Comprehensive Solid Waste Management Plan 2025-2034

Aiming for Zero Waste

A vision for sustainable materials management

MONTGOMERY COUNTY, MARYLAND

DEPARTMENT OF ENVIRONMENTAL PROTECTION
MONTGOMERY COUNTY • MARYLAND

April 2025

COMPREHENSIVE
SOLID WASTE MANAGEMENT PLAN
2025 – 2034
Montgomery County, Maryland

Prepared per Title 9, Subtitle 5 of the Environment Article of the Annotated Code of Maryland

Adopted by the County Council of Montgomery County, Maryland, by Resolution Number 20-771 Adopted April 8, 2025

Department of Environmental Protection
Recycling and Resource Management Division

Wheaton, Maryland

TABLE OF CONTENTS

List of Figures

List of Tables

Appendices

INTRODUCTION

The Montgomery County Comprehensive Solid Waste Management Plan (the "SWMP") for the succeeding ten-year planning period of 2025 – 2034 was prepared according to Title 9, Subtitle 5, Environment Article, Annotated Code of Maryland, and the Regulations under the Code of Maryland Regulations (COMAR) 26.03.03. An Executive Summary, the Montgomery County Council Resolution adopting this Plan, and the Maryland Department of Environment (MDE) approval letter are included.

EXECUTIVE SUMMARY

The Montgomery County, Maryland, Comprehensive Solid Waste Management Plan (the "SWMP") for the succeeding ten-year planning period of 2025 - 2034 has been prepared in accordance with Title 9, Subtitle 5 of the Environment Article, Annotated Code of Maryland, and the Code of Maryland Regulations (COMAR) 26.03.03. The Montgomery County Council has adopted the Plan through Resolution No. 20-771 and approved by the Maryland Department of the Environment (MDE).

The Annotated Code of Maryland requires the County to review and update the SWMP for the succeeding ten-year planning period at least once every three years.

The County is undertaking a robust analysis of alternative options for recycling and managing solid waste materials, expanding current recycling efforts, and developing new recycling and waste diversion programs as part of its ongoing "Aiming for Zero Waste" (AZW) initiative. The intent of the Municipal Solid Waste (MSW) Management System Analysis is to assist the County with achieving the following goals:

- Manage its solid waste materials in an environmentally and socially responsible manner;
- Continue to provide exceptional, reliable, and cost-effective solid waste management and recycling services to the County now and in the future; and
- Modernize and improve our solid waste materials management system.

This alternatives analysis will provide the County with the information required to make informed, data-driven decisions to develop and implement a solid waste management system designed to meet the County's needs for the next 20-30 years. The analysis will provide a clear understanding of financial costs, environmental and public health impacts, racial and social justice implications, facility impacts, and operational concerns.

The following changes and other pertinent documents are included in this SWMP:

Chapter 1 provides an overview of the laws, regulations, and government agencies that are a part of this SWMP. Changes to this chapter include:

- Updates to applicable laws and regulations.
- Reference to Food Residuals – Organics Recycling and Waste Diversion Regulations (COMAR 26.04.13).
- Reference to House Bill, HB 161 – Northeast Maryland Waste Disposal Authority Sunset Act 2023.

Chapter 2 provides an overview of population and employment trends and land use considerations that impact present and future solid waste management considerations. Changes to this chapter include:

- Updates to population projections and employment trends.
- Reference to Household Growth Projection for 2034 by policy area.
- Updates to figures and maps as applicable.
- Reference to Community Equity Index in relation to solid waste facilities.
- Reference to highlights of the County's Comprehensive Land Use Plan, based on Thrive Montgomery 2050 (Thrive).
- Reference to zoning requirements related to solid waste management activities.

Chapter 3 provides detailed data on waste generation and describes waste collection and acceptance facilities. Changes to this chapter include:

- Updates to waste generation tonnages.
- Updates to figures and maps as applicable. A new map presenting all county-owned facilities and private facilities is included.
- Updates to the summary of Materials Management in Incorporated Cities and Municipalities.
- Updates to the summary of the number of households served and tons managed by each subdistrict in CY2022.
- Updates to biosolids information based on the 2022 Comprehensive Water & Sewer Plan and correspondence with the Washington Suburban Sanitary Commission.
- Updates to information regarding in-county solid waste acceptance facilities, including the newly permitted Composting Facility by Compost Crew at Wasche Farm and Aspen Nursery.
- Inclusion of CY2022 tonnage data of solid waste leaving the County for processing, recovery, and disposal.

Chapter 4 assesses solid waste management needs to address waste generation changes or challenges as well as facility constraints. Changes to this chapter include:

- Updates to waste generation and recycling data using MDE-provided baseline data, CY2022.
- The latest adopted Montgomery County Ten-Year Comprehensive Water Supply and Sewerage Systems Plan (2022) was used to determine the current conditions and constraints as well as the needs assessment for biosolids and septage management. Correspondence with the Washington Suburban Sanitary Commission clarified conditions, constraints, and the needs assessment since the 2022 Water Supply and Sewerage Systems Plan was adopted.
- Inclusion of a new planning initiative for exploring food waste composting, including efforts to establish best management practices through commercial and residential pilot projects.
- Inclusion of the constraints of County-owned acceptance facilities and County facilities needing incremental processing capacity during the term of this SWMP.
- Updates to land use constraints.

- Updates to incentive zoning system (commercial-residential and employment zones).

Chapter 5 Describes the robust analysis of alternative options for recycling and managing solid waste materials, aiming to design a solid waste management system for the next 20 to 30 years. This chapter will be amended as results and decisions are made to address solid waste generation changes, materials management, and new and improved recycling and solid waste processing facilities. In addition to the planning efforts, this chapter describes the current efforts that the Department of Environmental Protection (DEP) and the Recycling and Resource Management Division (RRMD) are implementing to reduce waste and improve processing capacity:

- Each county-owned facility has an updated Plan of Action to improve safety and increase productivity.
- Discussion about the need for capacity for composting and recycling processing.
- Updates to the Plan of Action for solid waste generation and maximize recycling.
- Updated Plan of Action for biosolids' management.
- Discussion about the Financial Management System of DEP/RRMD that addresses the in-depth role of Chapter 48, the Montgomery County Code, and the Master Authorization in the financial management of the solid waste enterprise fund. This information was included in anticipation of the upcoming financial needs to implement strategies, programs, and infrastructure to reduce waste and increase recycling, as described in Chapter 5 of the SWMP.

Chapter 5 also introduces the County's Aiming for Zero Waste (AZW) initiative. The AZW initiative will include various programs and projects that encompass waste diversion and reduction, recycling and composting, facility upgrades, and operational modifications, including but not limited to the planned closure of the Resource Recovery Facility, education and outreach, and associated policy and programmatic changes. This SWMP is a critical element of the AZW initiative as it provides a foundation for the plan of action over the succeeding 10-year planning period. This SWMP will be amended as required during the succeeding 10-year planning period as AZW programs and projects are implemented. The currently identified programs and projects to support the AZW initiative are listed below:

- Commercial Food Scraps Recycling Partnership Program
- Residential Food Scraps Pilot Program
- Save-As-You-Throw Program with co-collection of Food Scraps and Yard Trim
- Edible Food Recovery Program
- Organics Management Facility Development
- Material Recovery Facility Upgrades
- Municipal Solid Waste (MSW) Management System Analysis
- Construction and Demolition Debris Recycling Program
- Subdistrict B Consolidation

Resolution No.: 20-771
Introduced: January 14, 2025
Adopted: April 8, 2025

COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND

Lead Sponsor: County Council at the Request of the County Executive

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SUBJECT: Adoption of the Comprehensive Solid Waste Management Plan

Background

1. Pursuant to Sections 9-503 and 9-515 of the Environment Article of the Annotated Code of Maryland, the governing body of each County is required to adopt and submit to the Maryland Department of the Environment (MDE) a ten-year plan dealing with solid waste disposal systems, solid waste acceptance facilities, and the systematic collection and disposal of solid waste. The Environment Article further requires each County to review its solid waste management plan at least every three years.

2. On October 12, 2021, the County Council, by Resolution 19-1008, adopted the current 2020-2029 Ten Year Comprehensive Solid Waste Management Plan (SWMP) for Montgomery County.

3. On October 22, 2021, the MDE received the SWMP for its review and approval to meet the requirements of Section 9- 507 of the Environment Article.

4. On February 3, 2022, the MDE approved the adopted SWMP and set September 1, 2024, as the deadline for the County to submit a draft 2025-2034 SWMP.

5. On August 30, 2024, the draft of the 2025-2034 SWMP was sent to MDE for its technical review and tentative approval.

6. On September 24, 2024 , MDE completed the review and determined that the Draft 2025-2034 SWMP will meet the requirements outlined in Sections 9-503, 9-505, 9-1703 of the Environment Article, and COMAR 26.03.03 provided that DEP modified the Plan according to MDE's instructions.

7. On December 31, 2024, the County Executive transmitted to the County Council a revised Ten Year Plan entitled "Montgomery County, Maryland Comprehensive Solid Waste

Management Plan for the Years 2025 through 2034" (dated December 2024) responsive to the foregoing MDE preview comments, and new legislation.

8. On February 11, 2025 a public hearing was held pursuant to Section 9-505 of the Environment Article.

9. On March 24, 2025, the Transportation & Environment Committee discussed and recommended approval of the "Montgomery County, Maryland Comprehensive Solid Waste Management Plan for the Years 2025 through 2034" with changes.

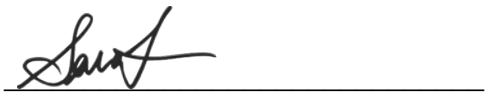
10. On April 8, 2025, the County Council discussed the "Montgomery County, Maryland Comprehensive Solid Waste Management Plan for the Years 2025 through 2034" and the Transportation & Environment Committee's recommendations.

Action

The County Council for Montgomery County, Maryland, adopts the following resolution:

The Comprehensive Solid Waste Management Plan for the Years 2020 through 2029 is wholly superseded and replaced with the "Comprehensive Solid Waste Management Plan for the Years 2025 through 2034," dated April, 2025.

This is a correct copy of Council action.



Sara R. Tenenbaum
Clerk of the Council

June 24, 2025

The Honorable Kate Stewart
President
Montgomery County Council
Stella B. Werner Council Office Building
100 Maryland Avenue
Rockville, MD 20850

Dear Councilmember Stewart:

The Maryland Department of the Environment (MDE) has completed its review of Montgomery County's (the "County") Resolution 20-771 for adopting the County's 2025-2034 Solid Waste Management Plan (the "Plan"). The County Council adopted the Plan on April 8, 2025, and submitted the Plan to MDE for its review and approval to meet the requirements of Section 9- 507 of the Environment Article, Annotated Code of Maryland. MDE received the adopted Plan on May 5, 2025.

Based on this review, MDE has determined that the adopted resolution satisfies the requirements of Sections 9-503, 9-505, and 9-1703 of the Environment Article, Annotated Code of Maryland. The resolution also satisfies the requirements of 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.

Section 9-515(b) of the Environment Article, Annotated Code of Maryland, requires the Montgomery County Council to prepare a County Solid Waste Management Plan (SWMP) **at least once every three years**. The County Council must consider factors such as planning, zoning, and population estimates in the statement of objectives and policies of the SWMP. The law requires the County Executive to prepare preliminary and final drafts of the SWMP and submit them to the County Council for its approval. A new County-adopted 2029-2038 SWMP must be approved by MDE by **December 31, 2028.** To ensure that the 2029-2038 SWMP review process is completed in accordance with the statutory requirements, MDE recommends that the County submit a draft 2029-2038 SWMP to MDE for its review and comments prior to the County's adoption of the 2029-2038 SWMP. The draft 2029-2038 SWMP should be submitted to MDE for its tentative review by **June 30, 2028.**

Section 9-506(b)(2) of the Environment Article, Annotated Code of Maryland, requires the County to submit a progress report to MDE at least every two years. Since the County's Plan was adopted on April 8, 2025, the progress report is due on or before **April 8, 2027**.

1800 Washington Boulevard | Baltimore, MD 21230 | 1-800-633-6101 | 410-537-3000 | TTY Users 1-800-735-2258
www.mde.maryland.gov

Thank you for your continuing interest and cooperation in providing sound and long-term solid waste management planning for Montgomery County. If you have questions or need additional clarification these matters, please contact me at 410-537-3381 or by email at rick.kessler@maryland.gov, or have a member of your staff contact Mr. Bradley Baker, Manager, Resource Management Program, at 410- 537- 3314 or by email at Bradley.baker1@maryland.gov.

Sincerely,

Rick Kessler
Director
Land and Materials Administration

cc: Marc Elrich, Montgomery County Executive
John Monger, Director, Montgomery County Department of Environmental Protection (DEP)
Willie Wainer, Chief, Division of Recycling and Resource Management, DEP
Marilu Enciso, Senior Planning Specialist, DEP
Bradley Baker
Dave Mrgich, Chief, Waste Diversion Division, MDE
Tariq Masood, Project Manager, Waste Diversion Division, MDE

CHAPTER 1
RULES GOVERNING SOLID WASTE MANAGEMENT

This Comprehensive Solid Waste Management Plan (the "SWMP") for the succeeding ten-year planning period of 2025 - 2034 sets forth the policies, goals, and plans for managing solid waste in Montgomery County, Maryland (the "County"). The Recycling and Resource Management Division (RRMD) of the County's Department of Environmental Protection (DEP) prepared this SWMP in accordance with Title 9, Subtitle 5 of the Environment Article, Annotated Code of Maryland and the Code of Maryland Regulations (COMAR) 26.03.03.

Chapter 1 is organized as follows:

Appendix A defines the acronyms and solid waste terms used in this chapter and throughout this document.

1.1 Authority and Purpose

Maryland State law authorizes the County Council to regulate and control solid waste management in the County, pursuant to Sections 9-501 through 9-521 of the Environmental Article, Annotated Code of Maryland, and COMAR 26.03.03. State law requires the County to develop a "SWMP" for the entire County, including all towns, municipal corporations, and sanitary districts. The SWMP must cover a planning period of at least ten-years and describe the solid waste disposal systems, solid waste acceptance facilities, and the systematic collection and disposal of solid waste by public or private entities. The SWMP must be reviewed and updated at least once every three years. When deemed necessary by the County Executive or the County Council, the County Executive must prepare an amendment to the SWMP.

The SWMP describes the County's programs for providing comprehensive management of the solid waste generated by residential (including single-family and multi-family), commercial, institutional, industrial, and agricultural sectors in the County for the succeeding ten-year planning period of 2025 - 2034. The SWMP establishes the framework for current solid waste management activities and future programs implemented.

1.2 Goals, Objectives, and Policies for Solid Waste Management

Thrive Montgomery 2050 (*Thrive*)[1] establishes goals, priorities, and recommendations for guiding short—and long-range land use planning in Montgomery County. This General Plan has three overarching objectives are economic competitiveness, Racial Equity and Social Justice, and Environmental Health and Resilience. This General Plan also prioritizes policies and practices that address climate mitigation, adaptation, and the creation of community resilience. It supports improvements in the County's organic waste management systems, including food scraps composting and other natural solutions to address climate change. It supports alternative clean energy generation, distributed energy, grid modernization, improved composting and food scraps recovery, and advances in other circular economy initiatives.

The County's solid waste management programs and policies have created a system that exceeds the State's established recycling goals. The County strives to reduce the solid waste remaining for disposal. The specific strategies to attain the goals of the Plan take into account the priorities and recommendations given by *Thrive* and are included in Chapter 5. Below are the overarching goals:

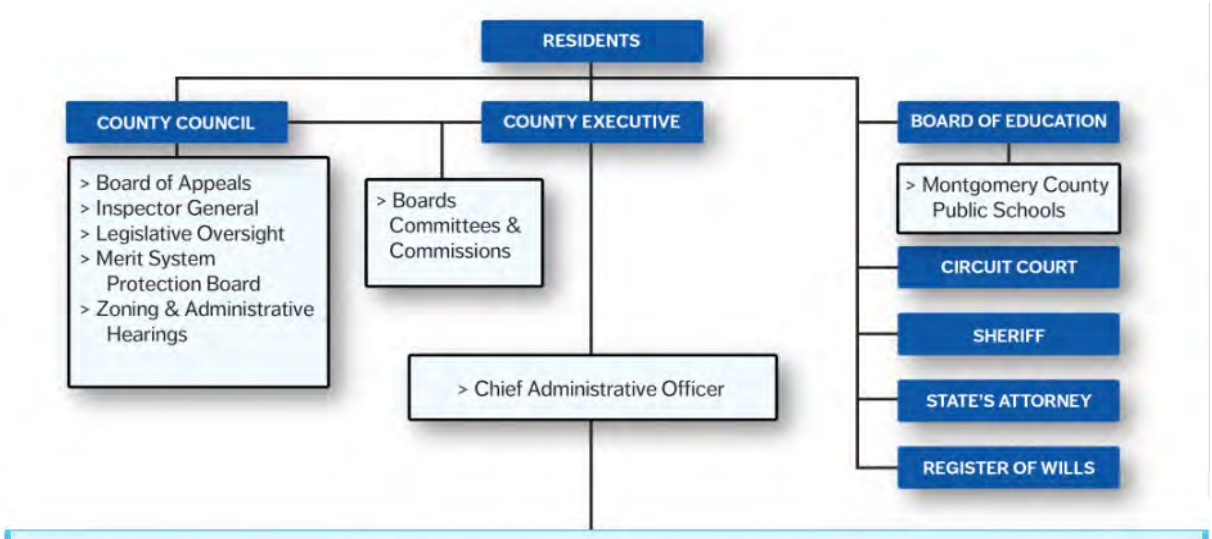
- Conserve capacity at the County's solid waste acceptance and disposal facilities, the use of these facilities is restricted to solid waste generated in the County.
- The County must undertake all waste reduction measures to the extent practical and feasible.
- All waste reduction and recycling measures implemented should use proven technologies, systems, and markets. The cost of these measures should be competitive with other recycling and waste disposal measures. Technology, markets, and cost-effectiveness are reviewed regularly to evaluate opportunities to increase recycling and reduce the disposal of waste.
- The County's Resource Recovery Facility will be the County's primary disposal method until at least April 2026.

1.3 County Government Structure

The County is a charter county of Maryland with an eleven-member County Council and a County Executive. The County Executive drafts the Plan, its amendments and revisions, and recommends solid waste legislation. The County Executive also administers the County solid waste laws in Chapter 48 of the Montgomery County Code. After providing notice and conducting public hearings, the County Council adopts the Plan, its amendments and revisions, and approves other solid waste legislation.

[1] https://montgomeryplanning.org/wp-content/uploads/2023/06/THRIVE-Approved-Adopted-Final.pdf

Figure 1.1 Montgomery County, Maryland Functional Organization Chart



Operational Departments

- Alcohol Beverage Services
- Community Engagement Cluster
- Community Use of Public Facilities
- Consumer Protection
- Correction & Rehabilitation
- County Executive's Office
- Environmental Protection
- Fire & Rescue Service
- Food Systems Resilience Office
- Health & Human Services
- Housing & Community Affairs
- Human Rights
- Libraries
- Permitting Services
- Procurement
- Police
- Racial Equality and Social Justice office
- Recreation
- Regional Services Center
- Transportation
- Women, Commission for

Administrative Departments

- County Attorney
- Ethics
- Finance
- General Services
- Human Resources
- Intergovernmental Relations
- Management & Budget
- Public Information
- Technology and Enterprise Business Solutions

Other Agencies

- Board of Elections
- District Court
- District of Columbia Water & Sewer Authority
- Housing Opportunities Commission
- Montgomery College
- Maryland-National Capital Park & Planning Commission
- Revenue Authority
- Washington Metropolitian Area Transit Authority
- Washington Suburban Sanitary Commission

1.3.1 Primary Solid Waste Management Responsibility

The day-to-day management of the County's solid waste management system and planning for solid waste management are the responsibilities of County DEP. DEP is under the general supervision of a director appointed by the County Executive and confirmed by the County Council. The DEP monitors land, air, water, and other environmental quality concerns related to solid waste management activities. Within DEP, the RRMD ensures that all municipal solid waste is handled correctly and disposed of by enforcing State regulations and Chapter 48 of the Montgomery County Code.

1.3.2 Other Executive Branch Departments that Manage Solid Waste

The Department of Housing and Community Affairs (DHCA) enforces portions of Chapter 48 by ensuring the removal of abandoned vehicles and solid waste from residential areas.

The Police Department receives and disposes of abandoned vehicles, and the Division of Animal Services contracts for collecting and disposing of dead animals. The Department of Fire and Rescue Services (DFRS) reviews solid waste acceptance facilities concerning the potential for fire and other hazards. DFRS also supports DEP in controlled hazardous substances (CHS) spill emergencies.

The County Department of Transportation (DOT) vacuums leaves from public rights-of-ways from November through January with the Leaf Collection District. The Leaf Collection District lies mostly within Subdistrict A, with a small portion in Subdistrict B, but the boundaries are not contiguous. DOT also collects roadside litter and conducts clean-up operations following significant storm events.

1.3.3 Other Agencies that Manage Solid Waste

Other agencies have the following roles in managing solid waste in the County and developing the SWMP.

Maryland-National Capital Park and Planning Commission

The Maryland-National Capital Park and Planning Commission (M-NCPPC) is a bi-county agency created by the General Assembly of Maryland to prepare, adopt, and amend land use plans for the physical development of the Maryland-Washington Regional District that includes most of Montgomery and Prince George's Counties. M-NCPPC provides DEP with information and assistance as necessary during the preparation of the SWMP. Pursuant to Section 9-515(e) of the Environment Article, Annotated Code of Maryland, the County Council must submit the final draft of any revision or amendment of the SWMP to M-NCPPC for their recommendations at least 30 days before the date set for the public hearing on the SWMP.

The County Council requested M-NCPPC comments on January 8, 2025; comments were subsequently received on February 5, 2025, and are incorporated in this final version of the SWMP.

Washington Suburban Sanitary Commission (WSSC Water)

WSSC Water is a bi-county agency created by the General Assembly of Maryland. WSSC Water is responsible for planning, designing, constructing, operating, maintaining waste and sewerage systems, and acquiring facility sites and rights-of-way to provide potable water and sanitary sewer services within the Washington Suburban Sanitary District that includes most of Montgomery and Prince George's Counties. WSSC Water provides the executive branch with information and assistance as necessary during the preparation of the Plan. Pursuant to Section 9-515(e) of the Environment Article, Annotated Code of Maryland, the County Council must submit the final draft of any revision or amendment of the SWMP for recommendation to WSSC Water at least 30 days before the date set for the public hearing on the SWMP. The County Council requested WSSC Water comments on January 8, 2025; comments were subsequently received on March 19, 2025, and incorporated in this final version of the SWMP.

Maryland Environmental Service

Maryland Environmental Service (MES) is an agency of the State of Maryland and a public corporation that provides environmental management services to public and private entities. MES receives no direct State appropriation and is required to provide its services on a fee-for-service basis. MES assists the County in the operation of several elements of the County's solid waste management system, including the operation of the Materials Recovery Facility (MRF), the County Yard Trim Composting Facility, and recycling activities taking place at the County Shady Grove Processing Facility and Transfer Station (Transfer Station).

Northeast Maryland Waste Disposal Authority

The General Assembly of Maryland created the Northeast Maryland Waste Disposal Authority (NMWDA) to assist political subdivisions, public entities, and the private sector in waste management and the development of adequate waste disposal facilities to accommodate regional requirements for solid waste disposal.

Waste Reduction and Recycling by Government Agencies

All federal, state, and County agencies must comply with all waste reduction and recycling mandates and requirements imposed on County businesses. Each agency should track its annual waste generation and recycling rates and be prepared to report to the County Executive, County Council, and the RRMD on measures undertaken to reduce the amount of trash produced, reuse materials, and recycling activities.

By Resolution 15-313, regarding environmental policy, each County agency or department must appoint Environmental Policy Coordinators, submit environmental action plans outlining their goals, including annual reports on their accomplishments, and promote environmentally responsible business practices. The County expects all federal and state agencies located in the County to abide by County waste reduction and recycling regulations.

1.4 Laws and Regulations Governing Solid Waste Management

Federal, state, and local laws and regulations govern solid waste management in the County. However, federal authority in the County is limited. Generally, federal authority to implement federal laws and regulations is given to the state, and the County's solid waste program and ordinances must meet or exceed the state's solid waste laws and regulations.

1.4.1 Federal Laws and Regulations

Resource Conservation and Recovery Act (RCRA) of 1976

As amended, this Act's primary objective is to promote recycling and reuse of recoverable materials. RCRA Subtitle D focuses on State and local governments as the primary entities that plan, regulate, and implement the management of non-hazardous solid waste, such as household garbage and non-hazardous industrial solid waste.

RCRA Subtitle C establishes a federal program to manage hazardous wastes from creation to proper disposal, ensuring that hazardous waste is handled to protect human health and the environment.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Establishes programs for identifying and remedying waste disposal sites containing hazardous substances; establishes standards for clean-up efforts and waste disposal; and provides a mechanism for assigning liability for contaminated sites.

Clean Water Act (CWA)

Section 402 of this act establishes the National Pollutant Discharge Elimination System (NPDES) program to address the discharge of wastewater and runoff from solid waste management facilities into surface waters. The construction of facilities that may impact any rivers, lakes, marshes, swamps, or wetlands of the United States is addressed by Section 404, administered by the Army Corps of Engineers. Section 405 addresses the disposal of wastewater treatment biosolids.

Clean Air Act (CAA)

Title I of the CAA addresses emissions from landfills and authorizes regulations on the collection and control of those emissions. Title V of the CAA addresses the potential to emit pollutants and authorizes permitting regulations for major polluters. Landfill facilities are subject to Title I and are required to obtain a Title V permit, in addition to any facility that is a "major source" of pollutants.

