (NOW CALLED ASHLEY APARTMENTS)	3472 Andrew Court, Laurel, MD 20724	3472 Andrew Court, Laurel, MD 20724
Drexel Park Two Apts (NOW CALLED ASHLEY APARTMENTS)	3472 Andrew Court, Laurel, MD 20724	3472 Andrew Court, Laurel, MD 20724
East Glen Burnie	7428 Furnace Branch Road East, Glen Burnie, MD 21060	2418 St. Paul Street, 3rd Floor, Baltimore, MD 21218
Element Arundel Mill	7522 Teague Road., Hanover, MD 21076	1564 Crossways BLVD., Suite 201, Chesapeake, VA 23320
Elms at Stoney Run	7581 Stoney Run Drive., Hanover, MD 21076	7581 Stoney Run Drive., Hanover, MD 21076
Fieldstone Farm Apartments	800 Hydric Court., Odenton, MD 21113	P. O. Box 973, Arlington, VA 22216
Freetown Village	7820 Darrell Henry Court., Pasadena, MD 21122	7820 Darrell Henry Court., Pasadena, MD 21122
Friendship Station	1212 Odenton Road., Odenton, MD 21113	C/O Associated Catholic Charities, 320 Cathedral Street, Baltimore, MD 21201
Gateway Landing Apartments	7357 Ridgewater Court #204., Glen Burnie, MD 21060	7357 Ridgewater Court #204., Glen Burnie, MD 21060
Ginger Cove	4000 River Crescent Road., Annapolis, MD 21401	4000 River Crescent Drive., Annapolis, MD, 21401
Glen Burnie Town Apartments	201 N. Crain HWY., Glen Burnie, MD 21061	C/O Davenport Investments LLC, 1800 JFK BLVD, Suite 603, Philadelphia, PA 19103
Glen Forest Senior Apartments	7975 Crain HWY., Glen Burnie, MD 21061	21400 Ridgetop Circle., Suite 250, Sterling, VA 20166
Glen Hollow Apartments	8103 Glen Hollow Drive, Glen Burnie, MD 21061	P. O. Box 1506, Annapolis, MD 21401
Glen Mar Apartments	469 Glen Mar Road Apt A-2., Glen Burnie, MD 21061	469 Glen Mar Road Apt A-2., Glen Burnie, MD 21061
Glen Ridge Apartments	57 Glen Ridge Rd., Glen Burnie, MD 21061	57 Glen Ridge Rd., Apt B1, Glen Burnie, MD 21061
Glen Square	102 Crain HWY NW., Glen Burnie, MD 21061	7885 Gordon Court., Glen Burnie, MD 21060
Glenview Gardens	7987 NolparkCourt., Glen Burnie, MD 21061	C/O Glenview Housing Inc 250., 11200 Rockville Pike #220., Rockville, MD 20852
Greentree Apartments (Now called Chesapeake Glen Apartments)	8035 Greenleaf Ter Glen Burnie, MD 21061	8035 Greenleaf Terrace., Apt #T4, Glen Burnie, MD 21061
Hammarlee House Apartments	20 Hammarlee Road., Glen Burnie, MD 21060	C/O Humphrey Management, 7170 Riverwood Drive., Columbia, MD 21046
Harbour Gates Apartments	2001 Harbour Gates Drive., Annapolis, MD 21401	2001 Harbour Gates Drive., Annapolis, MD 21401
Harpers Mill	600 Harpers Mill Road., Millersville, MD 21108	600 Harpers Mill Road., Millersville, MD 21108
Hidden Woods Apartments	401 Secluded Post Circle., Glen Burnie, MD 21061	401 Secluded Post Circle., Glen Burnie, MD 21061
Horizon Square Apartments	3563 Laurel Fort Meade Road #121., Laurel, MD 20724	3563 Laurel Fort Meade Road #121., Laurel, MD 20724
Hyatt Place Baltimore	940 International Drive., Linthicum Heights, MD 21090	C/O Terry Kemp, Archon Group, 6011 Connection Drive., Irving, TX 75039
Islands of Foxchase	208 Somerset Bay Drive., Glen Burnie, MD 21061	208 Somerset Bay Drive., Glen Burnie, MD 21061
Iupati Building Dormi	7220 Parkway Drive., Hanover, MD 21076	7234 Parkway Drive., Hanover, MD 21076
Keswick Park Apartments	1623 Parkridge Circle., Crofton, MD 21114	1623 Parkridge Circle., Crofton, MD 21114
Lake Village Apartments	8001 Laketowne Court., Severn, MD 21144	8001 Laketowne Court., Severn, MD 21144
Linden Apartments	2997 Jessup Road., Jessup, MD 20794	2979 Jessup Road., Jessup, MD 20794
Lynn Hill Apartments	416 Hillview Drive., Linthicum Heights, MD 21090	416 Hillview Drive., Linthicum Heights, MD 21090
Mariner Bay-Towne Center Apartments	1910 Town Centre Blvd., Annapolis, MD 21401	C/O Erwin L Greenberg, 10096 Red Run Blvd, Suite 100., Owings Mills, MD 21117
Marley Run Apartments	8017 Ashberry Lane., Pasadena, MD 21122	8017 Ashberry Lane., Pasadena, MD 21122
Mayo Apartments	827 Mayo Road., Edgewater, MD 21037	200 Westgate Circle., Suite 502, Annapolis, MD 21401
Meade Village	1710 Meade Village Circle Road., Severn, MD 21144	1710 Meade Village Circle Road., Severn, MD 21144
Meadows at Russell	8185 Scenic Meadows Drive., Laurel, MD 20724	8185 Scenic Meadows Drive., Laurel, MD 20724
Mill Pond Apartments	602 Milldam Court., Millersville, MD 21108	602 Milldam Court., Millersville, MD 21108
Moutain Ridge Apartments	299 Snow Cap Court., Glen Burnie, MD 21061	299 Snow Cap Court., Glen Burnie, MD 21061
North Forest Apartments	1827 Crofton PKWY., Crofton, MD 21114	C/O Southern MGMT Corp, 1950 Old Gallowes, Suite 600, Vienna, VA 22182