Safe Drinking Water Act (SDWA)

Establishes maximum contaminant levels for parameters included in groundwater monitoring programs.

Federal Emergency Management Act (FEMA)

Prohibits siting of landfills within the 100-year floodplain (Subtitle D allows for an exception if the unit will not restrict the flow on the 100-year flood, reduce the temporary storage capacity of the floodplain, or result in washout of solid waste).

Public Utilities Regulatory Policies Act (PURPA)

Encourages co-generators and small power producers, such as municipal solid waste combustors, to supplement their existing electrical utility capacity. The Federal Energy Regulatory Commission is responsible for implementing regulations and setting limits on the power output of these facilities.

Code of Federal Regulations (CFR), TITLE 40, SUBCHAPTER I

Provided below are federal regulations related to solid waste management including municipal solid wastes (non-hazardous wastes) and hazardous wastes.

Part 240: Guidelines for the Thermal Processing of Solid Wastes
Minimum performance levels for MSW incinerators.

Part 243: Guidelines for the Storage and Collection of Residential, Commercial, and Institutional Solid Waste
Minimum performance levels for solid waste collection operations. Issues addressed include storage safety and equipment and collection frequency and management.

Part 246: Source Separation for Materials Recovery Guidelines
Minimum actions are recommended to recover resources from solid wastes, including high-grade paper, residential materials, and corrugated containers.

Part 247: Guidelines for the Procurement of Products that Contain Recycled Materials
Recommended guidelines only. Procedures and specifications for procurement of products to increase the use of recycled material.

Part 255: Identification of Regions and Agencies for Solid Waste Management
Procedures for the identification of regional solid waste management planning districts.

Part 256: Guidelines for Development and Implementation of State Solid Waste Management Plans
Guidelines for development and implementation of state solid waste management plans.

Part 257: Criteria for the Classification of Solid Waste Disposal Facilities and Practices
Criteria to determine which solid waste facilities pose a reasonable probability of adverse effects on health or the environment. Facilities in violation will be considered open dumps. It does not apply to municipal landfills (covered under Part 258).

Part 258: Criteria for Municipal Solid Waste Landfills (Subtitle D Regulations)
Establishes minimum national criteria for the design and operation of MSW landfills. Includes location restrictions, operating criteria, design criteria, groundwater monitoring, corrective action, closure and post-closure, and financial assurance criteria. Design standards apply only to new landfills and lateral expansions of existing facilities.

Part 260: Hazardous Waste Management System - General
Provides definitions and a general overview of Parts 260 through 265.

Part 261: Identification and Listing of Hazardous Waste
Provides identification of those materials which are subject to regulation as hazardous wastes under Parts 270, 271, and 124.

Part 264: Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities
Establishes minimum national standards for the management of hazardous wastes.

Part 265: Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
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: Standards for the Management of Specific Hazardous Wastes and Specific Types of Hazardous Waste Disposal Sites
Establish minimum national standards for the recyclable materials used in a manner that constitutes 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 270: EPA Administered Permit Programs: The Hazardous Waste Permit Program
Application requirements, standard permit conditions, monitoring, and reporting requirements for EPA permitting for the treatment, storage, and disposal of hazardous waste.

Part 271: Requirements for Authorization of State Hazardous Waste Programs
Identifies the requirements 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: Approved State Hazardous Waste Programs
Establishes the applicable state hazardous waste management programs.

Part 273: Standards for Universal Waste Management
Establishes the requirements for managing batteries, pesticides, mercury-containing equipment, and lamps.

Part 503: Standards for the Use or Disposal of Sewage Sludge
Establishes standards, which consist of general requirements, pollutant limits, management practices, and operational standards for the final use or disposal of sewage sludge generated during domestic sewage treatment in treatment works.

1.4.2 Maryland Laws and Regulations

The primary laws of the State of Maryland that relate to solid waste management are contained in the *Local Government Article, the Environment Article, and the Natural Resources Article.* Pursuant to Section 10-317(a)(2) of the Local Government Article, charter counties have the power to enact local laws concerning waste disposal. Title 9 of the Environment Article contains provisions for the planning and permitting solid waste management and related facilities.

It also provides for the regular submission of solid waste management plans by the counties, sets forth the minimum requirements of such plans, provides for a recycling office, and requires counties to submit a recycling plan. Notable sections include the following:

- Section 9-204 defines the requirements for Refuse Disposal Permits issued by the MDE.
- Section 9-210 requires that specific wastes that are authorized for disposal in rubble landfills in the County be defined in the Plan before issuance of a permit by the State and provides prerequisites for the issuance of permits for refuse disposal systems.
- Section 9-211 describes the financial assurance requirements relating to the siting of solid waste facilities.
- Section 9-228 pertains to the storage, recycling, and disposal of scrap tires through state efforts. Regulations for this program are in the COMAR 26.04.08.
- Section 9-1703 requires that each county submit a recycling plan to the state when the Plan is submitted. This section also defines specific information to be included in both plans including the SWMP;
- Section 9-1708 establishes requirements for a natural wood waste recycling facility.
- The Natural Resources Article also contains several sections related to solid waste management planning. Notable provisions are included in Title 3, Subtitle 1 (Maryland Environmental Service), Title 9, Subtitle 4 of the Environment Article (Hazardous Waste Facility Siting Program), and Title 3, Subtitle 9 (Northeast Maryland Waste Disposal Authority).
- The primary regulations governing solid waste management are contained in COMAR's Title 26 (Department of the Environment). The pertinent sections of Title 26 are as follows:
  - Subtitle 03 – Water Supply, Sewerage, Solid Waste, And Pollution Control Planning And Funding, which pertains to the development of county Comprehensive Solid Waste Management Plans;
  - Subtitle 04 – Regulation of Water Supply, Sewage Disposal, And Solid Waste, which contains general provisions related to all aspects of solid waste management;
  - Subtitle 11 - Air Quality, which contains requirements governing incinerators and asbestos disposal; and
  - Subtitle 13 - Disposal of Controlled Hazardous Substances, which contains requirements for the management of CHS.

The text below lists the relevant sections (alphabetical order and year) of the Annotated Code of Maryland and other state regulations affecting solid waste management.

Chesapeake Bay Critical Area Protection Program (1984)

Controls human intervention in the Bay area.

Composting Act (1992)

Includes composting in the definition of recycling. It requires that county recycling plans address composting issues and bans loads of yard materials collected separately from trash from being landfilled, effective in 1994.

Electronics Recycling Program (2007)

Mandates that manufacturers of certain electronic devices (computers, televisions, etc.) contribute payments toward a fund for local government electronics recycling programs or that such manufacturers establish their own electronics recycling collection programs. Authorizes counties to address the subject of electronics recycling in their recycling plans.

Expanded Polystyrene Food Service Products Ban (2020)

Bans the sale and use of food service products composed of expanded polystyrene.

Fluorescent and Compact Fluorescent Light Recycling (2010)

An Act requiring a county recycling plan to address the strategy for the collection and recycling of fluorescent and compact fluorescent lights that contain mercury.

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

Addresses the number of bonds required as security for each acre of land-clearing debris landfills.

Maryland Air Quality Control Act (1989)

This Act allows the adoption of rules for air pollution control, sets emission standards and air quality control areas, and requires training for municipal solid waste incinerator operators.

Maryland Environmental Service Act (1970)

The Maryland Environmental Service was created to manage service regions that were created to deal with issues affecting the State's water supply, wastewater purification, and solid waste management.

Maryland Landfill Siting Law (1994)

This law describes the requirements for public hearings regarding landfill siting, addresses permitting and security requirements, and explains the requirements for submitting plans and documents necessary to conduct a technical review and approve proposed facilities.

Maryland Landfill Financial Assurance Law (1997)

Sets forth financial assurance requirements for landfills in conformance with the requirements of federal regulations.

Maryland Nonpoint Source Pollution Control Laws (1990-1994)

Allows counties and soil conservation districts to adopt criteria and procedures to implement soil erosion control programs and counties and municipalities to implement stormwater management programs.

Maryland Recycling Rate and Diversion Goal (2012)

This law amends the 1988 Maryland Recycling Act by requiring solid waste management plans to include a recycling plan that achieves an increase in the countywide recycling rate of 20% (counties with populations below 150,000) and 35% (counties with populations above 150,000) of the county's solid waste stream by December 31, 2015. The law also establishes a voluntary state-wide waste diversion goal of 60% and the method for calculating county diversion rates.

Maryland Recycling Act (2021)

House Bill 280 (2021) altered the definition of "recyclable materials" under the Maryland Recycling Act t to exclude incinerator ash; repealing the authority of a county to utilize a resource recovery facility to meet a certain percentage of the waste reduction required to be achieved through recycling in the county's recycling plan; making conforming changes; and generally relating to the Maryland Recycling Act.

Maryland Senate Joint Resolution 6 (2000)

Sets a voluntary statewide goal of 40 percent waste diversion by 2005, with a credit of up to 5 percent for jurisdictions engaged in specified waste prevention activities. "Waste diversion" is defined as the recycling rate plus waste prevention credit. Mandatory recycling rates established by the Maryland Recycling Act 1988 remain in effect.

Maryland State Implementation Plan (SIP) (Ongoing)

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

Maryland Used Oil Recycling Act (1997)

Requires MDE to develop programs to educate the public on oil recycling and designate used oil collection facilities. It also prohibits the disposal of used oil into sewers, drainage systems, or natural waters.

Maryland Wastewater Treatment Law (1987)

Requires permits before installing, altering, or extending a water supply system or refuse disposal system (including a landfill, waste transfer station, incinerator, or other waste processing facility).

Medical Waste Legislation (1988)

The state regulates the identification, record keeping, treatment, transport, and disposal of special medical wastes and prohibits infectious wastes in solid waste and landfills.

Natural Wood Waste Recycling Act (1991)

Establishes the requirements for wood waste recycling in Maryland, authorizes the Department of the Environment to adopt additional regulations governing recycling facilities, and requires a permit to operate these wood waste facilities created after July 1, 1992.

Mercury Oxide Battery Act (1992)

Makes mercury oxide battery manufacturers responsible for collecting, transporting, and recycling, or disposal of batteries sold or offered for promotional purposes in the state.

Newsprint Recycled Content Act (1991)

Regulates newsprint recycling by imposing specified recycling content percentage requirements on the Maryland newspaper industry. It was amended in 2006 to measure compliance based on a rolling three-year average.

Nickel Cadmium (NICD) Battery Act (1995)

Regulates the storage, transportation, and destination of nickel-cadmium batteries.

Nontidal Wetland Regulations (1990)

Prevents net loss of non-tidal wetlands by establishing a stringent permitting process.

Northeast Maryland Waste Disposal Authority (1980)

Creates and establishes the powers of the Northeast Maryland Waste Disposal Authority.

Northeast Maryland Waste Disposal Authority Sunset Act (2023)

This bill terminates the NMWDA's bond authority. HB161 (2023) also required a study of the NMWDA by each of the Department of Legislative Services (DLS) and the MES. DLS also had to prepare certain draft legislation that, if enacted, would lead to the dissolution of the NMWDA. The draft legislation that DLS was to prepare would also require (1) MES to temporarily assume the functions, employees, and contracts of NMWDA during any merger until the entity with which NMWDA merges is prepared and ready to assume those functions, employees, and contracts and (2) an entity that assumes a portion or all of the functions, employees, or contracts to establish a system for maintaining stakeholder engagement. HB161 (2023) took effect June 1, 2023.

Organics Waste, Organics Recycling, Collection, and Acceptance for Final Disposal (2019)

This Act prohibits the owner or operator of a refuse disposal system from accepting loads of separately collected organic waste for final disposal unless the owner or operator provides organic recycling.

Organics Recycling and Waste Diversion - Food Residuals (2021)

The Act requires large food scraps generators to divert food scraps from disposal if the food generators are located within 30 miles of an organics recycling facility with the capacity and willingness to enter into a contract.

Plastic Material Code (1991)

Regulates that rigid plastic containers or bottles may not be distributed for sale in the state unless appropriately labeled, indicating the plastic resin used to produce them.

Public School Plans (2009)

An Act requiring a county recycling plan to address the strategy for collecting, processing, marketing, and disposing of recyclable materials from county public schools.

Recycling – Apartment Buildings and Condominiums (2012)

An Act requiring a county recycling plan to address the collection and recycling of recyclable materials from residents of apartment buildings and condominiums that contain ten or more dwelling units by property owners or managers of apartment buildings and councils of unit owners of condominiums. Implements a reporting requirement for recyclable materials generated at apartment buildings and condominiums that contain ten or more dwelling units when applicable.

Recycling – Composting Facilities Act (2013)

This act provides that a person may operate a composting facility only under specified requirements, regulations, orders, and permits and requires the Department of the Environment to adopt regulations to establish a permit system for composting facilities.

Recycling – Office Buildings (2019)

An Act requiring a County Recycling Plan to address the collection and recycling of recyclable materials from buildings with 150,000 square feet or greater office space by October 1, 2020.

Recycling Market Development (2021)

The Act requires the Office of Recycling of MDE to promote the development of markets for recycled materials and products in the State. Also, it requires MDE to evaluate the availability of certain markets and identify businesses in the State that use recycled materials.

Recycling – Special Events (2014)

An Act requiring a County Recycling Plan to address the collection and recycling of recyclable materials from special events by October 1, 2015. It was amended in 2017 to require a county government to provide a written statement before issuing a certain permit for a special event after October 1, 2017.

Scrap Tire Law (1992)

Prohibits the disposal of scrap tires in landfills after January 1, 1994, and creates a licensing system to manage scrap tires. Establishes requirements for implementing a scrap tire recycling system, licensing haulers, and collection facilities. Establishes the Tire Clean-Up and Recycling Fund.

Sludge Application (1993)

Regulates land application procedures for sludge to maintain public health.

Statewide Recycling Needs Assessment and Producer Responsibility for Packaging Materials (2023)

This Act alters the definition of "Organics Recycling" to include the processing of certain compostable packaging materials in a certain manner. MDE is required to approve a certain producer responsibility organization for certain purposes on or before a certain date.

Telephone Directory Recycling Act (1991)

Requires telephone directory publishers to meet specified recycling content percentage.

Waste Reduction and Resource Recovery Plan for Maryland (2017)

Creates a policy to minimize the environmental impacts of materials management, conserve in-state disposal capacity, optimize resources, and create an environmentally and economically sustainable materials management system.

Water and Sewage Plan Act (1983)

Requires the preparation and submission of solid waste management plans by counties and establishes the minimum requirements for such plans.

Yard Waste Act (1994)

Bans separately collected yard waste from disposal facilities after October 1994.

COMAR Regulations

The principal regulations of the State of Maryland about solid waste management are found in the Code of Maryland Regulations (COMAR)[2]. Pertinent regulations include:
Title 26 Department of the Environment:

- Subtitle 04 Regulation of Water Supply, Sewage Disposal, and Solid Waste (COMAR 26.04.07).

[2] http://www.dsd.state.md.us/COMAR/ComarHome.html

- Food Residuals - Organics Recycling and Waste Diversion (COMAR 26.04.13) Organics Recycling and Waste Diversion. The regulations implement House Bill 264/Senate Bill 483 of 2021 and establish certain regulatory conditions for persons required to divert food residuals from final disposal in a refuse disposal system. The new regulations became effective on December 26, 2022.
- Subtitle 3 - Regulates the development of County Comprehensive Ten-Year Solid Waste Management Plans and addresses funding;
- Subtitle 8 - Water Pollution;
- Subtitle 11 - Air Quality;
- Subtitle 13 - Disposal of Controlled Hazardous Substances;
- Subtitle 17 - Water Management;
- Subtitle 23 - Non-Tidal Wetlands also have a bearing on waste management planning.

1.4.3 Montgomery County Code and Regulations

Regulations affecting solid waste management activities are present in nine chapters of the Montgomery County Code. Chapter 48 (Solid Wastes) specifically addresses solid waste management. A summary of the solid waste management regulations in each chapter of the County Code is provided below.

Chapter 3 (Air Quality Control)

Provides for burning leaves and household trash in certain parts of the County (Section 3-6).

Chapter 5 (Animal Control)

Provides for the collection and disposition of dead cats and dogs (Section 5-102) and the disposal of carcasses of animals killed exposed to rabies (Section 5-55).

Chapter 11B (Contract and Procurement)

Provides for the use of goods containing recycled materials for County government procurement.

Chapter 19 (Erosion, Sediment Control, and Storm Water Management)

Governs erosion and sediment control, stormwater management, and activities conducted in a floodplain.

Chapter 22 (Fire Safety Code)

Addresses scrap, waste, and junkyards and collection stations with reference to fire protection (Section 22-61); the collection and burning of shavings, sawdust, and other refuse materials produced at lumberyards and woodworking plants (Section 22-64); and the storage and handling of combustible waste and refuse (Section 22-80).

Chapter 25 (Hospitals, Sanitariums, Nursing, and Care Homes)

Provides for the storage and disposal of garbage and "infectious" wastes at health care facilities (Section 25-43).

Chapter 28 (Junk Dealers and Junk Yards)

Provides for the licensing of junk dealers, the conditions for operating a junkyard, and a prohibition against burning tires and other materials that create obnoxious odors or excessive smoke (Sections 28-1 to 7).

Chapter 31B (Noise Control)

Governs the generation of noise.

Chapter 48 (Solid Wastes)

Provides for the management of solid waste[3]. This Chapter provides for the licensing and permitting of solid waste collection, transportation, and disposal (Sections 48-5, 48-19, 48-22) and authorizes the County to establish service and disposal facilities (Section 48-8). Specifically, it provides for establishing refuse collection districts (Section 48-29).

Article V of Chapter 48 requires the County Executive to develop a recycling program, which County Executive Regulation may establish. The regulations set the recycling goal for the County's recycling program and how the recycling rate achieved in the County is measured. It contains compliance and enforcement provisions and authorizes the County Executive to enter into contracts to procure recycling services necessary for collecting, processing, and marketing recyclables.

[3] In Maryland regulation (COMAR 26.03.3.01), "Solid waste also includes the "liquid" from industrial, commercial, mining, or agricultural operations, and from community activities…"

County Regulations[4]

Collecting / Hauling / Transporting

- Executive Regulation 18-04 - Collection, Transport, and Disposal of Solid Waste
- Executive Regulation 18-08 - Transfer into and out of Collection Districts
- Executive Regulation 5-13 AM - Solid Waste Tonnage Reporting

Leaf Vacuuming

- Executive Regulation 6-99AM - Expansion of Leaf Vacuuming Collection District

Recycling

- Executive Regulation 7-12 - Solid Waste and Recycling
- Executive Regulation 1-15 - Residential and Commercial Recycling

System Benefit Charge

- Executive Regulation 9-99 - Systems Benefit Charge - Non-residential Trash

Solid Waste (Trash) Bills

- Bill 41-14 - Food Service Products – Packaging Materials – Requirements
- Bill 28-16 - Strategic Plan to Advance Composting, Compost Use, and Food Waste Diversion
- Bill 32-20 - Waste Reduction/Source Reduction and Single-Use Straws
- Bill 33-20 - Food Service Products Packaging Materials
- Bill 6-20 - Release of Balloons Prohibited –Prohibited Release of Balloons
- Bill 32-20 - Waste Reduction/Source Reduction and Single-Use Straws – Requirements
- Bill 33-20 - Food Service Products Packaging Materials

Chapter 59 (Zoning)

This document defines solid waste facilities and provides a list of land use zones in which they are permitted by right or special exception.

[4] Montgomery County Executive Regulations

CHAPTER 2
POPULATION, EMPLOYMENT, AND LAND USE

This chapter describes the Montgomery County's population, employment, and land-use practices. These factors provide information for projecting solid waste quantities and planning the future needs of the solid waste management system. Population, consumption, and employment trends also assist with estimating the amount and composition of waste generated. Land use practices and conditions influence solid waste planning and may place constraints on the location of solid waste facilities. This chapter is organized as follows:

2.1 Population trends
2.2 Municipalities and Subsidiary Plans
2.3 Employment trends and federal facilities within the County
2.4 Comprehensive Land Use Plan
2.5 Zoning requirements related to solid waste management activities

Appendix A defines acronyms and solid waste terms used in this chapter and throughout this document.

2.1 Population Trends

Montgomery County is the largest County in Maryland. It has retained its status as the second-largest County in the Washington, D.C. metropolitan region and is now the 45th largest County in the United States. According to County Demographic Trends,[1] the County is growing at a smaller rate than in previous decades. Montgomery County was still growing in the 2010s, but lost population from 2020 to 2022 because of increased net domestic out-migration from the County. A similar trend occurred with Washington, D.C. and the inner suburban jurisdictions such as Prince George's County (MD) and Fairfax County (VA). The COVID-19 Pandemic allowed more people to work remotely and live further out in Frederick County (MD), Loudoun County (VA), etc.

- The population is aging, with 21% of the County expected to be over 65 by 2045. Younger residents are more likely to be people of color, while older residents are more likely to be White.
- The County is one of the most highly educated counties in the US; ranked 7th for the percentage of the population with graduate degrees. Yet significant disparities in income and educational attainment persist.
- The median household incomes of Black and Hispanic households are less than 65% of the median household incomes of White and Asian households.

[1] Montgomery County Demographic Trends, Presentation to the Montgomery Planning Board December 7, 2023

- Only 28% of Hispanics and 47% of Blacks have at least a Bachelor of Arts (BA).
- While two-thirds of residents own their homes, housing tenure varies significantly by race.
- Commuting patterns and how people work are still undergoing major shifts.

At 28%, the percentage of people working from home is significantly higher than pre-pandemic levels.[2] Significant changes are expected due to the Federal return-to-work policies imposed by the new government starting February 2025.

The most recent growth forecasts are contained in the Round 10 Cooperative Forecasts, prepared by Montgomery County's Planning Department, The Maryland-National Capital Park Planning Commission (M-NCPPC). M-NCPPC projections in **Table 2.1** suggest a slow-growth population averaging approximately 0.65 percent per year for the planning period 2025-2034. The Round 10 forecast was recently completed, and new numbers show that over the next 30 years, the County is projected to experience growth in population, households, and jobs. However, the growth rate is estimated to be slower than previous forecasts, reflecting the County's status as a populous, maturing suburb.

Table 2.1 Population Projections of Montgomery County, Maryland 2023-2035

Year	Estimated Population
2023	1,074,300
2024	1,078,600
2025	1,083,000
2026	1,090,000
2027	1,097,000
2028	1,104,000
2029	1,111,000
2030	1,118,000
2031	1,125,200
2032	1,132,400
2033	1,139,600
2034	1,146,700
2035	1,153,900

Source: Round 10 Cooperative Forecast, Research & Strategic Projects, Montgomery Planning, M-NCPPC. Original forecast data in five-year increments: 2025, 2030, and 2035. Intermediate years were interpolated. Years are calendar years. Numbers are rounded to the nearest hundred.

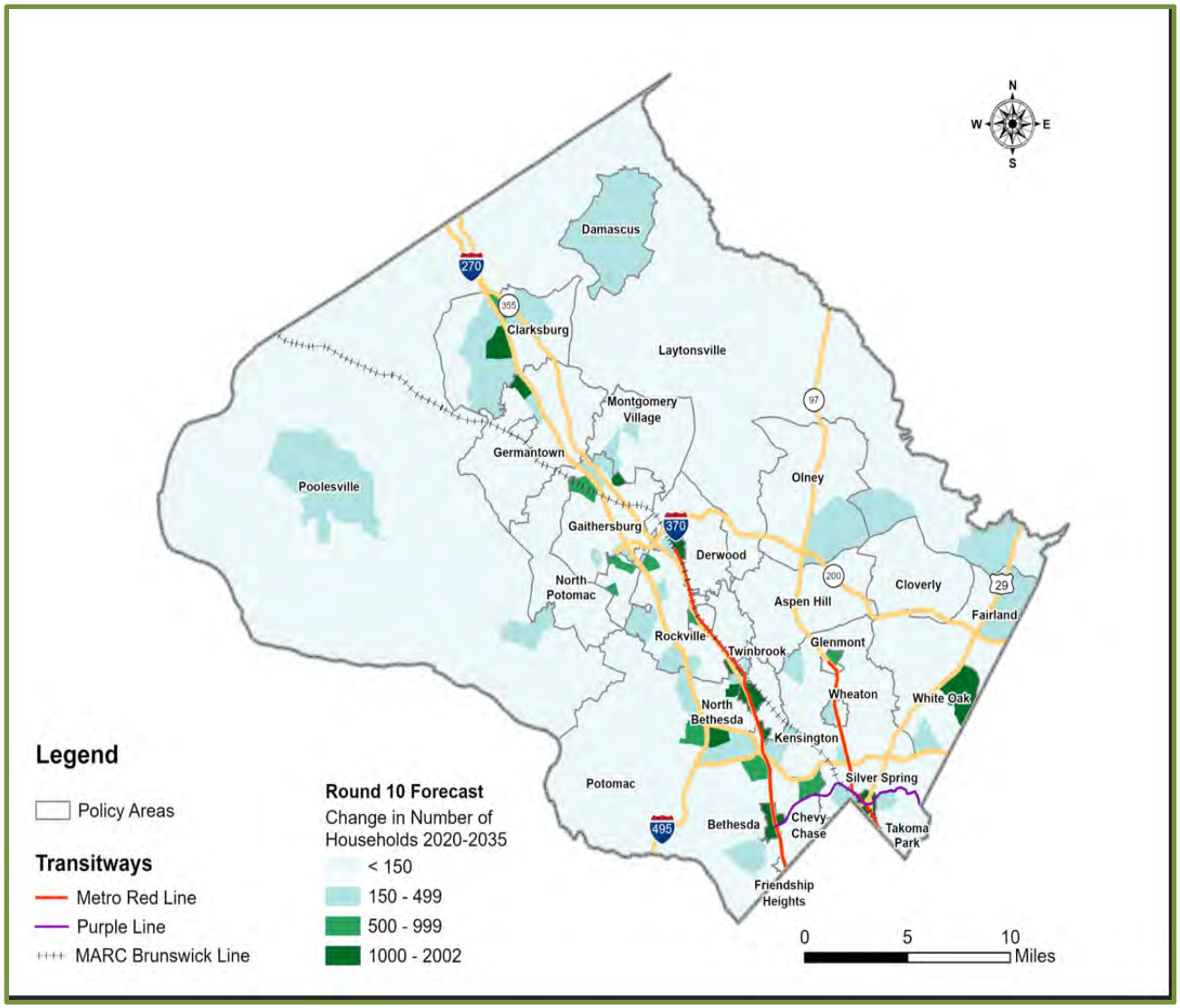
According to the projections, an increase in population of about 84,000 residents is expected during the 2022 to 2035 planning period. A total increase of 47,800 households is anticipated between 2020 and 2035 (**Table 2.2**). The areas with the largest number of household increases (**Figure 2.1**) are Bethesda (5,000), North Bethesda (4,500), and Silver Spring (3,500). Shady Grove, White Flint, and Twinbrook are the three areas with high percentage increments of households.

Table 2.2 Household Growth Montgomery County, Maryland 2020-2035

	Households		Households Growth	
Policy Area	2020	2035	Change	% Change
Bethesda CBD	8,600	13,600	5,000	58%
North Bethesda	14,400	18,900	4,500	31%
Silver Spring CBD	10,600	14,100	3,500	33%
Gaithersburg City	25,900	29,200	3,300	13%
White Flint	4,000	7,100	3,100	78%
Clarksburg	8,700	11,600	2,900	34%
Rockville City	21,800	24,200	2,400	11%
Bethesda/Chevy Chase	28,000	30,400	2,400	8%
Germantown West	21,900	23,800	1,900	9%
Shady Grove Metro Station	1,100	2,900	1,800	154%
White Oak	7,200	8,800	1,600	23%
R&D Village	6,100	7,600	1,500	25%
Twinbrook	2,200	3,700	1,500	68%
Silver Spring/Takoma Park	29,500	30,900	1,400	5%
Potomac	17,300	18,700	1,400	8%
Kensington/Wheaton	34,000	35,200	1,200	4%
Grosvenor	3,500	4,600	1,100	31%
Rockville Town Center	3,900	4,900	1,000	26%
Rural West	7,300	8,200	900	12%
Wheaton CBD	3,600	4,300	700	19%
Montgomery Village/Airpark	18,600	19,400	800	4%
Rural East	11,500	12,200	700	6%
Glenmont	1,100	1,700	600	55%
Fairland/Colesville	21,300	21,800	500	2%
Damascus	3,900	4,300	400	10%
Olney	11,900	12,300	400	3%
Germantown East	8,300	8,700	400	5%
North Potomac	8,800	9,000	200	2%
Aspen Hill	24,800	25,000	200	1%
Derwood	5,800	6,000	200	3%
Germantown Town Center	1,700	1,800	100	6%
Cloverly	5,300	5,400	100	1%
Friendship Heights	4,000	4,100	100	1%
Grand Total	386,600	434,400	47,800	12%

Source: Numbers for households and absolute change rounded to the nearest hundred. Numbers for absolute change and percent change are calculated from unrounded numbers. Details may not be summed up to totals due to rounding. Forecasts are prepared as part of the Cooperative Forecasting Process of the Metropolitan Washington Council of Governments (www.mwcog.org). Projections for areas within the Cities of Gaithersburg and Rockville are based on the forecasts prepared by each City under the Cooperative Forecasting Process—source: Round 10 Cooperative Forecast, Research & Strategic Projects, Montgomery Planning, M-NCPPC.

Figure 2.1 Household Growth Projection for 2020 – 2035 Montgomery County



2.2 Municipalities

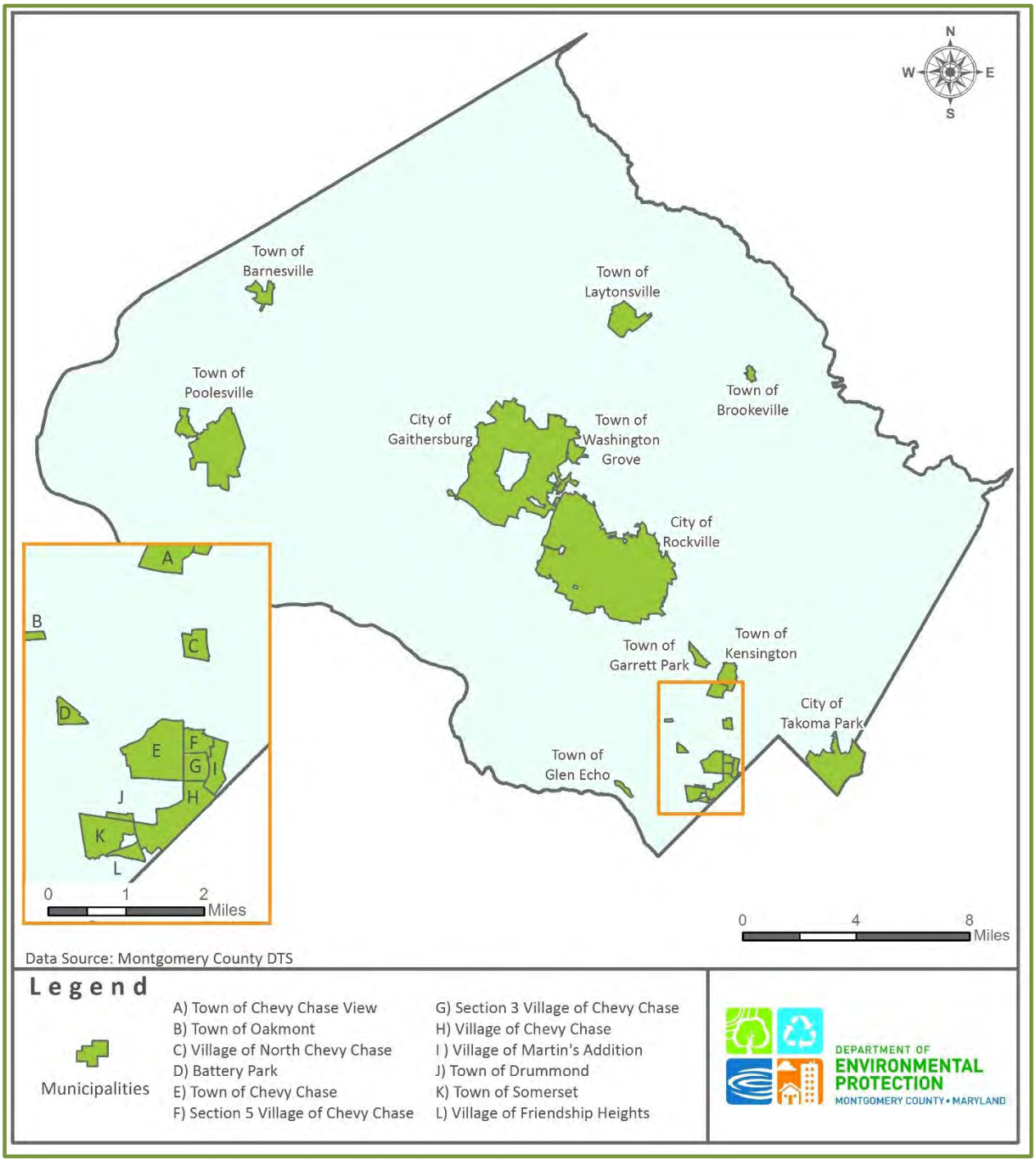
Title 26.03.03.02B of COMAR requires that "*each County plan shall include all or part of the subsidiary plans of the towns, municipal corporations, sanitary districts, privately owned facilities, and local, state and federal agencies having existing, planned or programmed development with the County to the extent that these inclusions shall promote public health, safety, and welfare.*" The County has received no subsidiary solid waste management plans for inclusion in this SWMP. **Table 2.3** lists municipalities in Montgomery County and their (estimated) populations for 2022. The municipalities do not have separate solid waste plans. Chapter 3 describes their solid waste management practices. **Figure 2.2** depicts a map of Montgomery County and the location of its 19 incorporated areas. Approximately 174,000 residents reside within these incorporated municipalities, an estimated decrease from the 177,000 reported in 2019.

Table 2.3 Population of Incorporated Municipalities in Montgomery County

Incorporated Municipality	Population Est. (2022)
Barnesville Town	140
Brookeville Town	163
Chevy Chase Town	2,855
Chevy Chase Section Five Village	663
Chevy Chase Section Three Village	788
Chevy Chase View Town	991
Chevy Chase Village Town	2,019
Gaithersburg City	68,952
Garrett Park Town	978
Glen Echo Town	275
Kensington Town	2,099
Laytonsville Town	569
Martin's Additions Village	928
North Chevy Chase Village	676
Poolesville Town	5,688
Rockville City	66,924
Somerset Town	1,171
Takoma Park City	17,390
Washington Grove Town	497

Source: U.S. Census Bureau, Population Division, Population Estimate Program (Release date: May 2023). Compiled by Research & Strategic Projects, Montgomery Planning, M-NCPPC (1/22/2024).

Figure 2.2 Map of Montgomery County Including Municipalities



2.3 Employment Trends and Federal Facilities within the County

Similar to areas across the United States, the Washington, D.C. metropolitan region's economy suffered from the COVID-19 pandemic, which presented challenges and uncertainty for the forecasting process. However, local jurisdictions have seen jobs recover near or above pre-pandemic levels and anticipate continued growth. From 2020 to 2050, Washington, D.C. metropolitan region's employment is forecasted to grow by 31%, population by 25%, and households by 32%.

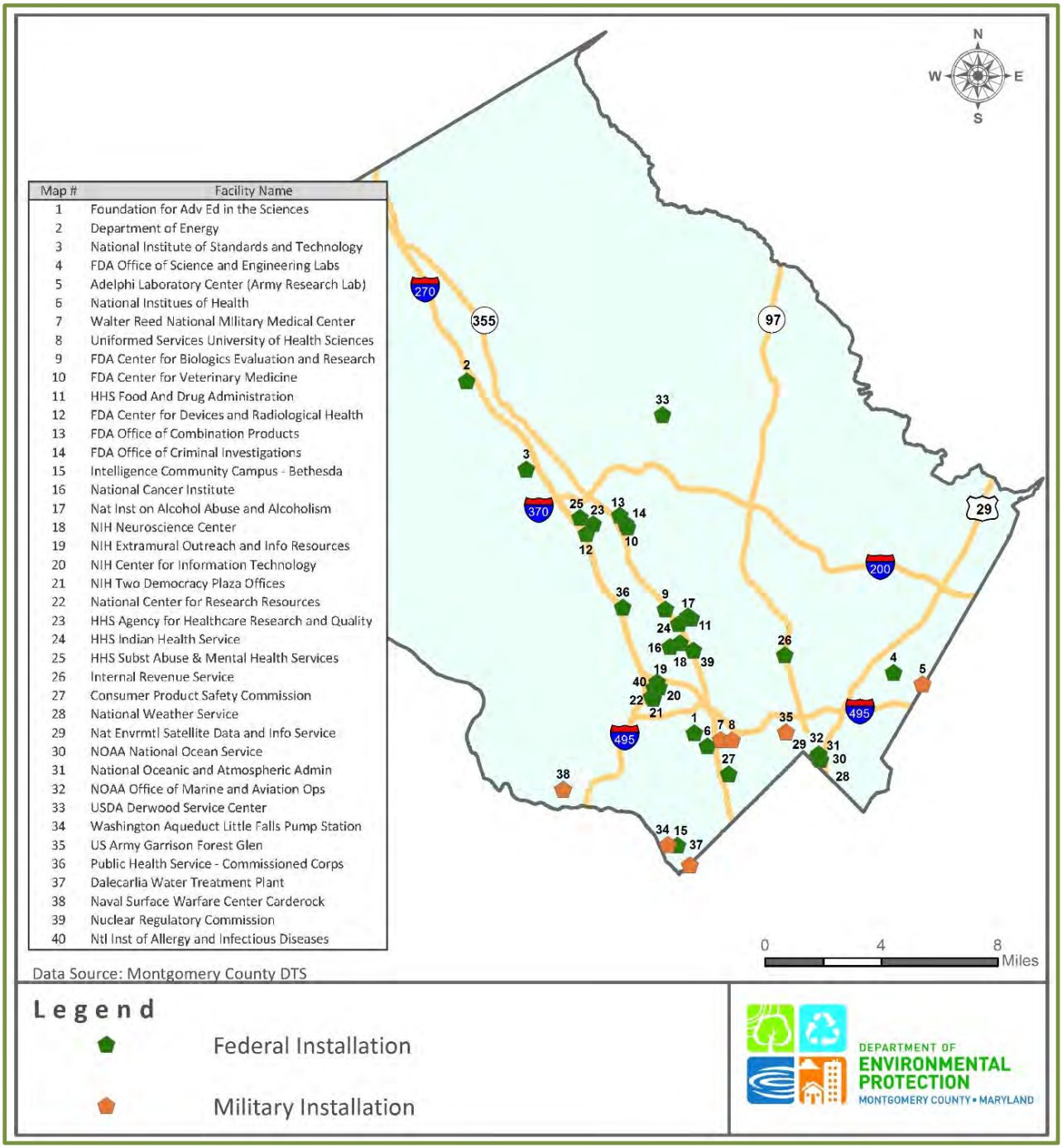
The projections presented within this SWMP are based on the Round 10 forecast, the first round completed since the COVID-19 pandemic. Governments, the private sector, and other entities use these projections for a wide range of local and regional planning activities, such as transportation, water, and air quality modeling, analyzing the effects of growth and demand for public facilities such as this SWMP.

The County's employment distribution between the private and public sectors has generally remained the same since the 1990s. The County is a major federal employment hub and a robust private-sector employment center. The federal government is the top employer in Montgomery County, followed by the National Institutes of Health (17,580 employees), U.S. Food and Drug Administration (13,855 employees), and Naval Support Activity (12,000 employees). **Figure 2.3** shows the locations of federal installations in the County.

The fastest growth has been in education, health and social services, professional management, and scientific services within the private sector. Montgomery County's private sector industries generate $75.1 billion in economic output in information technology, telecommunications, biotechnology, software development, aerospace engineering, professional services, and government or federal contractors. The leading private employers include Adventist Healthcare, Choice Hotels, Emergent BioSolutions, GEICO, Giant Food, HMSHost, Kaiser Permanente, Lockheed Martin, Marriott International, MedImmune, Supernus, Verizon, and WeddingWire.

The areas forecasted to experience the most significant job growth are already major employment centers concentrated along major transportation corridors such as the WMATA Red Line, Interstate 270, and U.S. 29. These areas include downtown Bethesda, downtown Silver Spring, White Flint/North Bethesda, the Great Seneca Science Corridor, White Oak, and Germantown, which are part of the Corridor-Focused Growth area and include large and medium activity centers as identified in the county's General Plan, Thrive Montgomery 2050 (Thrive).

Figure 2.3 Map of Montgomery County Including Federal Installations



Map #	Facility Name
1	Foundation for Adv Ed in the Sciences
2	Department of Energy
3	National Institute of Standards and Technology
4	FDA Office of Science and Engineering Labs
5	Adelphi Laboratory Center (Army Research Lab)
6	National Institutes of Health
7	Walter Reed National Military Medical Center
8	Uniformed Services University of Health Sciences
9	FDA Center for Biologics Evaluation and Research
10	FDA Center for Veterinary Medicine
11	HHS Food And Drug Administration
12	FDA Center for Devices and Radiological Health
13	FDA Office of Combination Products
14	FDA Office of Criminal Investigations
15	Intelligence Community Campus - Bethesda
16	National Cancer Institute
17	Nat Inst on Alcohol Abuse and Alcoholism
18	NIH Neuroscience Center
19	NIH Extramural Outreach and Info Resources
20	NIH Center for Information Technology
21	NIH Two Democracy Plaza Offices
22	National Center for Research Resources
23	HHS Agency for Healthcare Research and Quality
24	HHS Indian Health Service
25	HHS Subst Abuse & Mental Health Services
26	Internal Revenue Service
27	Consumer Product Safety Commission
28	National Weather Service
29	Nat Envrmtl Satellite Data and Info Service
30	NOAA National Ocean Service
31	National Oceanic and Atmospheric Admin
32	NOAA Office of Marine and Aviation Ops
33	USDA Derwood Service Center
34	Washington Aqueduct Little Falls Pump Station
35	US Army Garrison Forest Glen
36	Public Health Service - Commissioned Corps
37	Dalecarlia Water Treatment Plant
38	Naval Surface Warfare Center Carderock
39	Nuclear Regulatory Commission
40	Ntl Inst of Allergy and Infectious Diseases

M-NCPPC forecasts at-place employment (the number of positions located in the County) to grow at an annual rate of approximately one percent per year from 2023 to 2025 and then fall to less than one percent until the year 2035, resulting in a projected employment increase of only, 57,100 in the year 2035. **Table 2.4** shows the M-NCPPC "Round 10" projections for at-place employment.

Table 2.4 At-Place Employment, Montgomery County, Maryland 2023-2035

Year	Estimated County Employment
2023	511,200
2024	517,000
2025	522,900
2026	527,400
2027	532,000
2028	536,500
2029	541,100
2030	545,600
2031	550,200
2032	554,700
2033	559,200
2034	563,800
2035	568,300

Source: Round 10 Cooperative Forecast, Research & Strategic Projects, Montgomery Planning, M-NCPPC. Original forecast data in five-year increments: 2025, 2030, and 2035. Intermediate years were interpolated. Years are calendar years. Numbers are rounded to the nearest hundred.

2.4 Comprehensive Land Use Plan

Land use policies directly affect solid waste generation and management in terms of the quantity and type of waste generated and the properties on which solid waste management facilities may be located.

In December 2019, the Montgomery County Council adopted the Racial Equity and Social Justice Act [3], which, among its requirements, directs the Planning Board to consider racial equity and social justice as part of master plans. Thrive Montgomery 2050 (Thrive) [4], is the latest approved and adopted version of the Comprehensive Land Use Plan. It establishes goals, priorities, and recommendations for guiding short and long-range land use planning in Montgomery County. The three overarching objectives of Thrive are to achieve Economic Competitiveness, Racial Equity and Social Justice, and Environmental Health and Resilience. Thrive also commits the Montgomery County Planning Department to implementing the actions in the Climate Action Plan[5] under its authority. All County master plans include recommendations that respond to the priorities and goals established in Thrive.

Montgomery Planning developed the Community Equity Index (CEI)[6], a tool for identifying marginalized populations and analyzing racial equity and social justice issues to support ongoing and future planning efforts. About 30% of the County's population lives in disadvantaged tracts. The severity of the tract's disadvantage increases as the color on the map moves from light orange to orange to red.

The CEI is a composite measure of equity-related indicators that helps users understand socio-economic conditions that drive advantages and disadvantages across the county. The index measures the extent to which each neighborhood in the County, represented by U.S. census tracts, is representative of the overall socio-economic composition of the County. Tracts that show up on the map as light orange, dark orange, or red are socio-economically disadvantaged compared to the county overall. They have, on average, lower incomes, lower levels of education, more difficulty speaking English, and are more likely to rent their housing.

Places that are socio-economically disadvantaged have historically tended to be subject to more locally undesirable land uses. Therefore, special consideration is taken when evaluating sitting locations for new solid waste facilities. As shown in **Figure 2.4** the majority of facilities in Montgomery County are located in a "Proportionate" (neither advantage nor disadvantage) index. The County has invested in mitigating impacts in its solid waste facilities currently open or closed (i.e., Oaks and Gude Landfill).

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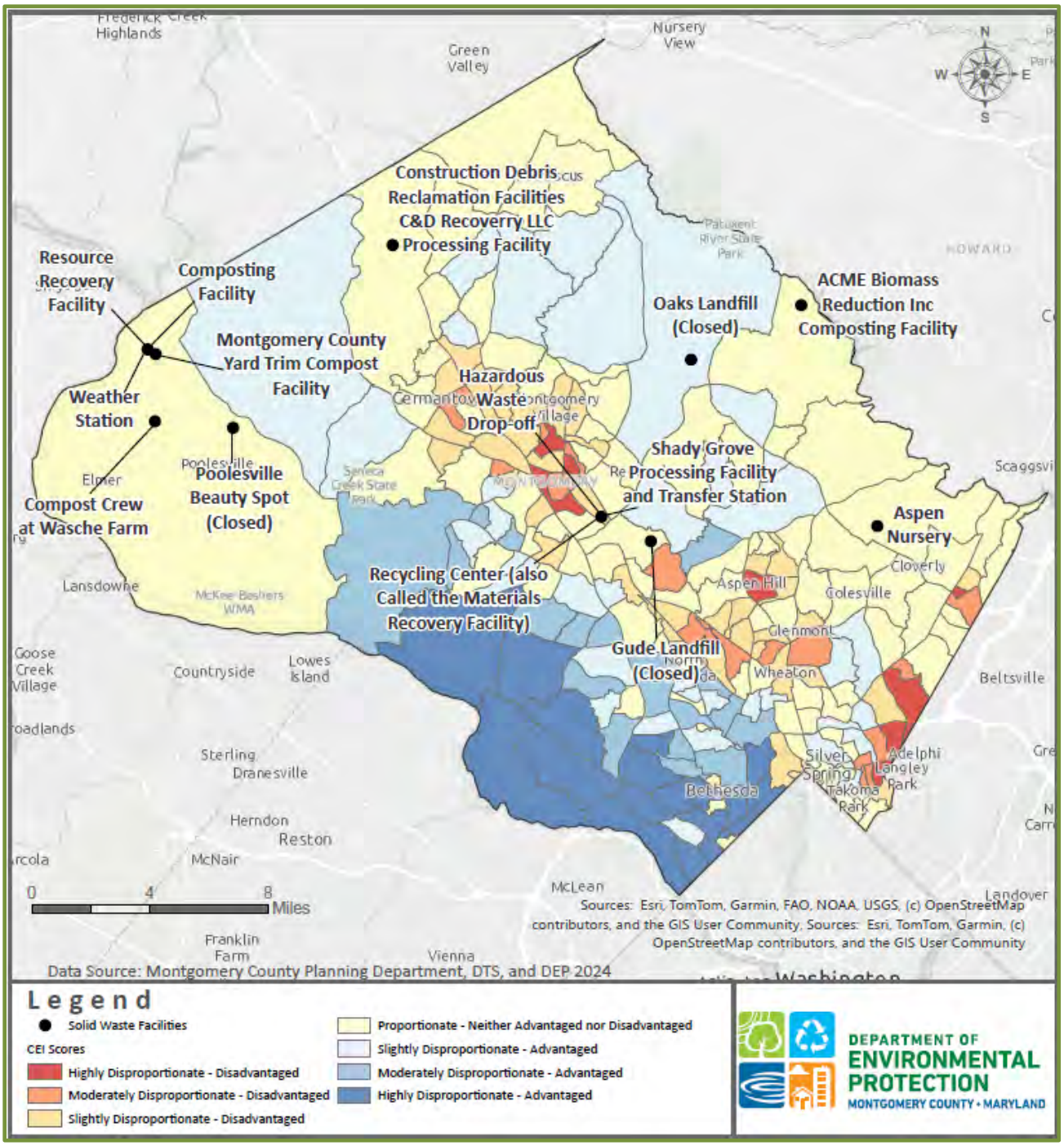
[3] Bill No. 27-19

[4] https://montgomeryplanning.org/wp-content/uploads/2023/06/THRIVE-Approved-Adopted-Final.pdf

[5] Montgomery County Climate Action Plan

[6] https://montgomeryplanning.org/planning/equity-agenda-for-planning/community-equity-index-analysis/

Figure 2.4 Solid Waste Facilities and the Community Equity Index



2.5 Zoning Requirements Related to Solid Waste Management Activities

Chapter 59[7] of the County Code defines zoning requirements and establishes zones designating agricultural, residential, commercial, industrial, or a mixture of uses at specified densities. Specific uses are allowed by conditional use approved on a case-by-case basis by the Hearing Examiner. The Hearing Examiner reviews and holds public hearings on applications for conditional uses.

The Zoning Ordinance allows a landfill, incinerator, or transfer station as a conditional use in the Industrial Heavy (IH) Zone. Recycling collection and processing are allowed as a permitted use in the IH Zone, on the other hand in the Light Industrial (IL) and Moderate Industrial (IM) zones it is allowed with the following limitations:

- Recycling of construction and demolition debris is prohibited unless the use was lawfully existing on October 29, 2014.
- The recycling of automobiles is also prohibited.

2.5.1 Agricultural Preservation

The County's diverse agricultural industry, which has 540 farms and 350 horticultural enterprises, produces more than $287 million in economic contributions from agricultural products and operations. Most Montgomery County farms are family-run operations, many dating back several generations. Together, they employ more than 10,000 residents. Of the County's 540 farms, 42% are farmed as a primary occupation.[8]

Agricultural activities occupy about one-third of Montgomery County's 316,800 acres of land. Over half of the 93,000-acre Agriculture Reserve is preserved through transferable development rights or easement purchase initiatives.