Property Name	Physical Address	Mailing Address
Oakland Hills Apartments	614 Oakland Hills Drive., Arnold, MD 21012	614 Oakland Hills Drive., Arnold, MD 21012
Oakridge Manor Apartments	7701 Oakwood Road 103., Glen Burnie, MD 21061	7701 Oakwood Road 103., Glen Burnie, MD 21061
Old Stage Apartments	7669 Marcin Drive., Glen Burnie, MD 21061	7669 Marcin Drive., Glen Burnie, MD 21061
Orchards at Severn	8317 Severn Orchard Circle., Severn, MD 21144	8317 Severn Orchard Circle., Severn, MD 21144
Park Glen Apartments	7906 Allard Court, Apt #102, Glen Burnie, MD 21061	7906 Allard Court, Apt #102, Glen Burnie, MD 21061
Park View at Furnace	7466 Furnace Branch Road., Glen Burnie, MD 21060	218 N Charles Street., Suite 220, Baltimore, MD 21201
Parkview at Severna	180 Ritchie Highway., Severna Park, MD 21146	218 N Charles Street., Suite 220, Baltimore, MD 21201
Pinewood East	7900 Benesch Circle., Glen Burnie, MD 21060	7885 Gordon Court., Glen Burnie, MD 21061
Pinewood Village	7885 Gordon Court., Glen Burnie, MD 21060	P. O. Box 2700, Annapolis, MD 21404
Quail Hollow Apartments	7930 Silver Leaf Court., Glen Burnie, MD 21061	7930 Silverleaf Court, Apt D., Glen Burnie, MD 21061
Quarterfield Crossing	400 Pamela Road., Glen Burnie, MD 21061	400 Pamela Road., Glen Burnie, MD 21061
Rainbow View Apartments	1025 Cranbrook Road., Cockeysville, MD 21030	1025 Cranbrook Road., Cockeysville, MD 21030
Regency Club Apartments	6001 Heritage Hill Drive., Glen Burnie, MD 21061	6001 Heritage Hill Drive., Glen Burnie, MD 21061
Riverscape Apartment	2600 Midway Branch Drive., Odenton, MD 21113	C/O The Dolben Company Inc, 150 Presidential Way, Suite 200., Woburn, MA 01801
Scots Manor Apartments	1221 Scots Manor Court., Odenton, MD 21113	1221 Scots Manor Court., Odenton, MD 21113
Seven Oaks Phase I	2100 Sentry Court., Odenton, MD 21113	2100 Sentry Court., Odenton, MD 21113
Seven Oaks Phase II	2100 Sentry Court., Odenton, MD 21113	2100 Sentry Court., Odenton, MD 21113
Severn Square Apartments	7669 Marcin Drive., Glen Burnie, MD 21061	7669 Marcin Drive., Glen Burnie, MD 21061
Shelter Cove Apartments	537 Tranquil Court., Odenton, MD 21113	537 Tranquil Court., Odenton, MD 21113
Somerset Woods	1833 Richfield Drive., Severn, MD 21144	1833 Richfield Drive., Severn, MD 21144
Southgate Apartments	362 Klagg Ct., Glen Burnie, MD 21061	362 Klagg Ct., Apt #201, Glen Burnie, MD 21061
Stagecoach Apartments	7669 Marcin Drive., Glen Burnie, MD 21061	7669 Marcin Drive., Glen Burnie, MD 21061