The County and the State of Maryland have programs for the preservation of agricultural land. Both the State and the County have established agricultural easements using property deeds that carry restrictions to limit non-agricultural use of the property while also providing right-to-farm protection. As of the adoption date of the new Zoning Code in 2014, the Rural Density Transfer (RDT) Zone has been renamed to the Agricultural Reserve (AR) Zone. Property owned in the AR zone may trade Transferable Development Rights (TDRs) from their agricultural zone to redirect development to certain non-agricultural sections of the County. Development in the AR zone is limited to one dwelling per 25 acres. Historically, most landfill-candidate sites have been located within AR-zoned areas.

7 Chapter 59: Zoning Code.pdf

8 Montgomery County, Office of Agriculture, Agricultural Fact Sheet May 2016

2.5.2 Transportation Considerations for Solid Waste Activities

Solid waste collection vehicles must service all areas of the County. They must safely navigate a wide range of road surfaces and conditions to minimize noise, odor, and litter disturbances to the community.

Chapter 48 of the County Code and regulations administered by DEP regulate the operation of solid waste vehicles to address potential nuisance and safety issues. County regulations require that solid waste collection and transfer vehicles must be inspected and registered. Loads of solid waste must be contained or covered during transportation to minimize litter. Collection of solid waste cannot occur before 7:00 a.m. near residential neighborhoods. State and local transportation laws and regulations impose other safety conditions and require review by M-NCPPC under the Adequate Public Facilities Ordinance. In such cases, M-NCPPC may recommend improvements to the transportation network.

The County has a policy to minimize solid waste-related traffic on County roads. In the 1980s, the County constructed the Transfer Station to reduce the number of vehicle trips going directly to the Oaks Landfill. In 1995, the County established a rail haul system to transport solid waste from the Transfer Station to the RRF to reduce substantial waste truck traffic through communities. In 2017, the County entered a long-term contract through the NMWDA with Republic Service, Inc. for the beneficial reuse of RRF ash (and this contract is now administered through the County). Transportation of the ash from the RRF is accomplished by rail. A small amount of bypass waste and non-processible waste is transported from the transfer station via truck to various disposal locations. The solid waste facilities within the County with overlay of the Community Equity Index are presented in **Figure 2.4**. Additionally, a map of solid waste facilities and major roadways in the County is presented in Chapter 3 in **Figure 3.4**.

CHAPTER 3
SOLID WASTE GENERATION, COLLECTION, AND ACCEPTANCE SYSTEMS

This chapter addresses all the solid waste categories in COMAR 26.03.03.03 §D (1). This chapter also discusses the collection methods and solid waste acceptance facilities available to manage each solid waste category. This chapter is organized into the following subsections:

3.1 Solid Waste Generation
3.2 Solid Waste Collection Service
3.3 Recycling Collection Service
3.4 In-County Solid Waste Acceptance Facilities
3.5 County's Solid Waste Processing Facilities
3.6 Waste Transportation System
3.7 Regional Non-County Solid Waste Disposal Facilities

Appendix A defines the acronyms and solid waste terms used in this chapter and throughout this document.

3.1 Solid Waste Generation

Table 3.1 displays CY2022 actual solid waste generation by waste type and solid waste generation projections for CY2025 to CY2034, including categories provided by MDE.

As specified later in this section, solid waste generation projections are calculated using M-NCPPC forecasts for County population and employment. These forecasts are included in **Table 2.1** and **Table 2.3** in Chapter 2.

Data included in this SWMP are gathered from a variety of sources. Certain solid waste data are obtained directly from scales at County facilities. For example, tons of refuse processed at the Transfer Station and tons of recyclables processed at the MRF are recorded on-site. Other data points are derived from external sources such as private solid waste collectors. They must report to the County the amount of refuse and recyclables transported to non-County facilities. Other sources include voluntary processor reports, annual reports from businesses, and annual recycling tonnages reported by businesses that are not documented through other reporting methods.

Periodic studies commissioned by the County provide other key data points, such as changes in the per capita/employee waste generation rates and the relative composition of wastes in the disposal stream.

Table 3.1 Annual Waste Generation (tons) and Projections (tons) in Montgomery County, CY 2025 – CY 2034

Wates Category	2022 (Actual)	2025	2028	2031	2034
MSW Residential	192,868	194,722	197,458	199,330	200,636
MSW Commercial	294,912	299,057	303,260	304,044	306,036
MSW Mixed	46,067	46,571	47,090	47,439	47,668
Industrial (solids, liquid, etc.)					
Land Clearing Debris (LCD)	125	128	131	134	137
Demolition Debris (C&D)	270,934	277,308	283,615	289,939	296,301
Controlled Hazardous Substances	-				
Dead Animals	-				
Bulky or Special Waste	-				
Wastewater Treatment Plant Sludges	-				
Asphalt	3,485	3,567	3,648	3,729	3,811
Latex Paint	424	481	503	537	579
Oil Based Paint	57	59	61	62	64
Special Medical Waste	3,655	3,782	3,881	3,980	4,078
Asbestos	1,165	1,192	1,220	1,247	1,274
Concrete	8,898	9,107	9,314	9,522	9,731
MRA Waste Disposed (reported by MD-permitted waste facilities)	534,271	540,830	548,311	551,351	554,919
NON-MRA Waste Disposed (reported by MD-permitted waste facilities)	288,320	295,144	301,869	308,612	315,396
Data Source: County MRA Report					
MRA Waste Disposed (exported directly out of state, bypassing MD-permitted waste facilities)	19,159	19,369	19,584	19,730	19,825
MRA Recyclables	365,321	379,591	394,744	412,088	431,107
Non-MRA Recyclables	336,646	344,566	352,402	360,260	368,166
Total Waste Generated*	**1,543,717**	**1,579,500**	**1,616,910**	**1,652,040**	**1,689,412**
Total Municipal Solid Waste Generated (see **Appendix B** for details)	**918,751**	**939,790**	**962,639**	**983,168**	**1,005,850**

Note: Based on MDE Instructions and COMAR Regulations 26.03.03.03. Solid waste generation projections are calculated using M-NCPPC County population and employment forecasts.

3.1.1 Municipal Solid Waste (Residential, Commercial, Industrial, & Institutional)

MSW consists of solid waste generated at single-family residences, multi-family properties, commercial establishments, government facilities, and institutions. MSW does not include land clearing and demolition debris, controlled hazardous substances, automobiles, biosolids, or other solid waste streams requiring specialized handling. These different solid waste types are discussed later in this chapter.

Table 3.1 displays MSW recycled and disposed of according to four categories specified in COMAR 26.03.03.03.D "residential waste," "commercial waste," "industrial waste," and "institutional waste." MDE sent this table's baseline data (CY 2022) in November 2023. According to the baseline data, the total MSW generated in the County yields approximately 918,000 tons in CY 2022 per year, a 16% reduction compared with CY 2017. Generation projections for CY 2025 to CY 2034 are adjusted for County population and employment increases only.

The residential solid waste consists of waste generated from single-family households and multi-family (e.g., apartment, condominium) residences. **Table 3.1** shows that in CY 2022, the residential sector disposed of approximately 192,000 tons of MSW. The data was derived using weight reports from the MDE, the County's Solid Waste Transfer Station, MRF, and Yard Trim Composting Facility records supplemented with information provided under County Executive Regulation 5-13 AM by solid waste collectors and haulers.

Commercial, industrial, and institutional solid wastes comprise all MSW generated from non-residential sources. Commercial solid waste generally comprises refuse and recyclables generated by businesses and non-profit organizations, including offices, bars and restaurants, retail and wholesale establishments, and hotels. Industrial solid waste comprises refuse and recyclables generated by manufacturing, transportation, and utility activities. Institutional solid waste consists of trash and recyclables generated primarily from health service, government, and education activities.

The regulation governing this SWMP 's content requires the distinction of "commercial," "industrial," and "institutional" MSW generation. The County estimates non-residential waste generation according to 87 land-use types as recorded by the State Department of Assessments and Taxation. Aggregation of those land uses into commercial, industrial, and institutional categories generated the following distribution of non-residential waste generation among the "commercial," "industrial," and "institutional" categories: Commercial – 63%, Industrial – 26%, and Institutional – 10%.

As shown in **Table 3.1**, In CY 2022, approximately 294,000 tons of non-residential waste was disposed of in the County.

3.1.2 Land Clearing and Construction and Demolition Debris (C&D)

Land clearing and demolition debris include rock fragments, soil, masonry, concrete, asphalt, brick, glass, plastics, mortar, wood, paper, and metals. When consolidated from a construction or demolition site, these materials are not considered MSW. **Appendix A** has a full definition of the materials included as C&D.

Based on County and private sector scale records, private C&D disposal activity is reported to the County according to Executive Regulation 58-92AM. If the generation is proportional to population and employment change, without regard for economic condition influences, the projected total generation of C&D for 2035 is expected to be around 296,000 tons.

3.1.3 Controlled Hazardous Substances

Controlled Hazardous Substances (CHS), as defined in COMAR 26.13.01, is a solid waste that poses a substantial present or potential hazard to human health or the environment because of its quantity, concentrations, or chemical or physical characteristics.

The MDE regulates treatment, storage, or disposal (TSD) facilities for hazardous waste and requires the certification of drivers and vehicles transporting hazardous waste. There are two facilities in the County with TSD permits to store hazardous waste for up to 90 days: The National Institutes of Health in Bethesda and the Walter Reed National Military Medical Center in Bethesda. All hazardous wastes generated in the County are shipped out of the County for treatment and disposal.

Facilities that generate more than 100 kilograms of hazardous waste per month or more than 1 kilogram of acutely hazardous waste per month or store more than 100 kilograms of hazardous waste on-site are subject to regulation under COMAR. Hazardous waste generators below these thresholds are not subject to regulation under COMAR1.

The Montgomery County ECOWISE program was established in 1996 to serve businesses and institutions located in the County that generate small quantities of hazardous wastes. Businesses served by this program are known as "small quantity generators" (SQG). ECOWISE allows small businesses to dispose of small quantities of hazardous wastes in an environmentally responsible manner at a fraction of the cost of direct contracting with a hazardous waste management firm. Under this program, hazardous waste is collected at the County's transfer station, where a contractor takes it for final processing and disposal.

Under the ECOWISE program, collection events occur during which eligible SQGs may deliver certain toxic, flammable, corrosive, or reactive waste products for recycling, treatment, or disposal.

[1] For a complete description of State controlled hazardous waste generator requirements, see COMAR 26.13.02.

Eligible SQGs may dispose of up to 100 kilograms (approximately 220 pounds) of acids, bases, pesticides, fuels, solvents, oil-based paints, photographic chemicals, oxidizers, reactive materials, and batteries. The program does not accept acute hazardous waste, radioactive materials, explosives, or medical waste. All ECOWISE collections occur weekly at the County Transfer Station. All ECOWISE participants pre-register with the County before disposing of any materials.

Montgomery County Executive Regulation 19-93 AM, "Hazardous Materials Use Permit," requires any business that uses, stores, treats, or transfers 50 pounds (5 gallons) or more of any hazardous materials, including waste, at any time to a) register annually with the Montgomery County Department of Fire and Rescue Services, Local Emergency Planning Council; and b) Obtain a Hazardous Materials Use Permit.

Facilities that use more than 2,000 pounds (220 gallons) of hazardous substances, including waste, at any time are required to supply a hazardous materials inventory listing the quantity and location of hazardous substances, a facility diagram showing the locations of hazardous materials, and storage areas; building access points; any fire protection systems (e.g., sprinkler systems); and adjacent properties; and the submission of a contingency plan for accidental releases.

Once a Hazardous Materials Use Permit has been obtained, it must be renewed annually, with appropriate information updated. The business must pay the permit's initial and renewal fees.

3.1.4 Household Hazardous Waste

Under state and federal law, Household Hazardous Waste (HHW) is not required to be handled separately as hazardous waste if certain conditions are met. However, DEP programs have been implemented to promote the source separation of these materials from MSW.

The County established a permanent HHW collection program at the Shady Grove Processing Facility and Transfer Station in 2010.

The HHW program expanded progressively from a drop-off program operated as one-day events periodically each year to the construction of the permanent drop-off facility at the Transfer Station in 2010. The drop-off facility is open during regular Transfer Station operating hours. These extensive hours encourage greater facility use and accommodate almost any schedule for residents and businesses. Since its inception, the HHW program has processed hundreds of tons of toxic, flammable, corrosive, and reactive materials. In CY 2022, an estimated 177 tons of hazardous wastes were generated in the County. The projected total generation of HHW in 2035 is 214 tons.

3.1.5 Special Medical Waste

As defined in COMAR 26.13.11, special medical waste requires separate collection and disposal from MSW. It is generated by veterinary clinics, hospitals, doctors' offices, medical testing, and research laboratories. Special medical waste includes utensils, bandages, containers, or any other material generated from human patient care; diagnosis and surgical areas; animal bedding and feces; disposable laboratory equipment and their contents; materials resulting from contact with animal care and laboratory procedures; all disposable needles and syringes; and all other disposable materials from outpatient care for human and animal patients where the presence of pathogenic organisms are diagnosed or suspected.

MDE regulates special medical waste incinerators. As of the date of this SWMP, no special medical waste incinerators are permitted to operate in Montgomery County. All special medical waste generated within the County is transported for disposal at private facilities outside the County. MDE must license Haulers of special medical waste. **Table 3.1** shows that special medical waste reported by MDE for CY2022 was 3,655 tons.

3.1.6 Animal Carcasses (Dead animals)

Under COMAR, animal carcasses are listed as solid waste. Sources include domestic and wild animals from roadways, County animal shelters, research facilities, and farms. There are no rendering facilities for animal carcasses located in the County. Most farm animal carcasses, bone, and fat from restaurants, groceries, and other food services are recycled by rendering facilities in Virginia. Animal shelter and road-kill carcasses are processed at out-of-county special medical waste incinerators or animal rendering facilities. Currently, one privately owned, MDE-permitted pet crematorium is operating in the County.

3.1.7 Vehicle Scrap Tires

The State of Maryland Scrap Tire Law[2] prohibits the disposal of tires in landfills. At the time of this SWMP, no scrap tire recycling facilities are permitted in the County. Many auto service centers and tire dealers in the County recycle their customers' tires at facilities outside the County.

County residents may recycle up to five (5) scrap tires per year at the Transfer Station tire drop-off. CY22 Transfer Station records show that 6,526 tons were received at the Transfer Station and sent to be recycled.

[2] Section 9-228, the Environment Article of the Annotated Code of Maryland

3.1.8 Wastewater Treatment Biosolids

Under COMAR, biosolids are listed as solid waste and are defined as municipal wastewater solids. Detailed information on the County's management of wastewater is available in the 2022-2031 Comprehensive Water Supply and Sewerage System Plan[3].

3.1.9 Litter

Maryland Litter Control Law

The Maryland Litter Control Law[4] makes it unlawful for any person or persons to dump, deposit, throw, or leave, or to cause or permit the dumping, depositing, placing, throwing, or leaving of litter on any public or private property in this State, or any waters in this State unless it is deposited at an adequately permitted waste disposal facility, placed in a proper receptacle or is lawfully deposited on private property in a manner consistent with public welfare.

All law enforcement agencies, officers, and officials of the State or any enforcement agency are authorized, empowered, and directed to enforce compliance with the Litter Control Law.

County Litter Control Authority

Whenever any readily movable property of any kind, such as, but not limited to, furniture, appliances, personal effects, etc., is abandoned or left in violation of any law, ordinance, or order on public or private premises, it may be removed in accordance with Chapter 32-1 of the Montgomery County Code.

3.1.10 Septage

Approximately 20,000 homes in Montgomery County are not connected to the sewer system and use other means of wastewater disposal, mainly septic systems. Only about two dozen homes in Montgomery County rely on sewage holding tanks. These septic systems and sewage holding tanks are periodically pumped out by haulers. WSSC Water issues permits to haulers that discharge to a WSSC water-managed facility. Additionally, all haulers that conduct business within the County are required to obtain a permit from WSSC Water. Currently, the main discharge facility accepting pumped septage in the County is the Muddy Branch discharge facility, managed by WSSC Water and located in the City of Gaithersburg. It is estimated that about 8,000 gallons per day or 3 million gallons annually of septage pumped out from septic systems in the County is discharged into the Muddy Branch discharge facility.

[3] Montgomery County Water Supply and Sewerage System Plan.pdf

[4] Section 10-110, the Criminal Law of the Annotated Code of Maryland (2010)

3.2 Waste Collection

RRMD, through its Independent Collection Contractors, collects recyclables from all single-family homes in the non-municipal portions of the County and solid waste from only a subset of the single-family dwellings, as explained in the next sections. As shown in **Table 3.2**, RRMD does not provide collection services for recyclables or solid waste to multi-family properties, commercial businesses, non-profit organizations, or government facilities.

The County (Collection District) is divided into two solid waste collection subdistricts: Sub-district A and Sub-district B, as shown in **Figure 3.1**.

Under the authority of Subsection 48-29 of the County Code, Method 2 regulation may expand or reduce these service subdistricts.

Solid waste collected on behalf of the County by Independent Collection Contractors must be delivered to the Transfer Station or a County-designated facility. These contractors are not required to pay a tipping fee at the Transfer Station for residential solid waste collected from single-family residences in the collection district on behalf of the County. Independent Collection Contractors are prohibited from billing County residences any disposal fee for refuse collected at those homes. All single-family homeowners pay an annual Systems Benefit Charge to the County to cover the costs associated with the disposal of their MSW.

Sub-district A

In Sub-district A, the County provides weekly trash and recycling collection services through competitively procured contracts with private service providers for single-family homes, townhomes, and residential properties with six (6) or fewer units. Trash is collected curbside once a week and includes five (5) bulky waste pick-ups annually. Bulky waste pick-ups must be scheduled by calling the County's MC311 call center or online in advance of the regularly scheduled collection day. Residents provide their own trash containers.

In 2021 DEP started a voluntary residential food scraps pilot program for single-family households across three (3) collection routes in Bethesda, Rockville, Potomac, and Silver Spring. More information can be found in Section 5.1.2 of this SWMP and Residential Food Scraps Collection Pilot

Sub-district B

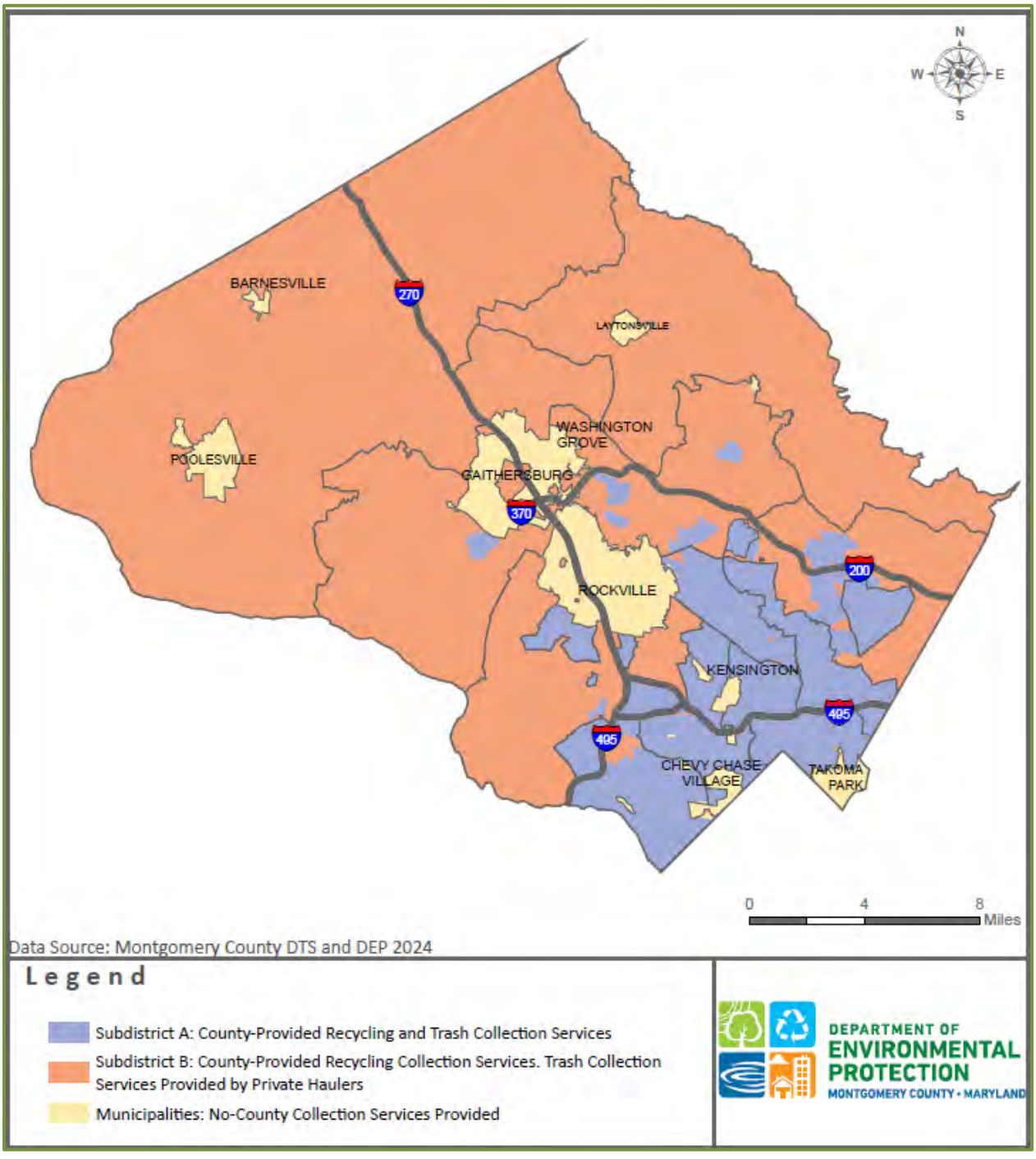
Private collectors, known as Independent Collection Contractors, provide trash collection services in Sub-district B, with authorization by the County. An Independent Collection Contractor must enter into a collection authorization with the County under terms acceptable to the County, which allows it to collect solid waste from single-family residences in

Sub-district B. Customers contract directly with the Independent Collection Contractors for their trash collection services and may pay for an additional level of services, such as twice weekly trash collection. Residents provide their own trash containers.

Table 3.2 County Collection Services Provided

County Services Provided	Single-family (6 or fewer units)	Multi-family (7 or more units)	Incorporated Municipalities	Non-Residential
Trash Collection	Sub-district A (weekly, once per week)	No County Service	No County Service	No County Service
Bulk Trash Collection	Sub-district A (5 scheduled pick-ups annually)	No County Service	No County Service	No County Service
Recycling Collection	Sub-district A & B (weekly, once per week)	No County Service	No County Service	No County Service
Yard Trim Collection	Sub-district A & B (weekly, year-round)	No County Service	No County Service	No County Service
Scrap Metal Collection	Sub-district A & B (scheduled pick up)	No County Service	No County Service	No County Service

Figure 3.1 Map of Solid Waste Collection Services



Incorporated Municipalities

The county has three (3) cities and 16 incorporated municipalities, with an estimated 70,000 households and approximately 174,000 residents. These incorporated areas[5] are responsible for collecting trash and recyclables within their jurisdictions. Some of these municipalities choose to contract with Private Commercial Collectors on behalf of their residents, or they allow residents to contract directly with Private Commercial Collectors. Municipalities that provide dual-stream curbside recycling collection services may deliver their recyclables to the County MRF.

The County also provides technical support, assistance, education, training, and enforcement within those municipalities that have adopted the County's recycling regulations for the multi-family and non-residential sectors. These include the City of Gaithersburg and the City of Rockville.

Table 3.3 provides an overview of the trash and recycling services provided by the incorporated municipalities and cities in Montgomery County. This overview is based on publicly available information and RRMD staff interviews with city and town officials conducted in March 2024. **Table 3.3** indicates whether the service is either public (i.e., provided by the municipality), private (i.e., the homeowner/business contracts directly with a private service provider for collection), or contracted (i.e. the municipality contracts with a private service provider to collect material on behalf of the homeowner/business).

Since the last version of this SWMP, residential food scraps recycling programs have increased in the County and in incorporated cities and municipalities. As of March 2024, the County has established three (3) voluntary residential food scraps recycling collection program areas. Also, private food scraps recycling collection companies are offering their services for a fee to residents outside of the pilot area who want to source separate food scraps and other acceptable organic materials for recycling.

Fourteen (14) municipalities reported some level of residential food scraps recycling programs, including food scraps recycling drop-off locations. Some examples include:

- Gaithersburg: The Department of Public Works offers two drop-off locations for City residents
- Rockville: Food scraps recycling drop-off for City of Rockville residents is only available at the Rockville Senior Center
- Takoma Park: Provides residents with curbside food scraps recycling collection services

[5] There are also two Special Taxing Districts, The Village of Drummond and Friendship Heights for more information : Municipalities, Trash and Recycling,DEP,Montgomery County Government, MD (montgomerycountymd.gov)

Table 3.3 Materials Management in Incorporated Cities and Municipalities

	Population	No. Hhlds	Trash Collection	Bulk Trash	Scrap Metal	Recycling Collection	Yard Trim / Brush	Food Scraps
Incorporated Cities								
Gaithersburg, City of	68,952	25,671	Private	Contracted	Public	Contracted	Contracted	Yes
Rockville, City of	66,924	26,543	Public	Public	Public	Public	Public	Yes
Takoma Park, City of	17,390	6,898	Public	Public	Public	Public	Public	Curbside Res. Collection - Public
Incorporated Municipalities								
Barnesville (Town)	140	62	Contracted	Not Specified	Contracted	Contracted	No	No
Brookeville (Town)	163	53	Contracted	Contracted	No	Contracted	No	No
Chevy Chase (Town)	2,855	995	Contracted	Contracted	No	Contracted	Contracted	Yes
Chevy Chase (Village)	2,019	682	Contracted	Public	No	Contracted	Public	Yes
Chevy Chase, Section 3	788	314	Contracted	Contracted	Contracted	Contracted	Contracted	Yes
Chevy Chase, Section 5 (Village)	663	225	Contracted	Contracted	Contracted	Contracted	Contracted	Yes
Chevy Chase View (Town)	991	333	Contracted	Contracted	Contracted	Contracted	Contracted	Yes
Chevy Chase (Village of North)	676	226	Contracted	Contracted	Contracted	Contracted	Contracted	Yes (starting July 1, 2024)
Garrett Park (Town)	978	324	Contracted	Contracted	Contracted	Contracted	Contracted	Yes
Glen Echo (Town)	275	103	Contracted	Contracted	No	Contracted	Contracted	No
Kensington (Town)	2,099	813	Contracted	Contracted	No	Contracted	Contracted	Yes (starting July 1, 2025)
Laytonsville (Town)	569	242	Contracted	Contracted	Not Specified	Contracted	Contracted	No
Martin's Additions (Village)	928	328	Contracted	Contracted	Contracted	Contracted	Contracted-Seasonal	Yes
Poolesville (Town)	5,688	1,880	Contracted	Contracted	Contracted	Contracted	Contracted	In process
Somerset (Town)	1,171	368	Contracted	Not Specified	No	Contracted	Contracted	Yes
Washington Grove (Town)	497	285	Contracted	Contracted-2x/yr		Contracted	Contracted-Seasonal	No

Source:

Population: U.S. Census Bureau, Population Division, Population Estimate Program (Release date: May 2023). They were compiled by Research & Strategic Projects, Montgomery Planning, MNCPPC (1/22/2024).

Households: 2022 5-year American Community Survey, U.S. Census Bureau. They were compiled by Research & Strategic Projects, Montgomery Planning, M-NCPPC (2/9/2024).

Staff interviews with city and municipal officials, March 2024

Note:

Public (i.e., provided by the municipality)
Private (i.e., the homeowner/business contracts directly with a private service provider for collection)
Contracted (i.e., the municipality/city contracts with a private service provider to collect material).

Multi-family and Non-Residential

Residential properties with seven (7) or more dwelling units are defined as multi-family properties. Commercial, industrial, and institutional properties, including non-profit organizations and federal, state, and local government facilities, are categorized as non-residential or commercial properties. Trash collection and disposal for both multi-family and non-residential properties are the responsibility of the property owners, who often contract with a licensed private collection company or self-haul waste to a solid waste acceptance facility.

Bulk Trash

The same private sector collectors under contract with the County collect household refuse and bulky waste generated by single-family residences in Sub-district A. Before their regular collection day, residents must call MC311 or schedule the bulk trash pick-up online. Residents are allowed up to five (5) bulk trash collections per year at no additional charge. There is no limit on the number of items collected as part of each pick-up, but there is a "rule of thumb" that bulk trash consists of five (5) or more bags or cans of trash, large non-metal items such as furniture, carpets, or mattresses. C&D waste, propane tanks, and hazardous materials are not considered bulk trash and may be taken to the Shady Grove Transfer Station. There is no charge for disposing of loads less than 500 pounds for County residents showing proof of residency.

Residents of Sub-district B or incorporated municipalities must make their own arrangements for collecting bulk trash or taking it to the Shady Grove Processing Facility and Transfer Station or the Poolesville Beauty Spot.

Montgomery County promotes the diversion of construction and building materials from the waste stream for residential and commercial partners. The County's "Don't Dump. Donate!" program provides an opportunity for residents and businesses to drop off reusable building materials for reuse. The County provides information to contractors about the benefits of donating usable construction and building materials, through information provided and shared by the Department of Permitting Services and during on-site visits. The County provides links to "A Builders Recycling Guide," a resource database of reuse and recycling

opportunities for construction and demolition materials compiled by the Metropolitan Washington Council of Governments. The County will continue to work with the Department of Permitting Services and other agencies to identify opportunities to facilitate the reuse and recycling of building materials.

3.3 Recycling Collection

Executive Regulation 1-15 established the entire County as a recycling service area and banned certain recyclable materials from being set out for collection mixed in with refuse. All single-family residences in the County, except for those in certain incorporated municipalities, receive County-provided weekly curbside collection of mixed paper and cardboard, glass bottles and jars, aluminum cans and foil products, bi-metal cans, and plastic bottles, jars, containers, tubs, lids/caps, pails, buckets, flowerpots, grass clippings, brush, leaves, Christmas trees, and large household appliances ("white goods") and large scrap metal items. Chapter 48 of the County Code defines single-family residences in the County Collection district as all single-family detached homes, townhouses, and residential buildings comprised of six (6) or fewer dwelling units.

The County works with homeowner associations, management groups, and other citizen groups to customize recycling collection services whenever feasible to meet the special needs of user groups, including townhouse residents, senior citizens, and residents with disabilities. This includes special recycling bins and alternate collection points where needed and feasible.

Residential – Single-family

The County provides weekly curbside dual-stream collection of recyclables for all single-family homes in Sub-districts A and B through competitively procured contracts with private service providers. Residents who receive curbside recycling collection from the County also receive scrap metal and yard trim recycling collection. The County provides 18-gallon blue bins for commingled containers (aluminum cans and foil products, glass bottles and jars, bi-metal cans, and plastic bottles, jars, containers, and more). Residents are provided with either a 35-gallon or 65-gallon wheeled cart for recycling mixed paper and cardboard. Residents may also place cardboard and mixed paper in paper bags, in small cardboard boxes, or bundled with twine and placed next to their blue bin. Yard trim must be placed in paper lawn bags or reusable containers with a yard trim decal provided by the County. Branches can be bundled with twine, and each bundle must be 30 inches or less in diameter and weigh 45 pounds or less. Residents in 5 of the 13 recycling collection areas can also call MC311 to schedule curbside collection of electronics and batteries on their regular recycling collection day. Additional areas will be provided this service when current recycling contracts are up for renewal.

Table 3.4 below lists the number of households served and the total annual tons of trash, recycling, scrap metal, and yard trim collected for the thirteen (13) service areas (see **Figure 3.2**) comprising the two (2) Sub-districts.

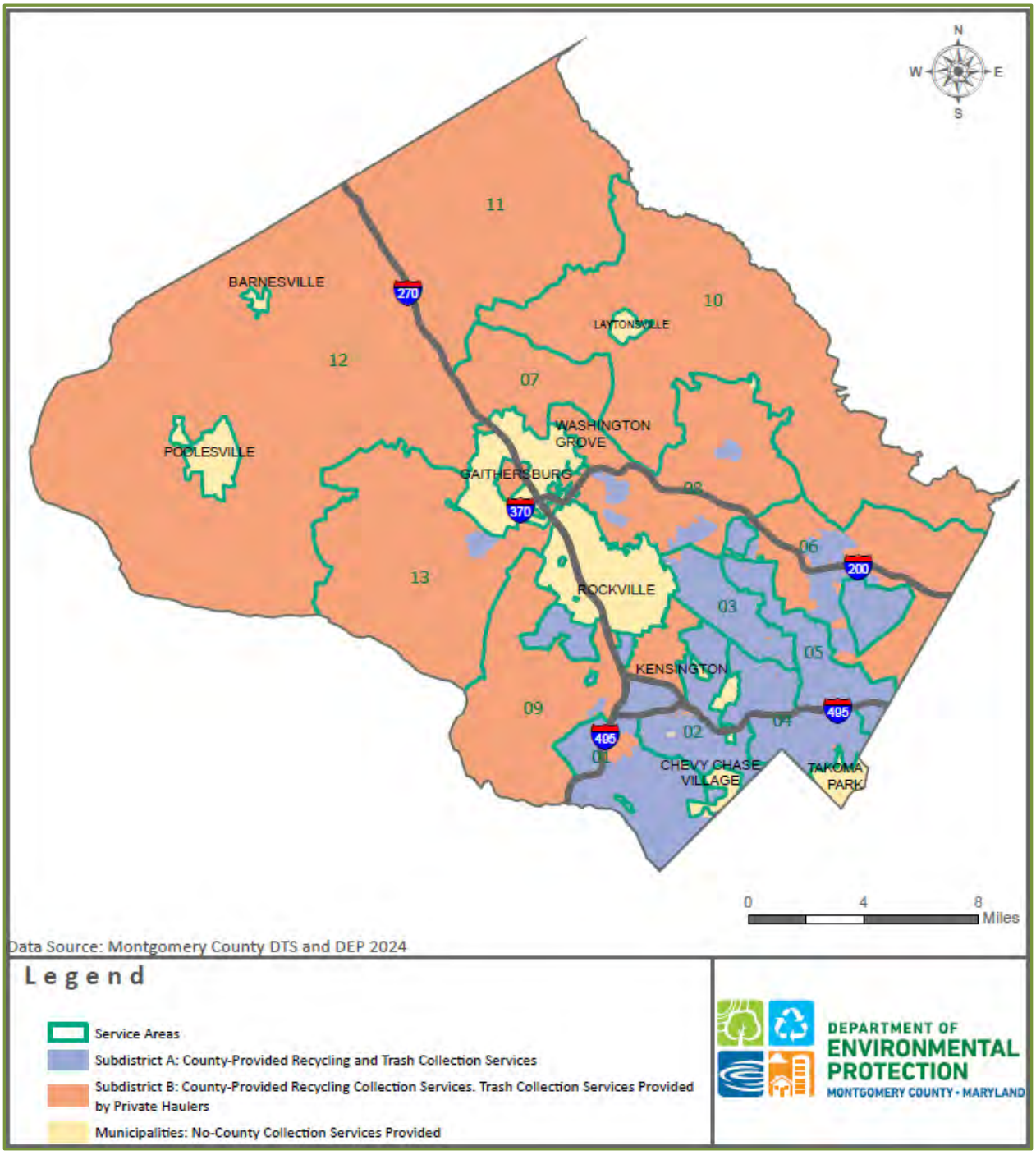
Table 3.4 Number of Households Served and Tons Curbside-Collected by District (CY22)

	Number of Households		Annual Tons (CY2022)				
Service Areas	**Trash Collection Service (Sub B)**	**Recycling & Yard Trim Collection Service**	**Trash Collection Service (Sub A)**	Recycling[(1)]	**Scrap Metal[(2)]**	**Yard Trim**	**Total**
Area 1	20,838	21,427	15,025	7,689	366	2,913	26,046
Area 2	15,455	15,803	10,842	5,289	230	2,947	19,818
Area 3	14,066	14,464	15,466	4,590	56	2,750	23,000
Area 4	18,926	19,727	13,148	6,014	152	3,842	24,328
Area 5	15,951	16,145	12,636	4,662	75	3,124	21,521
Area 6	3,736	22,926	4,288	6,942	73	2,649	13,215
Area 7		17,137	-	4,245	21	1,121	5,387
Area 8	2,586	22,464	592	6,216	85	3,242	10,820
Area 9		16,163	101	5,039	36	1,675	6,750
Area 10		7,612	18	2,594	26	810	3,429
Area 11		16,102	-	4,732	48	1,356	6,148
Area 12		19,400	-	5,126	28	1,102	6,255
Area 13	941	12,196	222	3,239	29	1,570	5,383
TOTAL	**92,499**	**221,566**	**75,400**	**66,376**	**1,223**	**29,102**	**172,100**

1. Recycling includes commingled material collected (aluminum products, bi-metal steel/tin cans, glass bottles and jars, and plastic bottles, jars, and containers) in the County provided 18-gallon blue bins and mixed paper products collected in a 35-gallon or 65-gallon wheeled cart (or set out in paper bags, cardboard boxes, or bundled with twine).
2. Scrap metal includes materials collected at the curb. This service can be scheduled online or by calling MC311.

Source: Information provided by Montgomery County (Tonnage information from scale reports for tons managed in 2022 at Shady Grove Transfer Station and Processing Facility)

Figure 3.2 Map of Service Areas Subdistrict A and B



Non-Residential

Recycling collection for non-residential properties may be accomplished via self-haul or may be contracted directly between the owners and privately contracted County-licensed recycling collectors. The same materials are mandated for recycling as in the single-family residential recycling program and are banned from being disposed of as trash. Collectors must formally notify any generators that place unacceptable materials in recycling containers, either electronically or in writing. Collectors deliver recyclable material to private recycling facilities within and outside the County. The County offers and provides educational materials, outreach, training, technical assistance, and various sizes of recycling containers to businesses at no additional charge to facilitate the separation, collection, and recycling of recyclable materials from employees and customers.

Apartment Building and Condominium Recycling Programs

Multi-Family Residential Recycling – The State "Recycling- Apartment Buildings and Condominiums (2012) Act" requires County Recycling Plans to address the collection and recycling of recyclable materials from residents of apartment buildings and condominiums that contain ten (10) or more dwelling units by property owners or managers of apartment buildings. The County's multi-family recycling program is outlined in Section 3(b) of Executive Regulation 1-15, "Residential and Commercial Recycling." It is fully compliant with Sections 9-1703(b), (12), and (13) of the Environmental Article, Annotated Code of Maryland.

Generally, Montgomery County's multi-family recycling program mirrors its single-family recycling program, except that multi-family properties must contract recycling collection services with a private collector to provide a separate collection of recyclable materials or may self-haul recyclable materials to recycling facilities. The same materials are mandated for recycling as in the single-family residential recycling program and are banned from disposal as trash. Section 3(b)(3)(c)(8) of Executive Regulation 1-15 requires, among other things, that "Collectors must collect and deliver to a recycling facility materials that have been source-separated from the solid waste stream unless the recyclable materials are not acceptable. If a collector determines that the recyclable materials are unacceptable, then the collector must inform the generator or responsible agent in writing using a form provided by the Department. The collector must indicate the name of the property, name of the responsible agent, and specify a collector name and phone number for additional information".

The County enforces multi-family recycling regulations through mandatory reporting requirements and a combination of site investigations, on-site verification of any applicable exemptions, field verification of Annual Waste Reduction and Recycling Reports, issuance of Verbal Warnings, Notices of Violations, and Citations with fines levied.

Public Schools Recycling Programs

House Bill 1290, "Environmental-Recycling-Public-School Plans" of the 2009 Maryland General Assembly, added a new subsection (b)(10) to §9-1703 of the Environment Article, Annotated Code of Maryland setting recycling requirements for public schools. The County's strategy for collecting, processing, marketing, and disposing of recyclable materials from public schools is described in "Montgomery County Public Schools Recycling Action Plan, June 2014[6]" and "Montgomery County Recycling Plan for Publicly Funded Colleges and Special Schools." These two documents were prepared by the Montgomery County Public Schools (MCPS) and DEP, respectively, to satisfy subsection (b)(10) of §9-1703 and are incorporated herein by reference for that purpose.

Recycling at Special Events

Consistent with Section 9-1712 of Environment Article, Annotated Code of Maryland, Montgomery County already works with the agencies that issue event permit approvals for special events expecting 200 or more persons in attendance using public streets, public facilities, or public parks. The event organizer must do the following:

- Provide a recycling receptacle immediately adjacent to each trash receptacle at the special event;
- Ensure that all recycling receptacles are clearly distinguished from trash receptacles by color or signage; and
- Ensure that all recyclable materials (as mandated by Montgomery County regulation) deposited into recycling receptacles at the special event are collected for recycling.

To the extent feasible, Montgomery County also recommends that event organizers consider collecting food scraps for recycling and reporting to the County on recycling activities.

Office Buildings Recycling Program

State Bill 370, *Environment – Recycling – Office Buildings*, requires the County to address the collection and recycling of recyclable materials from buildings with more than 150,000 square feet of office space. The Bill requires, by October 1, 2021, each owner of an office building with more than 150,000 square feet of office space to provide recycling receptacles for the collection of recyclable materials. Montgomery County Executive Regulation 1-15 requires property owners of commercial properties to make recycling collection service and storage space for recyclable solid waste available to tenants. The County's strategy to comply with this

[6] Montgomery County Public Schools Action Plan 2014.pdf

Bill in accordance with Section 9-1703(b) of the Environment Article, Annotated Code of Maryland was included in Appendix F of the 2020-2029 adopted Plan.[7]

Collection and Recycling of Fluorescent and Compact Fluorescent Lights that contain mercury

For compact fluorescent lamps (CFLs), the County will continue to expand the number and locations of retailers who accept CFLs for recycling and will continue to publicize this information through the DEP website and other educational opportunities. Currently, the County accepts CFLs and fluorescent tubes from residents for no additional fee through its HHW program for residents and Universal Wastes for a small fee from certain businesses. Clean Harbors Environmental Services, Inc. is the contractor that provides these services seven days a week at the Shady Grove Processing Facility and Transfer Station. The hours are 7:00 a.m. to 5:00 p.m. Monday to Saturday and 9:00 a.m. to 5:00 p.m. on Sunday. These extensive hours encourage greater use of the facility and accommodate almost any schedule for residents. Certain businesses considered Small Quantity Generators can only participate through EcoWise and must register for compact fluorescent lamps and pay the disposal fee. Clean Harbors processes and separates the glass, metal, and mercury from the bulbs and ships the materials to recycling markets.

Scrap Metal Recycling Program

Residents who receive recycling collection from the County also receive County-contracted curbside scrap metal recycling collection. During the weekly recycling collection route, county-contracted collectors collect large scrap metal items generated by single-family residences in Sub-districts A and B. Customers must call MC311 or go online to schedule a scrap metal recycling collection. There is no limit on the number of scrap metal recycling requests scheduled per year. The item(s) must be made of more than 50% metal. Scrap metal includes large household appliances, bicycles, lawnmowers, etc.

Yard Trim Recycling Program

All single-family residences in Sub-districts A and B are provided with yard trim (grass clippings, leaves, brush, and garden trimmings) recycling collection once per week year-round, with a maximum of 45 pounds for each container or bundle set-out. Materials must not be set out in plastic bags. Residents can place yard trimmings in reusable containers with a yard trim decal or paper yard trim bags. Limbs that are not in labeled containers must be bundled with twine. Christmas trees are also collected for recycling year-round.

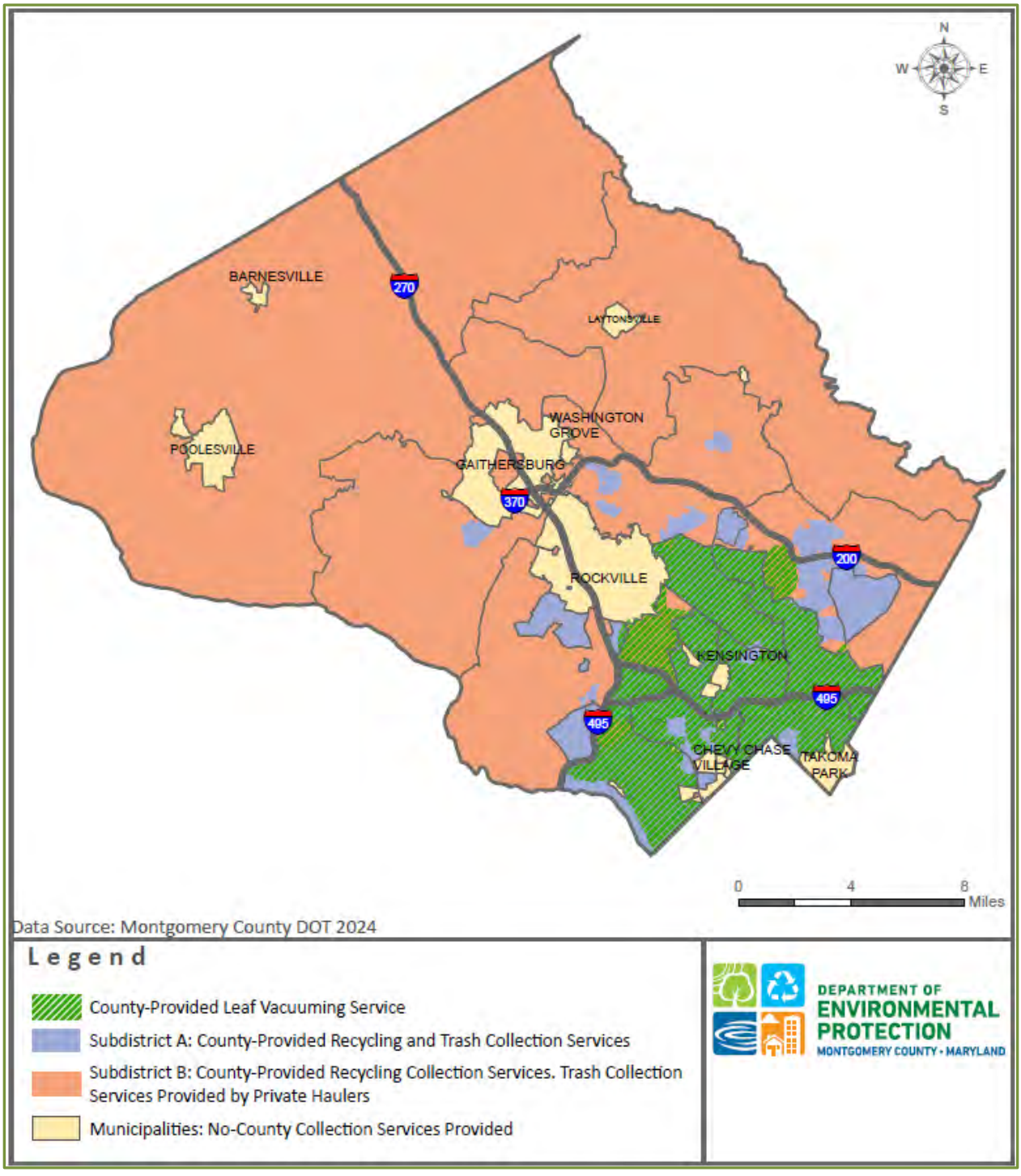
[7] Comprehensive Solid Waste Management Plan for the Years 2020 through 2029 Adopted by County Council of Montgomery County, Maryland Resolution Number 19-1008 dated October 12, 2021. Approved by Maryland Department of the Environment Approval Date: February 3, 2022.

The County also promotes grasscycling and on-site or backyard composting at home to further reduce the amount of yard trim materials set out for collection. The County distributes compost bins for at-home composting of yard trim materials at no additional charge to County residents.

Montgomery County Department of Transportation (MCDOT) provides seasonal (generally November through January) leaf collection within the Leaf Collection District, shown in **Figure 3.3**. Leaves are vacuumed from public rights-of-way and transported to the Montgomery County Yard Trim Composting Facility for composting. The County has adopted a procedure[8] that requires the support of at least 80% of the households in the neighborhood/area before opting in or out of the Leaf Collection District.

[8] https://www.montgomerycountymd.gov/SWS/Resources/Files/store/ER/ER6-99AM.pdf

Figure 3.3 Map of Leaf Collection District



3.4 In-County Solid Waste Acceptance Facilities

As **Table 3.5** and **Figure 3.4** show, Montgomery County has several waste management facilities. In Maryland, landfills, transfer stations, processing facilities, resource recovery facilities, and special medical waste incinerators require a refuse disposal permit or air permit from MDE. Scrap tire collection and recycling facilities require licenses from MDE for their operations, and natural wood waste and composting facilities require permits from MDE outlined in COMAR 26.04.11. Detailed information is available at MDE Composting.

Composting Facilities

As of June 1, 2024, MDE has permitted four (4) composting facilities[9] in Montgomery County, including the Montgomery County Yard Trim Composting Facility. All but the Compost Crew at Wasche Farm Composting Facility are in operation.

- ACME Biomass Reduction Inc.'s Composting Facility accepts yard trim and natural wood waste. Feedstock is composted by placing the materials in windrows and periodic aeration with loaders. From receipt of feedstock to curing, the life cycle of compost is estimated to be approximately five (5) months. In CY 2022, this facility accepted 3,610 tons of Natural Wood Waste and 38,761 tons of organics.

- Aspen Nursery is a Tier 1 facility located on 8.6 acres that provides recycling of leaves and brush. It has a capacity to process and compost approximately 5,000 cubic yards per year on-site. The material is composted using windrows over a 5-6 month period to produce a commercial name of AN Compost. In CY 2022, this facility accepted 359 tons of Natural Wood Waste and 542 tons of organics.

Construction and Demolition Facilities

There is one (1) C&D processing facility in the County, C&D Recovery LLC. It is a state-of-the-art material recovery facility for materials from construction and demolition debris. Materials accepted are wood drywall, metals, plastics, glass, cardboard, brick, wiring, shingles, soils and concrete, and paving. Also, incidental tires and white goods are accepted. According to Maryland Solid Waste Management and Diversion Report.pdf in CY2022, this facility accepted 93,356 tons of waste, of which 14,029 tons were generated in Montgomery County.