Stone Point Apartments	116 Stone Point Drive., Annapolis, MD 21401	116 Stone Point Drive., Annapolis, MD 21401
Stoney Hill	500 Stoney Hill Court., Odenton, MD 21113	7885 Gordon Court., Glen Burnie, MD 21061
Sunrise at Severna Park	43 West W. McKinsey Road, Severna Park, MD 21146	43 West W. McKinsey Road, Severna Park, MD 21146
Tall Oaks	3515 Leslie Way., Laurel, MD 20724	3515 Leslie Way., Laurel, MD 20724
Tall Pines Apartment Complex	7888 Tall Pines Court., Glen Burnie, Md 21061	7888 Tall Pines Court., Glen Burnie, Md 21061
The Cove	6533 Cedar Furnace Circle., Glen Burnie, MD 21061	6533 Cedar Furnace Circle., Glen Burnie, MD 21061
The Greens at Hammonds	602 Hammonds Lane., Baltimore, MD 21225	602 Hammonds Lane., Brooklyn Park, MD 21225
The Groves at Piney	2404 Ash Grove Lane., Odenton, Md 21113	2404 Ash Grove Lane., Odenton, Md 21113
The Lodge at Seven	2027 Odens Station Lane., Odenton, MD 21113	2027 Odens Station Lane., Odenton, MD 21113
The Reserve at Stone	8003 Cameryn Place., Pasadena, MD 21122	107 Ridgely Avenue, Suite 14C, Annapolis, MD 21401
The Village at Odenton	1415 Duckens Street., Odenton, Md 21113	1415 Duckens Street., Odenton, Md 21113
The Villages at Marley	7807 Winborne Drive., Glen Burnie, MD 21060	7807 Winborne Drive., Glen Burnie, MD 21060
The Willows Apartments	116 Warwickshire Lane., Glen Burnie, MD 21061	116 B Warwickshire Lane., Glen Burnie, MD 21061
Thomas Pumphrey House	1730 Pleasantville Drive., Glen Burnie, MD 21061	P. O. Box 817., Glen Burnie, MD 21060
Twin Cove Apartments	156 Hammarlee Road., Glen Burnie, MD 21060	156 Hammarlee Road., Glen Burnie, MD 21060
Victoria Park Edgewater LLCC	87 Stewart Drive., Edgewater, MD 21037	175 Admiral Cochrane Drive., Suite 20, Annapolis, MD 21401
Village Square Apartments	8096 Crainmont Drive., Glen Burnie, MD 21061	8096 Crainmont Drive., Glen Burnie, MD 21061
West Wood Apartments	988 Spa Road, Annapolis, MD 21403	988 Spa Road, Annapolis, MD 21403
Windbrooke Apartments	1025 Cranbrook Road., Cockeysville, MD 21030	1025 Cranbrook Road., Cockeysville, MD 21030
Woodcrest Apartments	101 S Charter Road., Glen Burnie, MD 21061	101 S Charter Road., Glen Burnie, MD 21061
Woodside Apartments	7820 Parke West Drive., Glen Burnie, MD 21061	C/O Maryland MGNT, 2613 Carover Drive, Hanover, MD21076
Yorktowne at Olde	600 Harpers Mill Road., Millersville, MD 21108	600 Harpers Mill Road., Millersville, MD 21108