[9] MDE Composting Facilities June 2024

Table 3.5 Solid Waste Acceptance and Major Composting Facilities Located in Montgomery County

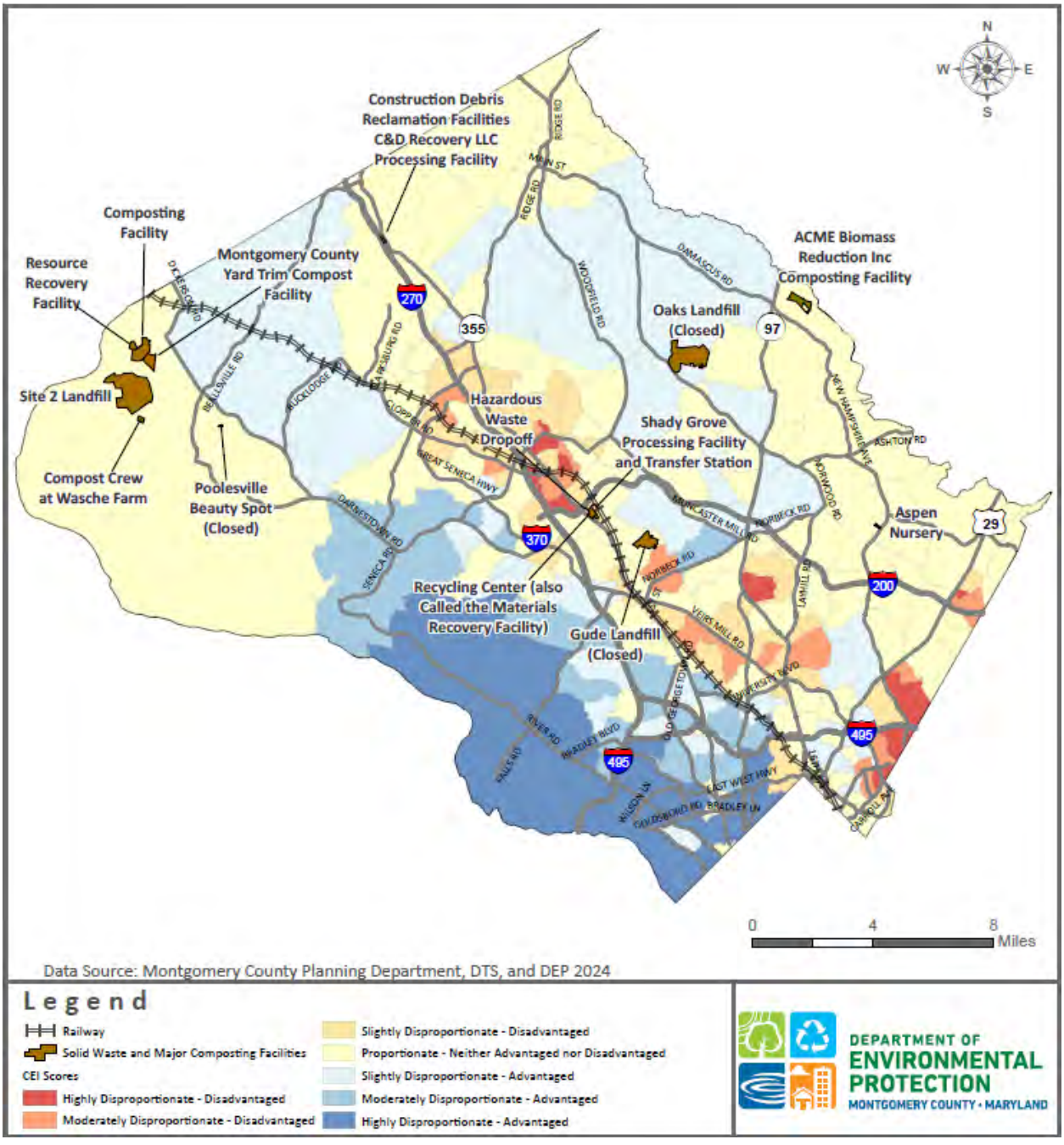
Facility Type/Name	Location (Maryland Grid Coordinates)	Acreage	Owner	Permit Type	Operating Status	Remaining Life[10]	Types of Waste	Annual Tons 2022[11]
Construction Debris Reclamation Facilities C&D Recovery LLC Processing Facility	24120 Frederick Rd Clarksburg (1226619, 578608)	10.81	Environmental Alternatives Reclamation, Inc.	Refuse Disposal Processing Facility	Active	Indefinite	Construction and demolition debris	16,468
Transfer Station, Public Shady Grove Processing Facility and Transfer Station	16101 Frederick Rd Derwood (1263505, 529641)	43.12	Montgomery County	Refuse Disposal and Transfer Station Facility	Active	Indefinite	Solid Waste Non-processible Yard trim Brush to mulch	497,120 146,169[12] 59,342 26,993
Resource Recovery Facilities Montgomery County Resource Recovery Facility	21204 Martinsburg Rd Dickerson (1183469, 559168)	35	Montgomery County (land); Northeast Md. Waste Disposal Authority (RRF)	Refuse Disposal Permit	Active	Indefinite[13]	Solid Waste loaded on the rail (includes some processible and C&D)	561,861
Site 2 Landfill Site (not constructed; held in reserve)	Near Martinsburg Rd & Wasche Rd Dickerson (1183472, 553143)	820	Montgomery County	Refuse Disposal Permit	Land reserved for possible future need	- -	- -	- -

[10] The information presented in **Table 3.5** is based on Maryland Department of the Environment (MDE) records, including the remaining life of each facility
[11] Annual tons received by County Facilities are based on the materials flow diagram used for the MRA report
[12] Non-burnable materials
[13] If there are future changes to the operational status of the Resource Recovery Facility, Montgomery County and the Northeast Maryland Waste Disposal Authority will provide notification to MDE based on the requirements of the Solid Waste Management Plan and of current operating permits for the facility. For instance, the County (pending County Council approval) is executing a short-term extension of the current Service Agreement with Reworld Montgomery under emergency procedures for up to five (5) additional years with the County retaining the right to early termination.

Facility Type/Name	Location (Maryland Grid Coordinates)	Acreage	Owner	Permit Type	Operating Status	Remaining Life[10]	Types of Waste	Annual Tons 2022[11]
Composting Facilities Montgomery County Yard Trim Compost Facility	21210 Martinsburg Rd Dickerson (1185038, 558347)	49	Montgomery County	Composting	Active	Indefinite	Leaves and grass	59,342[14]
ACME Biomass Reduction, Inc. Composting Facility	21601 New Hampshire Av Brookville (1301470E and 565201N)	107.5	ACME Biomass Reduction Inc	Composting Permit	Active	Indefinite	Yard Trimmings	19,000 tpy (design capacity)
Compost Crew at Wasche Farm	Wasche Farm 18930 Wasche Road in Dickerson, 20842. (1184573E, 546346N)	<10	Compost Crew Inc., A Benefit Corporation	General Composting Facility Permit (GP-CF01), Tier 2 - Small	Planned	Indefinite	Yard Trimmings, Food Scraps, Manure etc.	20,000 tpy (design capacity)
Aspen Nursery	15710 New Hampshire Avenue, Silver Spring (1314066E, 527293N)	8.5	Aspen Landscape Contractors, Inc.	Active Composting Permit	Active	Not Known	Yard Trimmings	1,250 tpy (design capacity)

[14]2,021 tons of the 59,342 tons sent to Montgomery County Yard Trim Compost Facility were sent to the RRF.

Figure 3.4 Map of Solid Waste and Composting Facilities in Relation to Roadways and Community Equity Index in Montgomery County



3.5 County's Solid Waste Acceptance Facilities

Montgomery County owns several solid waste management facilities, as shown in **Figure 3.4**. These include the Materials Recovery Facility (MRF), the Shady Grove Processing Facility and Transfer Station (Transfer Station), the Resource Recovery Facility (RRF), the Montgomery County Yard Trim Composting Facility (MCYTCF), land reserved for a potential processing/disposal facility (Site 2 Landfill), and the Poolesville Beauty Spot.

As a matter of policy, County-operated solid waste facilities are used only for the County's solid waste. Thus, no MSW is imported from other jurisdictions to county-operated solid waste facilities. Also, no major private solid waste facilities exist in Montgomery County that would attract waste generated outside the County's boundaries.

3.5.1 Shady Grove Processing Facility and Transfer Station

The Shady Grove Processing Facility and Transfer Station is located at 16101 Frederick Road on a 45-acre parcel of land in Derwood, Maryland. As seen in **Figure 3.5**, it is located adjacent to the MRF, also known as the Recycling Center, and receives trash and recyclables from permitted solid waste haulers, collectors, and residents at the public drop-off area. The Transfer Station has been in operation since the spring of 1982. In 1995, a transportation system was set up to facilitate the rail haul of processible (i.e., combustible) waste from the Transfer Station to the RRF. In 2008, the tipping floor area and building were expanded. Improvements were made to the site's roads, additional scales were installed, and an enclosed small vehicle drop-off center (Annex) was added adjoining the surge pit.

Four (4) compactors at the Transfer Station can compress up to 26 to 27-ton loads of solid waste, which are mechanically discharged into 40-foot intermodal containers. Containers of compacted waste are driven to the rail yard located on the Transfer Station campus for shipment to the RRF. Processible waste can be bypassed directly to other permitted disposal sites if necessary.

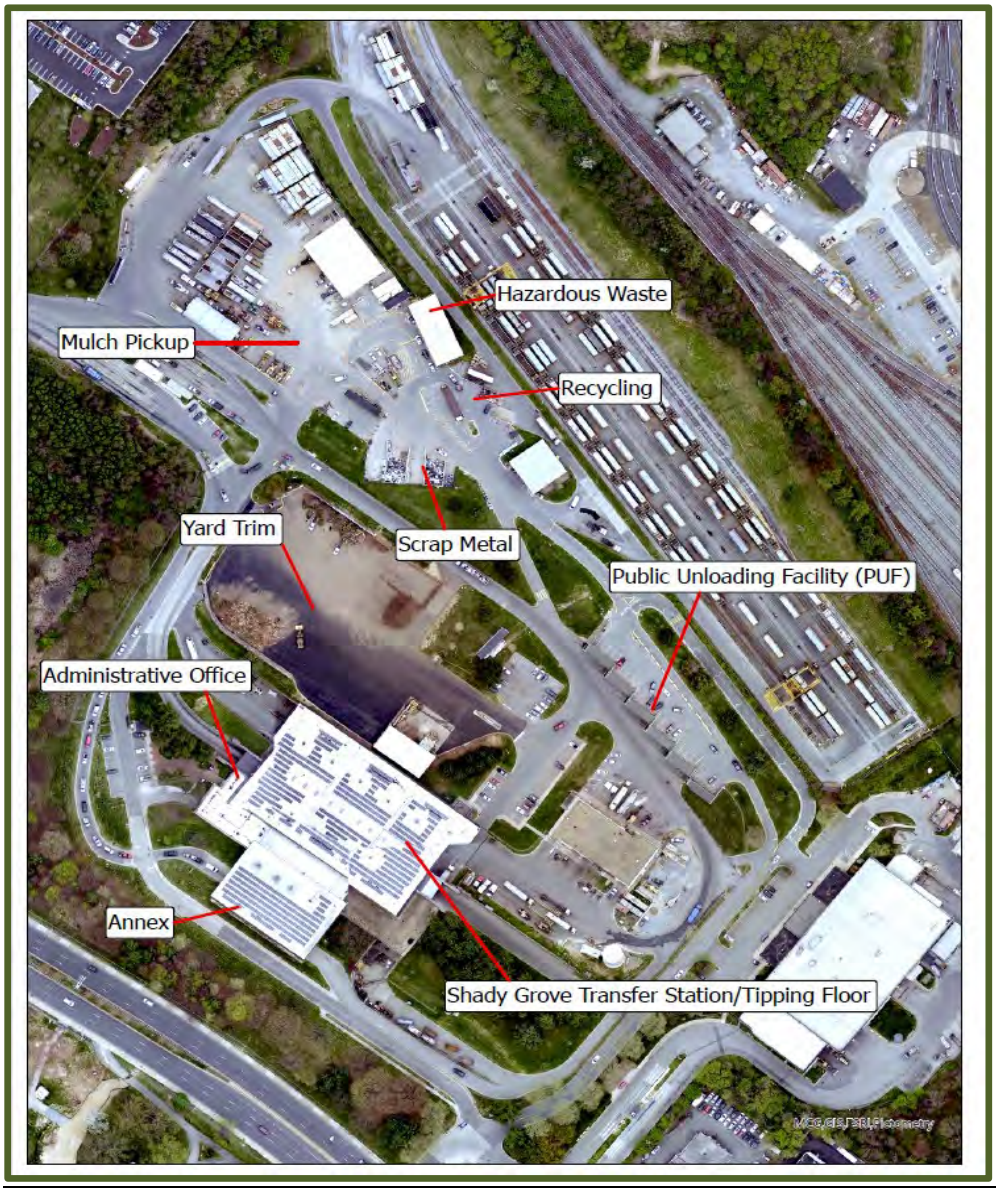
The Shady Grove Processing Facility and Transfer Station has a waste operating permit limit of 821,500 tons per year. On an annual basis, this facility processes about 550,000 to 625,000 tons of processible (combustible) waste, 40,000 to 60,000 tons of non-processible waste, about 60,000 tons of yard trim, 26,000 tons of mulch, and about 10,000 tons of scrap metal, electronics, and other recyclables.

The facility averages approximately 2,100 tons per day of MSW delivered via commercial and residential vehicles. Sixty-five (65%) percent of vehicular traffic is made up of smaller (less than 3-ton payload) vehicles.

The Transfer Station utilizes two (2) entrances: the Shady Grove truck entrance for commercial customers and the Route 355 (Frederick Road) entrance to access the residential

Public Unloading Facility (PUF) entrance. The Shady Grove truck entrance receives over 1,000 collection trucks, pick-up trucks, cube vans, etc. (e.g., vehicles carrying more than 500 pounds) per day. The PUF entrance receives about 1,000 to 2,000 smaller vehicles (e.g., cars and mini-vans carrying less than 500 pounds) per day.

Figure 3.5 Site Plan of Shady Grove Transfer Station and Processing Facility



Source: Aerial imagery, by Pictometry 2023

Twelve (12) radioactive waste detectors are located at several entrances to safeguard against unacceptable waste. These locations include the entrance to the main and annex tipping

floors, the entrance at the PUF area, the three (3) inbound truck scales, the entrance to the annex tipping floor, the contractor's dedicated scale, and the upper lot residential recycling areas.

All refuse delivered to the Transfer Station in loads over 500 pounds is weighed and recorded, and all refuse leaving the Transfer Station is weighed and recorded. Inspectors conduct routine checks of incoming loads for unacceptable materials. Non-processible waste received at the Transfer Station is transported to landfills in the region, with material currently going to the Mountain View Reclamation Landfill near Greencastle, Pennsylvania.

Drop-off Areas at the Transfer Station

The Transfer Station accepts a wide variety of materials that the residential and non-residential sectors can drop off. The Transfer Station has locations for the drop-off of various materials to be properly disposed of, recycled, and reused, as outlined below and shown in **Figure 3.5**. Items that may be dropped off at the Transfer Station include HHW, electronics, building materials, textiles, bulky rigid plastics, scrap metal, bikes, and tires.

- The household hazardous waste drop-off location is available to residents for proper disposal of home-generated HHW. Small businesses certified as SQGs may also use the drop-off location through the ECOWISE program. Once per month, the ECOWISE Program allows Montgomery County businesses (SQGs) to drop- off up to 220 pounds of hazardous waste on a cost-per-pound basis.

- Public Unloading Facility (PUF): This area of the Transfer Station is reserved for unloading trash and recyclable materials delivered in passenger vehicles. All materials accepted in the curbside collection program are accepted at the PUF. Residents can drop off a maximum of 500 pounds of trash at no charge. Above that threshold, the cost is $70 per ton of trash. There is no charge for dropping off recyclables, nor limitation on the amount of most recyclables delivered.

- The Transfer Station provides a drop-off location for recycling materials such as electronics, textiles, bulky rigid plastics, scrap metal, durable medical equipment, mattresses, and tires. Reusable textiles and those not in a condition to be reused are accepted. Recently, the County has implemented a drop-off program for plastic bags, films, and wraps at the Montgomery County Shady Grove Road Processing Facility and Transfer Station, serving as another outlet for residents to conveniently drop off these items for recycling.

- Through the "Don't Dump. Donate!" program, materials such as appliances, bricks, cabinetry, doors, flooring, roofing, tools, etc., that are in good, reusable condition can be brought to the Recycling Area as a donation. The County has partnered with several non-profit organizations to reuse these materials. Materials that are not considered to be reusable are disposed of as trash.

- The Transfer Station also includes areas to drop-off yard trim (grass, leaves, and brush) for recycling. Residents who receive recycling collection services through the County are provided a curbside collection of yard trim year-round; however, yard trim can also be dropped off at the facility by residents and landscapers. Most of the yard trim (grass and leaves) is hauled to the County's Yard Trim Composting Facility. The brush is ground into mulch and provided at the County's Mulch Preserve location. Mulch is available to residents at no charge and is sold to commercial mulch vendors.

3.5.2 Materials Recovery Facility (MRF)

The MRF, also known as the Recycling Center, is in Derwood, Maryland, adjacent to the Shady Grove Processing Facility and Transfer Station. The MRF is owned by the County and operated by MES. MES is also responsible for materials marketing. The Recycling Center processes the two streams of recyclables, commingled materials, and mixed paper from single-family residences as well as limited commercial sources. Mixed paper includes writing paper, newspaper, magazines, shredded paper, unwanted mail, boxboard, and corrugated cardboard; commingled materials include glass bottles, jars and jugs, plastic bottles, tubs, lids and containers, aluminum cans, foil products, as well as steel and bi-metal cans[15]. The MRF receives and sorts materials five (5) days a week. In May 2021, the County Council approved a capital project to upgrade and increase its capacity.

The Commingled Containers Processing area: Mechanical and hand separation are used to sort and bale each commingled container; glass bottles and jars are not baled. Instead, sorted glass is put in bunkers. These materials are then sold to various commodity brokers and end markets to be remanufactured into new materials.

The MRF commenced operations in August 1991. The facility was designed to process 80 tons per day or 10 tons per hour of commingled materials but is currently receiving 130-150 tons per day (or 16- 19 tons per hour) of commingled recyclables per day, resulting in the need to by-pass a large percentage of incoming material. The excess commingled materials are bypassed via a transfer trailer to single-stream MRFs in Prince George's County and York County, PA. There are 52 workers at the MRF each day, working one shift per day, five (5) days a week, depending on the volume of materials received.

The Mixed Paper Processing Facility (PPF) was built at a capital cost of approximately $3.3 million and began operation in May 2017. The PPF is designed to process up to 25 tons of mixed paper and cardboard (OCC) per hour. The PPF is operated by MES staff and contract laborers for a total of nine employees. The PPF operations include separating and baling mixed paper and OCC to sell to commodity brokers for processing or ultimate distribution into the

[15] More Information about acceptable materials can be found:

Executive Regulation 1-15: Residential and Commercial Recycling

market. The mixed paper and OCC are baled and sent to paper mills, both domestically and exported internationally, to be made into new products.

3.5.3 Yard Trim Composting Facility

In 1983, the County purchased the former "Matthews Farm" near Dickerson, Maryland, where WSSC Water operated a 118-acre sewage sludge composting facility. The County converted the site into the MCYTCF. The MCYTCF is operated by the MES under an Intergovernmental Agreement with the County.

The facility is located at 21210 Martinsburg Road, Dickerson, MD 20842. Facility operations occur on a 48-acre bituminous pavement pad. Yard trim materials are composted at the facility in an open-air windrow operation using mobile windrow turners. Yard trim is received, sorted, and processed at the Shady Grove Processing Facility and Transfer Station in Derwood before being transported to the compost facility by rail and truck. Leaves received at the Silver Spring Depot during the County's vacuum leaf collection program are shipped by truck directly to the MCYTCF.

To reduce truck traffic on MD Route 28 and other roads near the MCYTCF, the transport of processed yard trim by rail is prioritized. The goal is to maximize rail transport of yard trim to the MCYTCF.

MES markets the finished product of the aerobic composting process at the MCYTCF, marketed under the Leafgro® brand name. Bagged and bulk Leafgro® is shipped by truck into the commercial soil amendment market.

The MCYTCF operates under the 1996 Agreement of Settlement and Compromise ("Sugarloaf Agreement") between the Sugarloaf Citizens Association (SCA) and the County. The Sugarloaf Agreement caps incoming yard trim handled and processed at the MCYTCF at 77,000 tons per fiscal year. Production of bagged compost is at 650,000 bags per fiscal year. The stipulations of the Sugarloaf Agreement include operating hours, pieces of equipment, staffing levels, and various operational parameters to minimize any impact of MCYTCF operations on the surrounding community. The Sugarloaf Agreement includes provisions for the 77,000-ton cap to be exceeded only for pilot programs and prior written SCA approval.

The County aggressively promotes grasscycling and backyard composting to reduce the amount of yard trim DEP has to manage and remain under the 77,000 incoming ton cap at the MCYTCF. County residents may obtain compost bins at no additional charge to encourage them to enjoy the benefits of composting their yard trim materials at home.

3.5.4 Resource Recovery Facility

The RRF is located in Dickerson, Maryland, on 34 acres adjacent to the former Dickerson Generating Station. The RRF employs a mass burn combustion technology to process MSW, employing three (3) 600-ton-per-day waterwall furnaces with Martin reverse reciprocating grates. Each unit generates approximately 171,100 pounds of steam per hour at 865 pounds per square inch (psi) at 830°F. The steam powers a turbine generator with the capacity to produce 63 MW of electricity. The NMWDA sells electricity generated and Renewable Energy Credits (REC's) into the regional market as a member of PJM Interconnection.

On behalf of the County, NMWDA provided financing for the design and construction of the RRF and required transportation improvements. The design and construction loans were paid off in 2016. NMWDA also manages the contract and service agreement with Reworld Montgomery, Inc., a subsidiary of Reworld Energy Corporation, formerly Covanta Montgomery, Inc., to operate and maintain the RRF, Transfer Station, and related transportation system.

The County has a Waste Disposal Agreement with the NMWDA that provides for the disposal of non-recycled wastes and payment of service fees. The RRF is operating under the second 5-year extension period, which ends in April 2026. The County (pending County Council approval) is executing a short-term extension of the current Service Agreement with Reworld Montgomery under emergency procedures for up to five (5) additional years with the County retaining the right to early termination.

Changes to the Waste Disposal and Service Agreements – The County must not approve or allow to take effect, under either the Waste Disposal Agreement or Service Agreement, any material change in the capacity or operation or any material reduction in performance or environmental standards of the facility or the transportation system unless the Director of DEP has submitted the change to the County Council. The County Council must approve or disapprove the proposed change within 30 days or two regular County Council work sessions, whichever is longer. If the County Council does not act within this time frame, the change will stand approved unless the County Council approves a resolution extending the time allowed for Council action. In addition to the process noted above, any material change in either the Waste Disposal Agreement or Service Agreement that would result in the closure of the RRF must not be approved or be allowed to take effect until an amendment to the Ten-Year Plan revising the County's primary disposal path for waste is adopted by the County Council and approved by MDE.

Electricity Sales Agreement—The NMWDA sells the electricity generated at the RRF into the PJM energy market. It also sells the capacity credits and RECs generated by the facility into the PJM capacity market and the open REC market, respectively.

Monitoring Program – DEP monitors RRF stack emissions during all operating hours using a data telemetry link to the Continuous Emissions Monitoring System (CEMS) provided

under the facility's Title V air permit. The Air Pollution Control (APC) system includes processes for the removal of nitrogen oxides (NOx), acid gases (SO2 and HCl), mercury dioxins, and particulate matter. The CEMS measures the emission levels of sulfur dioxide, nitrogen oxides, hydrogen chloride, temperature, opacity, and carbon monoxide to ensure the APC system is operating correctly and the facility is adhering to its air permit. The CEMS data is shared on the County's website at https://www.montgomerycountymd.gov/sws/facilities/rrf/cem.html. Additionally, several health-risk assessment studies have concluded that there are "no measurable influences on ambient air concentrations attributable to RRF source emissions."[16]

Though not required by permit or regulation, DEP periodically monitors levels of certain pollutants in ground-level ambient air and non-air environmental media. The pollutants monitored include dioxins, furans, and trace metals, including arsenic, beryllium, chromium, cadmium, nickel, lead, and mercury.

In 2009, the County upgraded the RRF APC system, reducing NOx emissions by approximately 50 percent. The new NOx control system eliminated the need for the hazardous material anhydrous ammonia to be used and stored at the RRF.

Reworld Montgomery, Inc. participates in the Voluntary Protection Program (VPP) under the Occupational Safety and Health Act (OSHA). To qualify for and maintain participation in the VPP, Maryland Occupational Safety and Health rigorously audits and inspects Reworld Montgomery, Inc. regularly. Audit and inspection results must document Reworld Montgomery, Inc.'s achievement and maintenance of continuous workplace safety and health improvement.

Through the Service Agreement or Change Orders, DEP, in cooperation with NMWDA and Reworld Montgomery, will require changes or improvements to the RRF's air pollution control systems and/or operational practices should stack and/or ambient monitoring data indicate current systems and practices are not in compliance with regulatory and/or permit requirements.

Annual Capacity – The RRF was designed and operated to not compete with the county's waste reduction, reuse, and recycling initiatives. To ensure a balance between each component of the County's MSW processing system, the RRF has a nominal design capacity of 1,800 tons per day or 657,000 tons per year based on a waste heating value of 5,500 BTU/lb. The County limits the RRF to 95% of capacity. A target of 85% – 95% capacity is maintained to ensure permit limits are not exceeded. The RRF's refuse disposal permit allows a maximum of 689,000 tons of waste per calendar year to be delivered to the RRF. In CY 2022, the RRF accepted 552,918 tons of waste, about 80% of its capacity.

[16] From "Fourth Operational Phase Ambient Air Monitoring Program, Winter 2013-2014 and 2014-2015" https://www.montgomerycountymd.gov/SWS/Resources/Files/rrf/ambient-air-report-1606/Ambient-Air-Report-1606.pdf (last accessed 8/24/2018)

The County maintains a competitive tip fee to control the amount of processible waste delivered to the Transfer Station. Progress toward achieving high recycling rates also helps moderate this amount.

MSW deliveries to the RRF can vary greatly. The annual peak volume is in June, with a winter peak in December. The RRF's annual permit limit is based on the nominal design capacity of 1,800 tons per day. Because the RRF can safely operate above 1,800 tons per day, the County's practice is to process at higher rates during peak delivery periods to minimize the costly transport of MSW to an out-of-county landfill.