**Anne Arundel County
Ten Year Plan Update
2013-2023**

**Appendix F
Subsidiary Solid Waste Management Plans**

City of Annapolis
Solid Waste Management Plan

Solid Waste Management Plan for the City of Annapolis
August 20, 2012

The City of Annapolis does not have its own solid waste management plan. In accordance with COMAR 26.03.03, the solid waste management plan for the City of Annapolis is incorporated into the Anne Arundel County Solid Waste Management Plan.

Annapolis Facts

Population: 38,394 (source, U.S. Census Bureau, 2010 Census)
Households: 16,133 (source, U.S. Census Bureau, 2010 Census)

Growth Projections

	<u>2010</u>	<u>2015</u>	<u>2020</u>	<u>2025</u>	<u>2030</u>
Population	38,394	39,445	40,497	41,548	42,600
Household	17,845	18,013	18,182	18,351	18,520

Source for 2010: 2010 Census
Source for 2015-2030: Annapolis Comprehensive Plan - Projections (straight-line)

Annapolis Solid Waste Facts

Full Service Collection Units*: 8,759

*Full Service Collection Unit receives refuse, recycling and yard waste collection once per week and call-in bulk and white good collection.

Units receiving Refuse & Recycling Collection, once per week: 20

Units receiving Commercial Recycling Collection, once per week: 43

Street Cans: 76 Refuse / 20 Recycling

Park Cans: 88 Refuse / 4 Recycling

Annual Trash Disposal FY 2012 (July 1, 2011 through June 30, 2012): 8,801Tons

Annual Recycling Collection FY 2012: 2,762 Tons

Annual Yard Waste Collection, estimated, FY 2012: 3,114 Tons

City Government Structure

Although the City of Annapolis is part of Anne Arundel County, it is a separate municipal body, having the rights and powers of municipal self-government. It is the capital of Maryland, and covers an area of approximately 7.6 miles.

Solid Waste Management Plan for the City of Annapolis
August 20, 2012

The City of Annapolis is governed by an elected mayor and eight elected aldermen. Each alderman governs one of eight wards. The elected officials are responsible for making policy decisions, while appointed officials, such as the Director of Public Works, carry out and implement policy.

The City Charter requires the Department of Public Works to operate a refuse collection and disposal system, and enforcement powers are specified in the City Code, Chapter 10, as further detailed below.

Residential and Commercial

The City of Annapolis provides collection of refuse, recycling, yard waste and bulky items/white goods to residential customers in accordance with the City of Annapolis Municipal Code, Chapter 10. A private contractor was selected as a Service Provider using a competitive bid process in early 2012, and a seven-year contract, with annual renewal options, has been established. The contract/contractor will be managed by the Annapolis Department of Public Works.

The Service Provider is responsible for the collection of excess bulky waste, park and recreation cans, street cans and special collection of materials as set forth in the negotiated contract. The collection and disposal of hazardous waste is not included in the contract. City residents are required to dispose of those items in accordance with Anne Arundel County policies.

The City of Annapolis is divided into four collection routes for refuse and recycling, with each route collected weekly on Monday, Tuesday, Thursday and Friday, with allowances for Wednesday and Saturday collections to accommodate five annual holidays. All routes are provided weekly yard waste collection on Wednesdays. Customer bins for recycling collection are purchased by the city and are available at no cost to customers for pick up at two locations. Bulky waste/white good collection is scheduled on a call-in basis, and is performed by the Service Provider on Wednesdays. A fee for service is charged to all residential refuse customers, and is managed by the City of Annapolis as an enterprise fund.

Collection of refuse generated by commercial establishments located within the City of Annapolis is privately contracted by each establishment, but all commercial establishments are required to use a refuse hauler licensed by the city. The city offers a voluntary commercial recycling program, which allows commercial businesses to pay a reasonable rate for weekly collection of recyclables.

Solid Waste Management Plan for the City of Annapolis
August 20, 2012

A recycling drop off location is provided for transient boaters in the downtown City Dock area. Public recycling cans are provided in the downtown area, specific commercial districts, parks, and city buildings. Electronics recycling is available at a drop off location at the Public Works Operations Center.

The City of Annapolis does not operate an active waste disposal site. Disposal of refuse is via a multi-year contract with Anne Arundel County and Northeast Maryland Waste Authority. Refuse is delivered to the Annapolis Junction Transfer Station located in Severn, MD. Yard waste processing and disposal is handled by a contractual agreement with Anne Arundel County, and is delivered to the Millersville Landfill and Resource Recovery Facility located in Severn, MD. Recycling material is delivered to Recycle America Alliance in Savage, MD, which is also part of a contractual agreement with Anne Arundel County. The City of Annapolis receives rebates for recyclables based market rates.

City of Annapolis Landfill

Beginning in the late 1950s, the City of Annapolis operated a sanitary landfill located on Defense Highway, under permit from the Maryland Department of the Environment. The landfill comprises 85 acres and is located in Anne Arundel County, outside of the city limits. The facility accepted waste generated in the city until it reached capacity and ceased accepting wastes in 1993. Subsequently, city wastes have been transported to the county-owned landfill in Severn and the privately-owned transfer station in Jessup.

Note: The Maryland Grid coordinates of the approximate center point of the closed Annapolis Landfill are E 1433640.018, N 482886.001.

The City of Annapolis is a participating and voting member of the Disaster Debris Planning Task Force of the Transportation & Public Works Committee of the Baltimore Regional Transportation Board. Participation with the committee is essential to ensure regional cooperation between jurisdictions in the event of an emergency.

Refuse and recycling accumulation and storage, collection and enforcement are regulated by Chapters 10.16 and 10.18 of the Annapolis City Code. Enforcement of the regulations is specified under those chapters, with enforcement duties split between the Department of Public Works and the Department of Neighborhoods and Environmental Programs.

Solid Waste Management Plan for the City of Annapolis
August 20, 2012

Establishment of waste management disposal systems, such as a transfer station, a processing facility and a landfill within the City of Annapolis, requires a Special Exception Use approval. Special Exception Use approval may be given at the discretion of the planning director or may be determined by the Building Board of Appeals. This process is described in Title 21 of the Annapolis City Code.

Solid Waste Management Planning

The City of Annapolis strategy for managing city-collected waste will be to continue to focus on waste reduction and recycling, thereby minimizing disposal. For more than nine years, the city has been in a governmental partnership with Anne Arundel County to dispose of waste at the Millersville Landfill and the Annapolis Junction Transfer Station. Agreements have been executed to provide for this.

An additional component of the city's solid waste plan includes educational outreach to all residents, including minority and non-English speaking communities. These efforts will be continued to ensure that good recycling practices exist and waste generation is minimized. To encourage recycling in public areas, a mayoral policy has been adopted requiring recycling cans to be available where public refuse cans are located.

Recycling cans are being added to all parks that have refuse cans to encourage park patrons to recycle. Finally, in an effort to improve cleanliness and uniformity in the Historic District, the City of Annapolis is considering many options, including franchise agreements with private collectors for commercial collection, including restaurant collection."

Over the future planning period, the City of Annapolis will continue to explore opportunities to manage, dispose of, or process solid waste in the most practical and financially prudent manner. Establishing governmental partnerships can take advantage of the economies of scale, thereby reducing the financial burden on the city. Under the right set of circumstances, utilizing city-owned land for processing or transfer of wastes could also reduce transportation and disposal costs. However, these types of facilities are subject to applicable zoning requirements. The city plans to continue evaluating its needs in response to changes in disposal costs, the availability of cost-effective outlets and regional recycling markets. Regardless, the city will ensure that plans are in place to manage, dispose of and recycle wastes generated by its residents.



MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard • Suite 610 • Baltimore, MD 21230-1719

410-537-3314 • 800-633-6101 • www.mde.maryland.gov

Larry Hogan
Governor

Ben Grumbles
Secretary

Boyd Rutherford
Lieutenant Governor

February 16, 2016

Mr. Richard Bowen, Manager
Recycling and Waste Reduction
Anne Arundel County Department of Public Works
Heritage Complex, 2662 Riva Road
Annapolis, MD 21230

Dear Mr. Bowen:

The Maryland Department of the Environment (the "Department") has completed its review of Anne Arundel County's November 20, 2015 progress report regarding the County's review of the 2013-2023 Solid Waste Management Plan (the "Plan"). The County submitted the progress report to the Department for its review as required by Section 9-506(b) of the Environment Article, Annotated Code of Maryland. The Department received the progress report on November 24, 2015.

Based on the review, the Department determines that the County's 2015 progress report complies with the requirements of Section 9-506(b) of the Environment Article. The next progress report must be submitted to the Department by December 2, 2017.

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 on these matters, please contact Mr. Tariq Masood, Project Manager, at (410) 537-3326 or tariq.masood@maryland.gov or you may contact me, at (410) 537-3314 or dave.mrgich@maryland.gov.