If MSW incoming volumes necessitated processible waste to be shipped for disposal at its out-of-county landfill, the County Executive must notify the County Council within thirty days of closing the calendar quarter. In that case, the County Executive must identify the actions taken or recommended to reduce demand on the RRF. Possible actions could include tip fee adjustments, expanded recycling efforts, or waste diversion programs. Private-sector MSW export does not require County Council notification because the County reports this information semi-annually.

RRF throughput tonnage projections and private sector MSW export tonnage projections for the upcoming fiscal year, the actual tonnages for the most recent fiscal year, and actual tonnages for the first half of the current fiscal year are part of the County Executive's annual Recommended Operating Budget presentation to the County Council.

Contingencies—The Service Agreement provides for out-of-county disposal of waste if the RRF cannot accept waste due to mechanical or operational failure or cessation of operations.

3.5.5 Beauty Spots: Satellite Drop-off Center

The Poolesville Beauty Spot is a satellite drop-off facility where residents can dispose of bulky waste. Beauty Spots are intended to "beautify" neighborhoods by giving residents a location to drop off large items for disposal. The Poolesville Beauty Spot is at 19200 Jerusalem Road in Poolesville, Maryland. It is only open on Saturdays from 7 am to 3 pm. Residents may drop off up to 500 pounds of bulky waste, including furniture, rugs, and mattresses. The Beauty Spot does not accept commercial waste, residential household trash, or recyclables, including scrap metal or yard trim. The current contractor, Reworld, transports material received at the Beauty Spot for disposal at the Shady Grove Processing Facility and Transfer Station.

3.5.6 Land Reserved for Potential Future In-County Landfill

The County owns approximately 820 acres along Wasche Road near Dickerson, Maryland, known as "Site 2". This parcel will be held in reserve should changes in economic conditions, laws, regulations, or other circumstances emerge. The Refuse Disposal Permit # for Site 2 is 2019-WMF 0237.

The current design for a landfill at Site 2 provides a landfill footprint of approximately 125 acres. Site 2 is currently in use for agricultural purposes. Under the Letter of Understanding with the SCA, the County must notify the SCA at least one (1) year before the anticipated construction start date.

3.6 Waste Transportation System

The solid waste transportation system primarily consists of moving solid waste from the Transfer Station to the RRF, from the RRF to the out-of-County landfill, and from the Transfer Station to the out-of-County landfill or recycling facilities.

Transfer Station to RRF: Processible Waste and Yard Trim

Processible[17] waste received at the Transfer Station is hauled in enclosed forty-foot-long intermodal containers 18 miles by rail to the RRF. Containers are stacked two (2) high on lightweight, special-purpose rail cars and travel via an existing railroad right-of-way between a railroad yard adjacent to the existing Transfer Station and a 1.2-mile access track and rail yard adjacent to the RRF. CSX Transportation, Inc. provides rail service. A portion of the yard trim sent to the MCYTCF is transported from the Transfer Station via rail to the RRF and by truck to the MCYTCF.

RRF to Out-of-County Landfill: RRF Ash, Non-Processible Waste, and Bypassed Waste

In 2023, the County assumed the NMWDA's contract with Old Dominion Landfill in Henrico County, Virginia, to transport and recycle ash residue from the RRF. Ash residue delivered to the Old Dominion Landfill is processed to screen the material into two sizes. During the screening process, ferrous and non-ferrous metals are removed to be recycled. The screened ash residue is reused within the landfill, one for alternate daily cover and one for road base for internal landfill roads. The contract expires in August 2026.

Under the Service Agreement, Reworld is responsible for managing non-processible waste received at the Transfer Station.

If the RRF cannot accept processible waste, the Service Agreement specifies the conditions and requirements for waste bypass and whether the County or Reworld pays for the cost.

[17] Processible Waste – waste that enters the County's waste system and is deemed acceptable for processing at the Resource Recovery Facility.

Non-processible waste that can be recycled is sent to various regional reclamation facilities. Under the Service Agreement with Reworld, non-processible waste and bypass waste can be transported for disposal at approved disposal facilities at Reworld's discretion.

3.7 Regional Non-County Solid Waste Disposal Facilities

The accounting of MSW generated in the County is independent of the location at which the MSW was processed. Refuse generated in the County may be processed at the County's Transfer Station or private facilities outside the County. Privately operated MSW disposal facilities do not exist within Montgomery County. County recycling and composting facilities primarily handle materials generated by the single-family residential sector. Recyclables generated by the multi-family residential and non-residential sectors are processed at private facilities and the County's MRF. Privately operated recycling facilities are located within the County and adjacent jurisdictions.

The County validates generation rates by analyzing public and private sector waste disposal and recycling practices. County Executive Regulation 5-13 AM requires collectors and haulers transporting solid waste in the County to submit semi-annual reports about their activity. The report form requires information about the amount and type of solid waste or recycling collected, the sector from which the material was collected, and the name and location of the facilities to which the material was delivered.

Reports from a collector or hauler are due each August 1st for the preceding January 1st to June 30th period and each February 1st for the preceding July 1st to December 31st period. DEP compiles these reports, and together with the County's Transfer Station scale house records, they provide an important part of the County's solid waste system-wide tonnage accounting.

3.7.1 MSW handled by Private Haulers

As shown in **Table 3.6**, in 2022, approximately 75,000 tons of MSW generated in Montgomery County were disposed of at facilities outside the County; some were taken outside of Maryland, e.g., Washington DC and Virginia. That is a 38% reduction over the tons disposed outside of the County in the last planning period, 2017.

Table 3.6 Facilities Utilized Outside Montgomery County by Private Sector to Dispose of Municipal Solid Waste in CY2022

Solid Waste Disposal Facilities Used CY2022	Total Tons
WM Annapolis Junction	38,464
WM Fort Totten	11,998
Recycle One	7,691
Giant Food Stores Distribution Center	2,531
Alexandria Waste Recovery Facility	2,267
Federal IPC	1,784
Wheelabrator (BRESCO)	1,495
WM Northeast TS	1,491
Olive Street Processing (WB Waste)	1,347
WM Recycle America Elkridge	1,265
Encore Recycling	947
WM Merrifield	716
Small amounts were taken to several other facilities (i.e., DC materials, King George, Apple Valley, Brown Station, PG County MRF, WM Benning Road TS, Reworld WTW Fairfax, WM Curtis Creek, Western Acceptance Facility)	2,615
Total MSW disposed at private facilities	**74,612**

Source: Recycling and Resource Management Division based on 2022 MRA Report

Private sector collectors are expected to continue to utilize facilities outside the County for disposal and understand that their use of these facilities is essential to the overall management of Montgomery County's integrated solid waste management system.

3.7.2 C&D handled by Private Haulers

C&D is nonhazardous waste from construction and demolition sites. It generally consists of brick, concrete, wood and lumber, roofing, drywall, and other masonry materials. C&D waste can be brought to the Transfer Station and more than 30 public and privately owned disposal facilities in and outside Montgomery County.

In 2022, approximately 294,000 tons of C&D materials were reported by private haulers or by scale records at the Transfer Station as generated in the County—a 7% increase over the amount reported in 2017. Of the C&D generated, Montgomery County managed half, and the private sector handled half. The continued use of the Transfer Station to dispose of C&D materials creates more pressure on the already constrained system. **Table 3.7** below shows how C&D generated in the County was managed, recycled, and disposed of in CY 2022. Compared to the previous planning period base year (2017), the total tons of C&D received for

recycling at the Transfer Station was reduced from 15% to 7%, and the percentage of the private sector was reduced from 24% to 14%.

Table 3.7 Tons of Construction and Demolition Debris Recycled and Disposed in CY 2022

Management of C&D Debris	Tons	% Managed
Total Tons Received by Montgomery County	**146,169**	**50%**
Recycled by County (does not count toward recycling rate) [1]	21,329	7%
Disposed by the County via its Out-of-County landfill contract	44,401	15%
Burned by County in RRF (remaining ash also disposed in Out-of-County Landfill)	80,438	27%
Total Tons Handled Entirely by the Private Sector	**147,882**	**50%**
Recycled (does not count toward recycling rate) [1]	42,192	14%
Disposed	105,690	36%
Total Tons Managed	**294,051**	**100%**

Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services Haulers Report, CY 2022. Reported as Non-MRA Materials Recycled

As noted in Table 3.8, 83% of the C&D collected by private haulers in CY 2022 was managed by six (6) facilities. Three (3) managed 75% of the total C&D: Sun Recycling and Ritchie Reclamation and C&D Recovery, LLC Processing Facility. The latter is a private C&D processing facility located in Montgomery County. A concentration of processing was noticeable when compared to the 2017 baseline. According to the haulers' report, C&D materials were transported to 31 other facilities in smaller amounts.

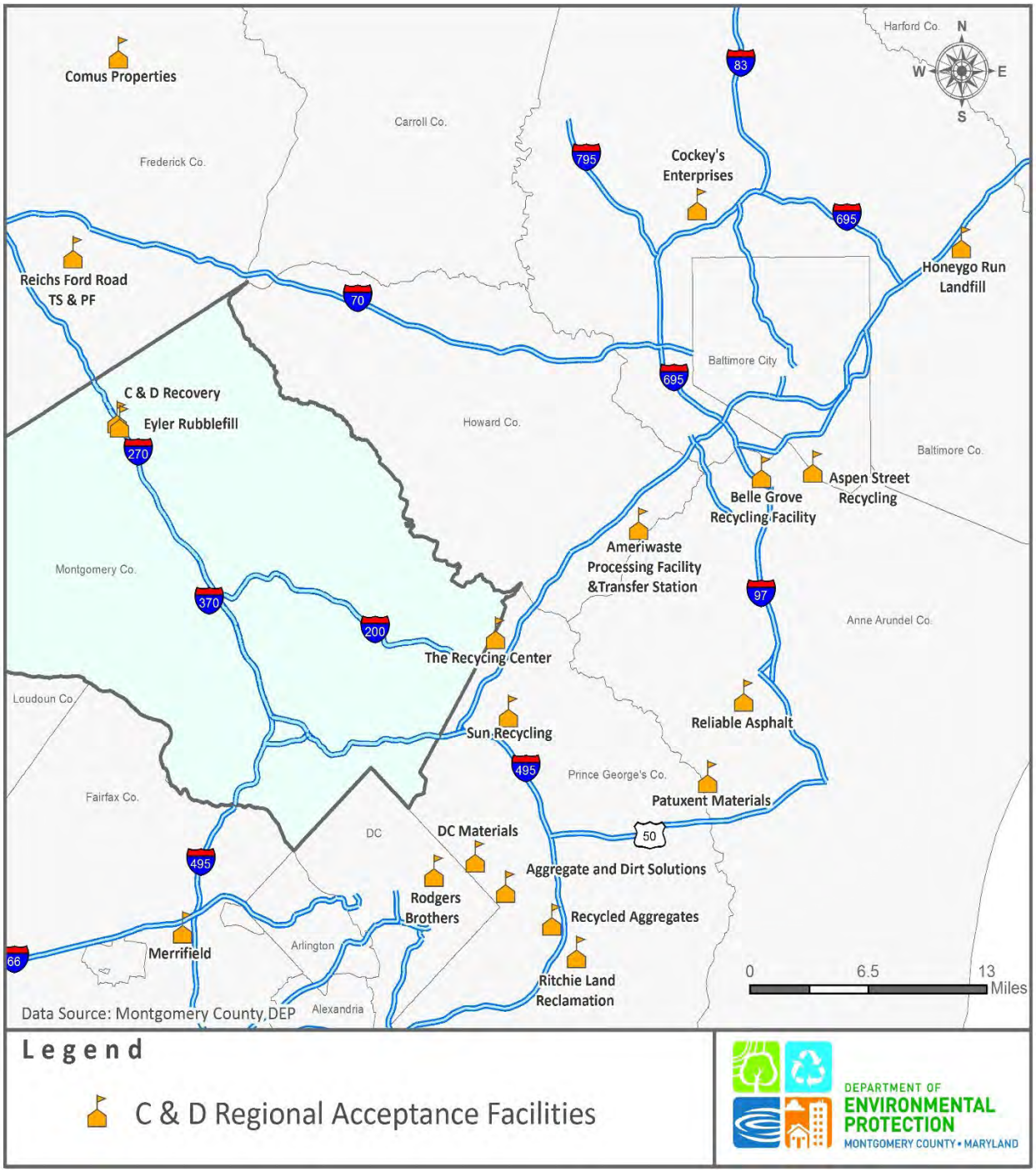
Table 3.8 C&D Acceptance Facilities

Facility Name	Disposed	Asphalt Recycled	Concrete Recycled	Gen. Recycled	Total
Sun Recycling	43,816		51	6,324	50,191
Ritchie Reclamation	37,593		123	5,948	43,664
C & D Recovery	14,029			2,439	16,468
Federal IPC	5,384			5	5,389
Tolson & Associates	1,441	1,128	2,985	10	5,564
Recycle One	1,099		9	968	2,076
a. Subtotal	**103,363**	**1,128**	**3,167**	**15,693**	**123,351**
b. Other 25 private facilities	2,327	4,287	8,518	9,399	24,531
Total tons processed	105,690	5,415	11,685	25,092	147,882

Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services 2024

Figure 3.6, below, shows a map of the facilities most commonly used by the private sector, as noted in **Table 3.8**. This map shows acceptance facilities in Maryland, Virginia, and D.C. The map only shows those reported by private haulers used to process C&D generated within Montgomery County. Therefore, **Figure 3.6** does not represent all the facilities available for processing C&D generated in Montgomery County.

Figure 3.6 C&D Acceptance Facilities



CHAPTER 4
SOLID WASTE MANAGEMENT NEEDS, FACILITY ASSESSMENTS and CONSTRAINTS

The County balances various demands to address its solid waste management needs. This chapter identifies County solid waste management needs and outlines a plan to address them. This chapter also assesses the constraints of solid waste facilities and describes existing programs to reduce disposal and increase diversion and recycling. Recycling rates cited in this chapter have been rounded up or down to the next whole number. This chapter is organized into the following subsections:

4.1 Municipal Solid Waste: Management Needs

As presented in Chapter 3, approximately 918,000 tons in CY 2022 per year is a 16% reduction compared with CY 2017; this amount is expected to increase by roughly 1.25% by 2034. Ideally, with the enhancements to the current diversion and recycling programs stated in Chapter 5, the number of tons disposed of will be minimized.

Education, technical assistance, and training programs are essential components of the County's integrated solid waste management system. The County has dedicated considerable resources to solid waste education and outreach programs. Montgomery County residents and businesses receive information about their role in reducing waste, reusing items, recycling, and using their purchasing power to support demand for recycled materials and products to preserve valuable natural resources.

4.1.1 Public Outreach and Education

Current Conditions and Constraints: Montgomery County conducts extensive public education and outreach activities for many solid waste programs. The County has developed an ongoing educational program to inform single-family and multi-family residents, businesses, organizations, and government agencies about waste reduction, reuse, recycling, grasscycling, composting, buying recycled items and materials, and other solid waste management initiatives. The goals of the County's public outreach and education efforts are to:

- Foster an understanding of why it is important and necessary to reduce waste, reuse, recycle, grasscycle, compost, and buy recycled items and materials;

- Create an awareness and understanding among Montgomery County single-family and multi-family residents, employees, and other members of the business community of the County's ongoing and future waste reduction, reuse, recycling, grasscycling, composting, and buying recycled efforts and the need and/or requirement to participate in these programs;
- Develop and disseminate information to residents, businesses, and the general public on residential and commercial waste reduction, reuse, recycling, grasscycling, composting, and buying recycled products, including what is recyclable, how to reduce waste on an individual and organizational level, and why it is critical to support recycling by also buying recycled products;
- Create a county-wide ethic of waste reduction, reuse, recycling, grasscycling, composting, and buying recycled as the norm;
- Educate residents and businesses on the many complex issues and costs associated with solid waste management and
- Promote the use of products made from recycled materials by residents, County, state, and federal governments, and businesses as a critical and foundational component of a successful recycling effort.

Education, technical assistance, and training activities utilize various information dissemination techniques designed to deliver the message in the most educationally effective, cost-effective, and appropriate manner. Efforts include:

- Tours of solid waste facilities, including the Transfer Station, MRF, Yard Trim Composting Facility, and RRF;
- Newsletters and electronic newsletters with tailored content on waste reduction, reuse, recycling, grasscycling, composting, and buying recycled information;
- Reference cards and materials on the do's and don'ts of recycling to remind single-family residents, multi-family residents, and businesses to recycle right;
- Posters, labels, magnets, and more illustrating acceptable recyclable materials and how-to's of recycling;
- Brochures, flyers, and fact sheets specific to various programs (including commercial waste reduction, reuse and recycling, multi-family waste reduction, reuse and recycling, curbside recycling, grasscycling, composting, buying recycled items and materials, special materials drop-offs, and HHW);
- Comprehensive guide about waste reduction, reuse, recycling, and solid waste services distributed to single-family residents;
- Sector-specific waste reduction, reuse, and recycling information for various types of businesses and organizations;
- Comprehensive waste reduction and reuse guides;
- Development and distribution of specialized handbooks and resource guides (including the Business Waste Reduction, Reuse and Recycling Handbook, the Multi-Family Property Managers' Waste Reduction, Reuse and Recycling

Handbook, and the Handbook for Businesses Generating Small Quantities of Hazardous Waste);

- Videos regarding County laws governing recycling and solid waste, business recycling, single-family residential recycling, recycling in schools, multi-family recycling, waste reduction, buying recycled products, and backyard composting and grasscycling;
- Development of videos and public service announcements for cable television programming featuring current topics in solid waste management;
- Development of radio spots and other creative broad-based multi-media materials featuring topics in solid waste management;
- Targeted direct mailings;
- Multi-media educational campaigns to increase waste reduction, reuse, recycling, grasscycling, composting, and buying recycled awareness;
- Presentations to civic groups, schools, chambers of commerce, businesses, business associations, condominium board meetings, tenant/resident association meetings, community and special events;
- Outreach through the DEP website and social media;
- Training of recycling volunteers to provide peer recycling outreach to citizen groups and increase the educational reach of staff;
- Educational materials and offerings in multiple languages and utilizing graphics and illustrations to the maximum extent possible;
- Translation of educational offerings and interpreter services for educational presentations into other languages;
- Seminars and workshops on varied topics (including business and multi-family waste reduction, reuse, and recycling, mandatory recycling regulations, legislative bans on problematic items or materials; and backyard/on-site composting techniques); Incentives, including backyard yard trim compost bins at no additional charge, to promote grasscycling and backyard composting;
- Recycling recognition program; and
- Commercial janitorial/maintenance service training and certification.

Recycling Volunteer Program: This program increases resident knowledge of and participation in County waste reduction, reuse, recycling, composting, grasscycling, and HHW programs through the effective use of community volunteers.

The County recruits, educates, and trains members of the community to perform several important functions, including (1) giving speeches and making presentations to civic associations, service clubs, and other organizations that request information regarding the County's solid waste programs; (2) providing neighborhood-based waste reduction, reuse, recycling, grasscycling, and backyard composting, and buying recycled products information to peers; and (3) assisting staff providing information at recycling booths and exhibits at special events, such as the Montgomery County Agricultural Fair and other community-based outreach events.

Recycling volunteers augment County resources through grassroots efforts to increase participation in the County's waste reduction, reuse, and recycling programs. The dedicated core of recycling volunteers have contributed tens of thousands of hours of service and directly reached hundreds of thousands of people since the inception of the Recycling Volunteer Program. The hours served by volunteers during the last ten years are listed below.

Calendar Year	Hours Served by Volunteers
2012	1844
2013	1436
2014	1425
2015	1216
2016	1179
2017	1602
2018	1680
2019	1613
2020	159
2021	69
2022	51
2023	447

Source: Recycling and Resource Management Division

SORRT: The SORRT Program (Smart Organizations Reduce and Recycle Tons) is the County's business or commercial waste reduction and recycling program. The program also serves as an information network promoting and supporting business waste reduction, reuse, recycling, grasscycling, composting, and buying recycled items and materials. Through SORRT, the County provides every generator that is not residential in nature, including businesses, non-profit organizations, government agencies, and private institutions with technical support, education, an extensive variety of materials, seminars and workshops, training, and other guidance to advance waste reduction, reuse, recycling, and procurement of recycled content materials and products in the non-residential sector. SORRT directly assists the owners, managers, employees, and customers/patrons of businesses and organizations. The SORRT Program reaches tens of thousands of County businesses, organizations, and government facilities annually.

TRRAC: The TRRAC Program (Think Reduce and Recycle at Apartments and Condominiums) is the County's multi-family waste reduction and recycling program. The program also serves as an information network promoting and supporting waste reduction, reuse, recycling, grasscycling, composting, and buying recycled items and materials at multi-family (apartment and condominium) properties. Through TRRAC, the County provides building owners, managers, on-site staff, and residents with technical support, education, an extensive

variety of materials, seminars and workshops, training, and other guidance to advance waste reduction, reuse, recycling, and procurement of recycled content materials and products in multi-family residential buildings.

Waste Reduction and Recycling Education in Public and Private Schools: DEP provides waste reduction, reuse, and recycling outreach and education to schools, parent-teacher associations, sponsored clubs, or teachers. Also, DEP will support individual teachers who request assistance in developing, reviewing, updating, or using instructional materials on waste reduction and recycling. As mentioned in Chapter 1, all public agencies, including Montgomery County Public Schools, must comply with all waste reduction and recycling requirements governing County businesses.

DEP evaluates the effectiveness of its education, technical assistance, training, and outreach strategies. It focuses its efforts on initiatives quantifiably demonstrated to have a measurable positive effect on recycling performance. DEP's annual submission for the County Executive's annual operating budget is based on results and findings of participation studies, focus groups, surveys, and other research used to evaluate the effectiveness of the techniques used. The results and findings provide rationale and justification for the specific outreach, education, training, and technical assistance proposed for the upcoming fiscal year.

Needs Assessment and Plan Direction: As indicated in Section 4.1.5, the County recycled over 40% of its MSW stream in CY 2022. This rate has been achieved by creating waste reduction, reuse, recycling, grasscycling, and composting programs, enforcing mandates, and encouraging residents and employees to participate and reduce waste and recycle more. The County recognizes that ongoing outreach and education, technical assistance, and training efforts are critical in maintaining and expanding waste reduction, reuse, and recycling achievements.

4.1.2 Recycled Goods Procurement

Current Conditions and Constraints: Section 11B-56 of the Montgomery County Code includes the County goal that recycled paper and paper products should constitute at least 50% of the total dollar value of paper and paper products purchased by or for the County government. The same section of the County Code also mandates that County agencies either require the use of goods containing recycled materials or a percentage price preference (up to 10%) for recycled materials when purchasing goods. The Office of Procurement reviews all purchasing agreements to ensure compliance with the requirements of the County Code. DEP distributes information on the availability of products containing recycled materials to County businesses, organizations, government facilities, and municipalities to encourage them to purchase and use these materials.

Needs Assessment and Plan Direction: The Office of Procurement and DEP will make all practicable efforts to promote maximum use of recycled materials by County agencies.

4.1.3 Waste Reduction

Waste reduction is the preferred method and highest priority in the County's solid waste management hierarchy. Reducing waste generation decreases the volume of material entering the system. The County's waste reduction plan includes the following elements:

Per Capita and Per Employee Waste Generation

DEP projects future waste generation based on M-NCPPC population and employment growth projections and the Department's best professional assessment of per capita and per-employee waste generation trends.

The County must regularly and systematically monitor waste generation trends per capita and per employee to update the waste generation projections. DEP monitors and revises the waste generation rates on a periodic basis. DEP performs multi-year trend data analysis to adjust the baseline per capita and per-employee waste generation rate.

Waste Reduction and Reuse Information and Programs

The County promotes waste reduction and reuse through outreach, education, technical assistance, and training using various media. The central elements of this effort are Waste Reduction, Reuse, and Recycling Public Education and Outreach, the SORRT Program, and the TRRAC Program, as well as education for residents of single-family homes and townhomes.

The County continues to promote and encourage waste reduction and reuse through outreach, education, technical assistance, and training for single-family and multi-family residents, multi-family property owners and managers, business and organization owners and employees, and government facilities and managers.

Waste Reduction Opportunities in County Government

The County adopted an Environmental Policy on July 29, 2003, promoting recycling, waste minimization, energy conservation, and environmentally responsible business practices for all its departments and agencies. In September 2009, the County Executive launched a paper and printing reduction initiative to reduce the government's environmental impact and save tax dollars. In April 2010, the County Executive introduced a new "green policy" requiring departments and offices to post all newsletters and annual reports on the County's website unless printing was required due to legal requirements or under special circumstances approved by the Chief Administrative Officer.

In June 2011, the County Executive formalized the "green policy" by issuing Administrative Procedure 5-23, which directs County departments and offices to decrease their environmental impact by evaluating operational needs, initiating waste reduction efforts such as reducing paper

use through two-sided printing, increasing use of email, and limited printing of meeting materials and handouts.

DEP advocates "Just in Time" ordering for supplies, a "First-in, First-out" use policy, and establishing inventory control procedures. Date-stamping of incoming materials, routing printed materials, electronic distribution of employee notices, and using durable, reusable items such as reusable tablecloths, ceramic mugs, durable water bottles, etc.

County Departments can be a model for the community by implementing Reduce, Reuse, and Recycle policies to perform their missions while producing less waste. The County will continue to look for waste reduction opportunities in County offices, schools, service centers, and public facilities.

Regional Waste Reduction Efforts

The County participates in regional efforts to promote waste reduction, including the Metropolitan Washington Council of Governments (MWCOG), MDE, the Maryland Recycling Network, and other regional entities. The MDE County Solid Waste and Recycling Managers group encourages the coordination of waste reduction efforts across the State. The County monitors, reviews, and provides input to appropriate State and national legislative initiatives on waste reduction.