Sincerely,

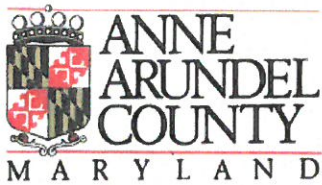
David Mrgich, Chief
Waste Diversion Division

RECEIVED
Waste Management Services

cc: Rhody Holthaus, Anne Arundel County Department of Public Works
Tariq Masood

FEB 23 2016

Recycling and Waste
Reduction Division



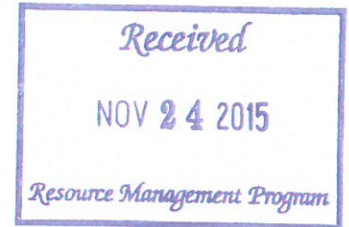
County Executive Steven R. Schuh

Heritage Complex
2662 Riva Road
Annapolis, MD 21401

Christopher J. Phipps, P.E.
Director, Department of Public Works

November 20, 2015

Ms. Hillary Miller
Acting Director, Land Management Administration
Maryland Department of the Environment
1800 Washington Blvd., Suite 610
Baltimore, MD 21230



Re: Progress Report Solid Waste Management Plan 2013-2023

Dear Ms. Miller,

This is to notify you that in accordance with Environment Article, Section 9-506(b), and the Department's letter dated March 3, 2014, Anne Arundel County has performed the required review of the Plan of Action items in our Solid Waste Management Plan (Plan). The attached document provides the progress report for each priority item. As you are aware, there has been one amendment to the Plan, which involved the inclusion of the required Special Event Recycling Plan.

Please note that the disposal capacity remaining at the County's landfill far exceeds the ten (10) year planning horizon. If you have any questions, please feel free to contact me at 410-222-7951.

Sincerely,

A handwritten signature in black ink, appearing to be "Richard Bowen".

Richard Bowen
Recycling and Waste Reduction Manager

cc: Rhody Holthaus

Recycle.
More Often.

Telephone (410) 222-7951 Mailstop 7406 fax (410) 222-4484
Website: www.aacounty.org/dpw/WasteManagement
Recycled Paper



Solid Waste Management Plan 2013-2023

Status of Plan of Action Items

As of December 2015

- 1) Integrated System Management – implementing new initiatives and establishing programs and systems that respond to regulatory change and promote a hierarchical flow from source reduction and reuse, to recycling and composting, while further reducing disposal.
 - a. With the closure of the last remaining private composting facility in the Anne Arundel County area in late 2014, implemented a curbside yard waste transfer operation at the Millersville Landfill to ensure the continued diversion of source separated yard waste collected from County residents. In conjunction with the yard waste transfer operation, secured a new yard waste hauling and processing contract for a 5 year period.
 - b. Began contract extension discussions with the County's recyclables processing contractor with the goal of securing an outlet for single stream recyclables for the remainder of the Solid Waste Management Plan's (SWMP) 10-year planning horizon.
 - c. Developed a recyclables drop-off area to be located within the footprint of Millersville Landfill's last disposal area (Cell 9). In addition to the County's three public recycling facilities, this area will be used to provide recycling opportunities to large commercial and self-haul customers using the landfill.
 - d. Funded a Capital Project to double the capacity of the County's compost operation at the Millersville Landfill where "Anne's Best" compost is produced.
- 2) Public Health and the Environmental Protection – implementing measures to protect public health and the environment from the time recyclables and waste are placed curbside for collection until their ultimate processing, recovery, and disposal.
 - a. Partnered with the County's Health Department in an initiative to provide low-income residents with a reliable trash container designed to improve solid waste storage between collections.

- b. Converted an area within the Olde Brooklyn Park area of North County from alley trash collection to curbside collection for the purpose of eliminating the staging of trash in the alleys and the public nuisance that resulted.
- c. Between 2013 and 2015, replaced five (5) residential water wells for homes located near the Landfill's eastern boundary in accordance with the approved Drinking Water Supply Contingency Plan.
- d. Updated the Stormwater Pollution Prevention Plans at all County-owned solid waste facilities, per new state general discharge permit 12-SW (NPDES No. MDR00). Continued implementation of the SPPP's, including new requirements for stormwater monitoring.
- e. Participated in an EPA inspection for NPDES MS4 compliance at the Millersville Landfill & Resource Recovery Facility in 2015.
- f. Initiated a capital project to select, design install and implement restoration of 20% of untreated impervious area of the three County-owned solid waste facilities, per the requirements of the state general discharge permit 12-SW (NPDES No. MDR00).
- g. Continued implementation of comprehensive Environmental Monitoring Plans at the active Landfill and two closed Landfills.
- h. Maintained all State and Federal permitting requirements.
- i. Replaced internal landfill gas condensate traps with external collection sumps in the capped landfill disposal cell (i.e., Cell 567 at the Millersville Landfill) to collect and convey this liquid to the pretreatment facility.
- j. Installed seven (7) new landfill gas extraction wells on the capped Cell 567 at the Millersville Landfill.
- k. Completed a feasibility study for the use of landfill gas in the production of bio-CNG (compressed natural gas) for vehicle fuel. Contributed over \$300K of the proceeds from the Millersville Landfill-Gas-to-Electricity Facility to the County's Energy Loan Revolving Fund for development of countywide energy efficiency and conservation projects.
- l. Deployed floating wetlands in a stormwater pond at the Millersville Landfill in 2015.

- m. Began construction of a stream restoration project to restore approximately 1,730 linear feet of Wells Branch that bisects the Millersville landfill.
- 3) Regional Partnerships – developing partnerships with local jurisdictions and private entities and associated facilities on a regional basis to help meet the County's recycling and solid waste management needs and its obligation to maintain an affordable program for rate payers.
- a. Contracting for the recycling of shingles by utilizing Howard County's existing contract for services.
 - b. Continued an intergovernmental agreement with Prince George's County Western Branch yard waste processing facility.
 - b) Partnering with the Northeast Maryland Waste Disposal Authority (Authority) for disposal of a portion of our residential waste at an out-of-County facility.
 - c) Partnered with Arundel Community Development Services, Inc. (ACDS) to issue a Request for Proposals for construction of a solar PV project on capped areas of the Millersville Landfill (2013) and Glen Burnie Landfill (2015).
 - d) Developing an Intergovernmental Agreement (IGA) with the Authority to streamline future outsourcing of solid waste and recycling initiatives.
 - e) Supporting the solid waste disposal and recycling needs of the City of Annapolis by providing waste disposal and yard waste recycling services.
- 4) Recycling, Waste Diversion and Landfill Preservation – maximizing recycling and economical waste diversion of material from curbside collection, the Recycling Centers and the County Landfill to conserve landfill capacity throughout and beyond the succeeding ten (10) year planning period.
- a. Curbside Recycling Rate improved to 45%.
 - b. Diverted over 305,000 tons of trash away from the County Landfill between January 2013 – October 2015.
 - c. Continue to monitor emerging technologies that would enhance the Landfill operation and increase capacity.
 - d. Planning to launch textile recycling at the Recycling Centers in FY 2016.

- e. Planning the implementation of shingle recycling at the Landfill and Recycling Centers.
 - f. Solicited proposals for recycling polystyrene only to find that the sole recycler in the region lacks sufficient processing capacity to recycle material collected in Anne Arundel County.
 - g. Achieved 99% compliance with Apartment and Condominium properties required by House Bill 1 (2012) to implement a recycling program.
 - h. Adopted the approved plan for Special Event Recycling in 2015 as required by Senate Bill 781 (2014).
 - i. Completed a Waste Composition Study of curbside collected trash to determine the amount of recyclables being disposed of as trash. Used results to develop outreach to residents portraying this waste of valuable resources.
 - j. Received recognition from the Oyster Recovery Partnership (ORP) as the first County in Maryland to establish full-time collection of oyster and clam shells used in Chesapeake Bay restoration activities.
- 5) Collection and Management of Recyclables and Solid Waste – implementing a comprehensive, convenient, efficient and affordable collection, processing and disposal system for recyclables and solid waste.
- a. Procured five (5) new, long term curbside collection contracts for year-round once a week pickup of single stream recyclables, yard waste and trash. The procurement, which included route changes to boost collection efficiency, resulted in an annual cost savings to the County of \$2.8M.
 - b. Completed the County-wide distribution of 65-gallon recycling carts with over 130,000 carts in service and each cart increasing (on average) the weight of a customer's recycling set out by 20%.
 - c. Completed a renovation of the Southern Recycling Center designed to improve customer convenience and operational efficiency.
 - d. Conducted six (6) Household Hazardous Waste collection events annually.

- 6) Operational Enhancements and Alternatives – evaluating innovative technologies and incorporating environmentally sound approaches that maximize available resources, improve operational efficiencies and further extend the life of the County Landfill.
- a. Installed GPS tracking system in County owned on-the-road vehicles to improve upon the efficiency of our transportation of solid waste materials including trash, single stream recyclables and separately collected commodities like scrap metal, clean rubble, and cardboard,
 - b. In preparation for Cell 8 closure, recovered \$1M in airspace on outer slopes in 2015.
 - c. Renovated the Paper Recovery Building at the Millersville Landfill, refurbished cardboard baling equipment, and outsourced baler operation.
- 7) Future Landfill Life and Capacity – conceptualizing long-term needs for solid waste processing and disposal capacity in the County, recognizing that the County Landfill will one day close.
- a. Continue diversion of curbside collected trash away from the County Landfill to a privately owned disposal facility to extend the life of the landfill.
 - b. Completed a study of future options that could increase the capacity of the remaining Cell 9 disposal area.
 - c. Conducted annual site surveys to determine level of landfill consumption and compute the remaining capacity.
 - d. Recovered landfill capacity within Cell 8 previously consumed by the recycling drop-off area.
 - e. Continue use of MDE approved alternative daily cover (ADC) tarps to reduce the volume of cover soil and maximize the volume available for waste placement.
 - f. Planning transition from Cell 8 to Cell 9 scheduled to begin late 2016.
- 8) Constituent Communication and Outreach – developing effective methods of public outreach to better serve and educate residents and facility customers on the

County's existing and emerging recycling, waste diversion and solid waste programs.

- a. Continued implementation of a comprehensive outreach program designed to educate, motivate and inform residents about all the services that are available to them through the Bureau of Waste Management Services. Mediums used to communicate our many messages were direct mail, media advertisements including television, radio, print, online and social media.
- b. Presented personalized recycling outreach sessions to a wide array of audiences, including schools, senior centers, homeowner associations and the commercial sector.
- c. Conducted a focus group made up of County residents for the purpose of understanding recycling behavior and determining the motivating factors. Results from the focus group were used to assess how well our current outreach campaign was performing and if there was any need to alter it.
- d. Performed a customer service survey of residents visiting the County's Recycling Centers to determine their opinion on the convenience, accessibility and organization of the Recycling Centers.
- e. Results from the Waste Composition Study showed that 26% of what residents were disposing of as trash could have been recycled within our program. This information was communicated to County residents through a direct mail piece, County webpage and social media.
- f. Promoted source reduction and reuse to County residents. Examples included a Grass-cycling direct mail piece, source reduction banners and social media posts.

9) Revenue and Beneficial Use – generating revenue to sustain the Solid Waste Enterprise Fund, including marketing recyclable items and garnering the beneficial use of solid waste-derived resources such as landfill gas, natural wood waste and rubble.

- a. Generated over \$5M from the sale of electricity and renewable energy credits generated by the Millersville Landfill-Gas-to-Electricity project.

- b. Continued individual commodity sale of materials such as cardboard, aluminum, steel and vinyl to realize a higher level of revenue as compared to marketing them within mixed streams.
- c. Annual single stream recycling volume has grown from 64,000 tons to 68,000 tons during the 2013 – 2015 period. Projecting to exceed 70,000 tons in 2016.
- d. Total recycling tonnage managed by the County in FY15 exceeded 135,000 tons.
- e. Procured a revenue producing recycling contract for electronics delivered to the Recycling Centers and the Landfill.
- f. Continued production and sale of compost generating revenue of over \$30,000 in FY15.
- g. Marketed excess soil and sandstone encountered during the development of Cell 9 to garner new sources of revenue.

10) Rates and Fees – keeping the residential rate and landfill tip fees affordable.

- a. No Increase to the waste collection fee charged to County residents receiving the services provided by Waste Management Services.
- b. No increase to the disposal fee charged to Landfill customers.

11) Future Strategic Plans – continuous improvement of the existing solid waste management and recycling systems based on market, technological, industry, and regulatory changes over the succeeding ten (10) year planning period.

- a. Considering another Capital Improvement Program (CIP) project to further expand the County's composting pad to a size that provides on-site processing capacity for all yard waste collected from County residents.
- b. Modifying yard waste collection to require the use of compostable paper bags.

12) Future Disposal Facilities - Comprehensively review and evaluate options for future solid waste disposal facilities to replace the County Landfill.

- a. Monitor the development of alternative waste disposal facilities in the region for future consideration.