Large-scale waste reduction involves behavior modifications beyond the County's boundaries and sphere of influence. A regional approach toward waste reduction will permit the leveraging of resources and increased effectiveness.

Waste Reduction Incentives

The County provides education, technical assistance, and training to all waste generators, emphasizing the economic and environmental benefits of increased waste reduction, reuse, and recycling to lower waste disposal costs, preserve natural resources, and improve our land, air, and water.

The costs for collection, transportation, and processing of refuse are significant. Refuse Tipping Fee avoidance provides an economic incentive for waste generators who pay a contractor for waste removal and disposal. Also, the *System Benefit Charge* financing method described in Chapter 5 provides financial incentives for the non-residential sector to reduce waste generation. Property owners who can document a lower-than-average waste generation rate for their land use type may submit an appeal and can be assessed for a reduced base System Benefit Charge. Independent of the benefits of simply shifting waste from disposal to recycling, the County's Cooperative Collection Methods (See Section 4.1.8) should continue emphasizing these fiscal incentives to reduce waste.

4.1.4 Recycling Achievement, Opportunity, and Direction

Many materials can be removed from the waste stream, but without stable recycling markets, these materials are not recyclable. With the new development of stable recycling markets for potentially recycled materials currently being disposed of, the County's recycling rate could increase dramatically.

4.1.5 Calculation of MSW Recycling Rate and Waste Diversion Rate

The MRA, Section 9-1705 of the Environment Article, Annotated Code of Maryland, requires each County to document its recycling rates. To assist the counties in calculating their recycling rate, MDE developed the "Tonnage System Reporting Guidelines." MDE issues revisions to these guidelines on an annual basis. The State may award an additional source reduction credit of up to 5% to a jurisdiction that implements specific source reduction activities and provides documentation to MDE to yield a higher combined recycling and diversion rate.

Under the MRA, not all materials may count toward the County's official recycling rate. For example, C & D materials are not considered MRA materials and do not count toward the official County recycling rate. With the passage of MD House Bill 280 (2021)[1] a radical change took place in the 2022 MRA tonnage reporting survey guidelines. HB 280 altered the definition of "recyclable materials" under the Maryland Recycling Act to exclude incinerator ash that is beneficially reused. Recycled ash is not considered an MRA material and no longer counts toward the MRA recycling rate. Thus, a significant decrease was noted in the County's MRA recycling rate CY2022.

As shown in Tables 3.1 and 4.1, Approximately 365,000 tons of MRA Materials were recycled in CY 2022. Overall, MSW generation was reduced by 18% compared with CY 2017. Both factors contributed to the decrease in the recycling rate from 56% in CY 2017 to 40% in CY 2022.

Montgomery County adopted the State's Recycling and Diversion Rate accounting method as its primary calculation method through Executive Regulation 7-12. This regulation also stipulates that the County may calculate its recycling progress and achievement using additional indicators. The County expects that the State will continue to award its full 5% Diversion Rate credit due to the County's ongoing and significant waste reduction efforts.

The tonnage projections in **Table 4.1** envision the County reaching approximately 43% recycling rate in CY 2034. Significant changes are expected in the MRA recycling rate as the Aiming for Zero Waste initiatives and infrastructure are implemented.

[1] 2021 Regular Session - House Bill 280 Chapter (maryland.gov)

Table 4.1 Municipal Solid Waste Recycling and Diversion Rate CY2022 – CY2034

	2022 (Actual)	2025	2028	2031	2034
Total MSW Generated	918,751	939,790	962,639	983,168	1,005,850
MRA Materials Recycled	365,321	379,591	394,744	412,088	431,107
Recycling Rate	39.8%	40.4%	41.0%	41.9%	42.9%
	44.8%	45.4%	46.0%	46.9%	47.9%

Since Montgomery County budgets on a fiscal year basis, fiscal year tonnage projections will vary from the calendar year data. Montgomery County's System Benefit Charge rates for solid waste services are structured to cover the County's cost to provide the various types of solid waste services.

As a matter of prudent fiscal policy and process, the County's tonnage projections published in any year may only include programs and initiatives proposed for the subject budget year. The County budget and planning process is on a fiscal year basis. The tonnage projections in the SWMP are on a calendar year basis and may vary from those used in the County's annual operating budget and fiscal planning. The County Executive approves the upcoming fiscal year's Recommended Operating Budget and Six-Year Fiscal Plan on March 15 of each year. The annual Fiscal Plan must be based on current recycling initiatives. It may not include any future-year recycling initiatives because they may require Council approval. Based on the current budget cycle, the tonnage projections in the SWMP may vary slightly from the County's FY17-30 Fiscal Plan.

The County maintains an ongoing recycling planning and implementation process. To this end, the County created a "Recycling Plan Update." The Update details how the County's recycling goals are being pursued and reports on currently approved program achievements. It may also include additional future programs and initiatives needed to meet its waste diversion and recycling goals. The Recycling Plan Update may be obtained by contacting DEP.

In CY 2022 – 2023, the County conducted a study to determine the composition of the MSW received at the County's Transfer Station. Statistical sampling was applied to the known tonnage of MSW received to estimate the composition of the MSW by material type. DEP applied the waste composition study data to develop an individualized recycling rate, or "Capture Rate," for a specific type or group of material types. **Table 4.2** was developed by applying the waste composition data to the County's known disposal tonnages. **Table 4.2** is based on the waste composition of random samplings applied to the overall disposal tonnage and, therefore, should not be considered precise; instead, it should be considered an estimation and a snapshot in time. It indicates opportunities to increase recycling by material type in terms of

tonnage potential and "capture rate." **Table 4.2** shows food scraps (food waste) as a potential relatively higher-volume recycling opportunity, with approximately 94,000 tons combined from the single-family residential, multi-family residential, and non-residential sectors.

As shown in **Table 4.2**, more than half of the waste generated in the County are materials banned from disposal. Those materials were selected based on market conditions in the region and recommended for recycling due to markets available and favorable. It is important to highlight the differences between the Capture Rate (66%) of those banned materials and the MRA recycling rate (40%)

- Recyclables Banned from Disposal (ER-15)
  - Overall 66% capture rate of all banned materials
  - Single-family capture rate of 66% (131,000 tons)
  - Multi-family capture rate 31% (11,000 tons)
  - Non-residential capture rate 71% (195,000 tons)

Table 4.2 provides numerous examples of current County program successes and opportunities for additional waste diversion and recycling.

- Material with high capture rates
  - Yard trim (yard waste) 87%
  - Ferrous/ Bimetal Containers 79%
  - Paper 57%

- Materials encouraged to be recycled
  - Food scraps (food waste) 106,000 tons generated only 8% captured
  - Non-recyclable paper 40,000 tons, an insignificant amount was captured
  - Whole tires 77% capture

Table 4.2 Waste Recycling by Material Type: Achievement and Opportunity

Basis: CY22 actual recycled tonnages plus composition of the disposed waste from 2022/2023 "Tip&Sort" applied to CY22 disposed waste tonnages.		CY22 Actuals												Opportunity			
		Single-Family			Multi-Family			Non-Residential			Aggregate Actual CY22			Disposed by Sector (tons)			Currently Disposed (Tons)
		Generated (tons)	Captured (tons)	Capture Rate %	Generated (tons)	Captured (tons)	Capture Rate %	Generated (tons)	Captured (tons)	Capture Rate %	Generated (tons)	Captured (tons)	Capture Rate %	Single-Family	Multi-Family	Non-Residential	
Banned ER1-15	*Subtotal, Banned Components*	*198,170*	*131,442*	***66.3%***	*36,337*	*11,133*	***30.6%***	*268,063*	*195,134*	***72.8%***	*502,570*	*337,710*	***67.2%***	***66,728***	***25,204***	***72,929***	***164,860***
	Paper	70,153	40,965	58.4%	15,099	2,105	13.9%	110,964	70,625	63.6%	196,215	113,695	57.9%	29,188	12,994	40,338	82,520
	Glass	18,337	12,801	69.8%	3,578	734	20.5%	10,035	3,897	38.8%	31,951	17,432	54.6%	5,536	2,844	6,138	14,518
	Other Ferrous	3,527	155	4.4%	1,199	42	3.5%	27,857	25,681	92.2%	32,583	25,877	79.4%	3,373	1,158	2,176	6,706
	Yardwaste	81,268	67,676	83.3%	10,080	8,076	80.1%	99,074	90,826	91.7%	190,422	166,578	87.5%	13,593	2,003	8,248	23,844
	Narrow-Neck Plastics	14,540	8,101	55.7%	3,263	37	1.1%	8,244	267	3.2%	26,048	8,406	32.3%	6,439	3,226	7,977	17,642
	Ferrous/Bimetal Containers	1,747	494	28.3%	577	133	23.1%	4,768	3,763	78.9%	7,091	4,390	61.9%	1,253	443	1,005	2,701
	Aluminum Beverage Cans	1,914	1,058	55.3%	325	5	1.5%	1,041	70	6.7%	3,280	1,133	34.5%	856	320	971	2,148
	Plastic Tubs/ Lids	4,979	168	3.4%	1,752	1	0.0%	3,985	4	0.1%	10,716	173	1.6%	4,811	1,752	3,981	10,543
	Other Aluminum (Pans/ Foil)	1,113	25	2.3%	320	0	0.0%	712	1	0.1%	2,145	26	1.2%	1,088	320	711	2,119
	Other Non-Ferrous Metal	592	-		144	-		1,383	-		2,118	-		592	144	1,383	2,118
Potential and Encouraged	Food Waste	46,056	1,475	3.2%	14,590	16	0.1%	42,359	7,332	17.3%	103,005	8,822	8.6%	44,581	14,574	35,028	94,183
	Non-Recyclable Paper	17,754	-		6,850	-		14,373	-		38,977	-		17,754	6,850	14,373	38,977
	Manure		-			-		220	220	100.0%	220	220	100.0%	-	-	-	-
	Shopping Bags	1,235	-		424	-		1,162	152	13.1%	2,820	152	5.4%	1,235	424	1,010	2,668
	Other Film Plastic	17,054	-		6,703	-		20,154	2,631	13.1%	43,911	2,631	6.0%	17,054	6,703	17,523	41,280
	Other Rigid Plastic (inc. Flower Pots)	9,769	1,195	12.2%	3,787	260	6.9%	9,944	1,727	17.4%	23,500	3,182	13.5%	8,574	3,527	8,216	20,317
	Textiles/ Leather/ Carpets	17,204	79	0.5%	8,489	0	0.0%	17,947	63	0.4%	43,640	143	0.3%	17,125	8,489	17,883	43,497
	Wood Waste (inc. Pallets)	4,721	9		2,861	0	0.0%	14,280	2,133	14.9%	21,863	2,141	9.8%	4,713	2,861	12,147	19,721
	Whole Tires (as Rubber)	2,001	1,665	83.2%	653	653	100.0%	5,843	4,330	74.1%	8,496	6,648	78.2%	335	-	1,513	1,848
	Electronics	4,011	1,157	28.8%	840	5	0.6%	3,944	366	9.3%	8,794	1,528	17.4%	2,854	834	3,578	7,266
	Batteries	100	92	91.3%	2	0	21.9%	604	598	99.1%	706	690	97.8%	9	2	6	16
	Animal Protein		-			-		747	747	100.0%	747	747	100.0%	-	-	-	-
No Markets	Other Wood	7,233	-		3,830	-		10,927	-		21,991	-					
	Other Glass	1,146	-		510	-		564	-		2,220	-					
	Disposable Diapers	9,483	-		3,815	-		5,141	-		18,439	-					
	Other Waste	37,965	449		14,278	2		24,611	257		76,854	708					
TOTAL		**373,904**	**137,563**	**36.79%**	**103,967**	**12,070**	**11.61%**	**440,880**	**215,689**	**48.92%**	**918,751**	**365,322**	**39.76%**	**180,963**	**69,467**	**184,204**	**434,634**

Notes:
Banned ER1-15: These materials are required to be recycled under Executive Regulation 1-15, and are banned from disposal in waste from all sectors.
Potential and Encouraged: Markets vary for these materials. Although not subject to the disposal ban, recycling is encouraged for all materials for which there are available markets.
No Markets: No existing or anticipated markets for these materials.

4.1.6 Single-Family Residential Sector Recycling

As Executive Regulation 1-15 mandates, the County provides curbside collection of recyclable materials to approximately 222,000 single-family residences in the County's unincorporated areas. Field surveys have indicated that participation in the curbside recycling program has exceeded 80% of eligible households. As shown in **Table 3.4**, approximately 174,000 residents of 70,000 households in incorporated cities and municipalities receive trash collection and recycling services arranged by their city/municipality.

Curbside Recycling Materials Timeline:

- **1992:** Glass, Plastic, Aluminum, and Ferrous containers and newspaper.
- **1994**: Yard Trim (grass, leaves, and brush).
- **1996**: Scrap Metal Items: Swing Sets, Iron Railings, Large Appliances, Disassembled Metal Sheds, etc.
- **2000:** Mixed Paper: including unwanted mail, catalogs, books, magazines, cardboard, newspaper, office paper, and telephone books.
- **2008:** Additional plastic items: plastic containers, jars, tubs, lids, cups, buckets, pails, and flower pots.
- **2009:** non-hazardous aerosol cans, reusable, durable plastic containers, lids, coated paper, milk/juice cartons, frozen food boxes, wax-coated boxes, paper beverage cups, and drink/juice boxes.
- **2012:** #1 PET thermoform plastic packaging such as clamshell containers, trays, deli containers, lids, domes, and cups
- **2022:** Curbside collection of electronic items and batteries begins as an on-call service in 5 of 13 recycling collection areas.

In CY 2022, the single-family residential sector accounted for 35.6% of the total County municipal solid waste generation (MSW), with a recycling rate of 36.8%.

The County's Curbside Recycling Collection Program has been successful due to:

- Strong education and outreach programs.
- Properly sized containers for residential, mixed paper, and cardboard.
    - Single Family Homes: 35-gallon or 65-gallon, heavy-duty, wheeled carts.
    - Town Homes: The County offers 35-gallon mixed paper-wheeled carts for easier storage.
- Virtually all forms of clean, dry mixed paper are accepted for recycling.

- County Executive Regulations 1-15[2] and 18-04[3] ban the disposal of recyclables mixed in with trash.

While many residents participate in the curbside recycling program, waste composition studies conducted at the Transfer Station reveal significant quantities of recyclable materials discarded with refuse. Increasing the capture rate of the currently mandated recyclables could increase the single-family residential recycling rate by several percentage points.

The County's single-family residential recycling system relies on each resident providing source separation of recyclable mixed paper and cardboard, commingled containers, yard trim, Christmas trees, and scrap metal. Residents receiving county-provided recycling collection services in 5 of 13 recycling collection areas also have the opportunity to call MC311 and schedule curbside collection of electronic items and batteries. Source separation allows for more efficient marketing of recyclables. The waste composition studies have shown that outreach, education, and enforcement are essential in the single-family sector. The county-wide distribution of large-wheeled recycling carts for recyclables in the single-family sector has proven effective in increasing recycling. To encourage increased recycling in townhouse communities, DEP will continue to provide carts and containers sized based on resident requests and monitor the results.

4.1.7 Multi-Family Residential Sector Recycling

Executive Regulation 1-15 mandates the recycling of aluminum, bi-metal, steel, glass, and plastic bottles, jars, cans, tubs and containers, mixed paper, cardboard, scrap metal, Christmas trees, and yard trim at all 740 apartment and condominium properties in the County, which together are comprised of approximately 145,000 dwelling units. Property owners and managers of multi-family properties provide for the collection of both solid waste and recyclables. The County provides technical assistance, education, and training regarding on-site collection alternatives and guidance concerning the management of collection contracts to assist multi-family property owners, managers, and staff in complying with the mandated recycling requirements. DEP also provides education and training to residents of multi-family properties.

The County enforces multi-family recycling regulations through mandatory reporting requirements and a combination of site investigations, on-site verifications, and incidents of non-compliance. Investigations of non-compliance issues are performed, and a program of judicious enforcement, progressive actions, and potential enforcement actions, including the issuance of citations and levying of fines, promotes full compliance with the County's regulations and increases recycling.

[2] Executive Regulation 1-15
[3] Executive Regulation 18-04

In CY 2022, the multi-family residential sector accounted for 11% of the total County waste generation with a multi-family Recycling Rate of 12%. Waste composition studies conducted at the Transfer Station reveal significant quantities of recyclable materials from multi-family residences discarded as refuse.

To increase recycling in the multi-family sector, DEP's primary strategy was to provide on-site technical assistance and conduct training and education to provide specific and tailored guidance to increase recycling participation and capture rates. Multi-family properties present specific challenges to recycling achievement, including not being provided collection services; diversity of residents; higher turnover rate in residents; high turnover of property management firms, as well as property managers; common/shared collection containers and areas for solid waste and recyclable materials afford anonymity; less convenience to recycle. A revamped strategy to increase multi-family recycling was implemented in 2023.

Also, DEP continues to investigate and evaluate collection systems for multi-family properties for opportunities to reduce the cost of recycling and create economic incentives for increased recycling. DEP consistently evaluates market conditions for recyclables in the region and recommends recycling other materials based on the availability of favorable markets relative to disposal.

4.1.8 Non-Residential Sector Recycling

Executive Regulation 1-15 mandates the recycling of glass, plastic, aluminum, bi-metal, and steel bottles, jars, tubs, containers and cans, mixed paper, cardboard, scrap metal, Christmas trees, and yard trim by more than 33,000 businesses, organizations, and government facilities in the commercial or non-residential sector. Commercial, industrial, and institutional property owners and managers must provide for the collection of solid waste and recyclables for their sites. The County provides technical assistance, education, and training regarding on-site collection alternatives and guidance concerning the management of collection contracts in complying with the mandated requirements. Education and training are provided to business owners, managers, and employees.

The County enforces non-residential recycling regulations through mandatory reporting requirements and a combination of site investigations, on-site verification, and potential enforcement actions, including issuing citations and levying fines for non-compliance.

In CY 2022, the non-residential sector accounted for 52.3% of County solid waste generation. The CY 2022 non-residential recycling rate was 49%. Waste composition studies conducted at the Transfer Station revealed significant quantities of recyclable materials from the non-residential sector were discarded as refuse.

Advancements are necessary to maximize recycling in the non-residential sector. Small businesses sometimes lack the resources, training, and experience to readily incorporate on-site recycling.

Table 4.2 shows substantial opportunities to increase recycling in the non-residential sector. The primary strategy for increasing non-residential recycling is to conduct direct on-site technical assistance and training to provide specific and tailored guidance to promote full compliance with County regulations and enforcement actions. DEP has also studied the costs of recycling and waste disposal collection experienced by businesses and organizations.

Cooperative Collection Methods: Small-scale business owners especially have expressed concerns over the years regarding the cost and availability of recycling and refuse collection services due to the relatively small amount of materials they generate. Businesses in more densely developed Central Business Districts (CBDs) regularly face space constraints when placing recycling and refuse collection containers outside their establishments. Small businesses often face a disproportionate administrative burden when independently securing and contracting collection services.

Because of these concerns, DEP conducted cooperative recycling and refuse collection study projects for small businesses in the Silver Spring CBD. This same scenario has been and is applicable in the Bethesda and Wheaton CBDs settings. DEP support includes on-site waste analysis of each business's waste stream, determining the amount of recyclable material generated, practical advice for securing collection services, education, training, and follow-up. Through the Cooperative Collection Method Program, DEP investigates and evaluates the current costs of recycling and waste disposal collection for small-scale businesses and determines the feasibility of collection scenarios, which would successfully reduce the recycling costs to create economic incentives for increased recycling.

Based on the data collected, implementing cooperative recycling and refuse collection projects have reduced monthly refuse and recycling collection costs and their required administrative efforts in contracting for recycling and refuse collection services. DEP will continue to evaluate opportunities for expanded implementation to increase recycling by businesses.

4.1.9 Investigation of Compliance Issues and Enforcement of Recycling Regulations

Montgomery County Executive Regulation 1-15 mandates recycling and reporting in Montgomery County. To ensure multi-family and non-residential sector compliance with the County's recycling regulations, DEP has dedicated Recycling Investigators responsible for investigating non-compliance issues and enforcing the County's solid waste laws, recycling regulations, and legislative bans and requirements by applying the necessary and appropriate enforcement measures.

DEP uses a progressive method of ensuring compliance with recycling regulations. Multi-family property or business owners, managers, and/or official representatives must initiate actions to correct violations and compliance deficiencies when notified by the County. Notifications may be in the form of verbal warnings, Notices of Violation, and Citations. Fines are associated with citations. Depending on the nature of the violation or compliance deficiency, the County will provide a specific timeframe for rectifying the violation or deficiency. This progressive process begins with DEP outreach and education to ensure awareness and understanding of the requirements. DEP uses technical assistance, training, and hands-on guidance. DEP provides tailored and specific recommendations on how a multi-family (apartment and condominium) property, business, organization, or government facility can set up, maintain, and expand its recycling program in compliance with the regulation. When these techniques do not bring about compliance by a multi-family property or business, DEP has the authority, ability, and responsibility to use stronger enforcement means.

4.1.10 Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery County, Maryland

Wasted food and food scraps represent a significant portion of the solid waste disposed of in the County. The 2022 Waste Composition Study estimated that food waste accounts for approximately 16.6% of the solid waste disposed in the County, along with non-recyclable paper (6.9%). Reducing wasted food, increasing edible food recovery, and source separating food scraps and non-recyclable paper for recycling would significantly reduce waste and increase the recycling rate.

DEP has provided assistance and guidance to individual residents, multi-family properties, and businesses in their efforts to separate food scraps and recycle them. The most significant limiting factor preventing more widespread recycling of food scraps has consistently been the lack of long-term, stable food scraps composting or processing facilities able to accept and process food scraps to create a new, useful product. Despite this, DEP has continued its efforts to expand food scraps recycling through several initiatives.

In April 2018, the County published its Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery County, Maryland. This Strategic Plan provides the direction, framework, and strategies for reducing wasted food in six (6) focus areas:

Reducing Wasted Food

Through better practices that result in not generating excess food scraps in the first place, we reduce the amount of waste that needs to be managed, potentially resulting in reduced costs for collecting food scraps for composting or disposal.

DEP has developed and conducted an educational awareness campaign to increase understanding of ways to reduce the amount of wasted food throughout the community. This

education includes recommendations for being more mindful about grocery purchasing, meal preparation tips to reduce waste, food storage recommendations, and more. DEP provides residents and businesses with suggested ways that they can reduce the amount of wasted food that ends up in the trash, such as:

- Make a shopping list before you go shopping and buy only what you need
- Properly store foods to reduce spoilable
- Serve smaller portion sizes
- Use leftovers for future meals
- Donate excess consumable foods to local food rescue organizations

Learn more: MoCo how to reduce-food-waste.html

Channeling Edible Food to Others

While Montgomery County, Maryland, is often cited as one of the wealthiest counties in the U.S., according to Feeding America, the nation's largest domestic hunger-relief network, 11.1[4]% of the County's population in 2022 was considered food insecure and did not have consistent access to quality, nutritious food. Foods generated in excess of the generator's needs that can be consumed, such as prepared foods, baked goods, fresh produce, canned or boxed foods, etc., can be diverted from disposal and donated to food rescue organizations. Channeling this food to others with unmet needs ensures the highest and best use of this food while also helping to address food insecurity. The County's goal is to increase edible food donations to food assistance organizations that distribute food to community members with unmet needs. In 2022, DEP created the Edible Food Recovery Working Group to collaborate with community partners with a variety of roles and perspectives to contribute towards this effort. The core of the Working Group is comprised of DEP, Montgomery County Department of Health and Human Services, Montgomery County Office of Food Systems Resilience, Manna Food Center, Community Food Rescue, and The Montgomery County Food Council (a non-profit organization). The Working Group is working to estimate the universe of edible food available in the County for donation, as well as the amount of edible food that is currently being donated to food assistance provider organizations. Work continues to use the estimates and other information and data gathered to establish goals to ensure increased edible food recovery and donations. Increasing edible food donations will help the County meet the objectives of the Strategic Plan to Advance Composting, Compost Use, and Food Scraps Division in Montgomery County, the Montgomery County Food Security Plan, as well as the County's Climate Action Plan.

In-Home, Backyard, and Community-Scale Composting

Through outreach, training, education, compost workshops, demonstrations, and distribution of educational materials, DEP supports, encourages, and promotes residents, multi-

[4] Hunger & Poverty in Montgomery County, Maryland | Map the Meal Gap

family property owners, business and commercial property owners, and managers to manage yard trim on-site through grasscycling (leaving grass clippings on the lawn after mowing), and backyard and community-scale composting.

The 2022 Waste Composition Study showed yard trim materials accounted for approximately 4% of the waste disposed of in the County, documenting the long-term success of the education and training programs.

Composting food scraps, such as vegetable peelings, in on-site or backyard composting efforts requires more steps and monitoring to reduce odors and the risk of pests. The County requires the use of a rodent-proof compost bin with a tight-fitting lid to compost food scraps on-site or in backyards. Adding food scraps in an open compost pile or a compost bin with no lid is problematic because this attracts rodents and other pests. The compost bins currently provided by the County are designed for composting yard trim because they are completely open on the top and the bottom and have aerating holes all around the sides. The County asks residents to keep food scraps out of these types of compost bins.

Over the last two years (2021 – 2023), with the help of 1,000 resident volunteers, DEP evaluated two types of compost bins for food scraps composting to ensure that the bins successfully deter rodents and aid in the decomposition of food scraps. These compost bins are the Earth Machine stationary bin and the Hot Frog dual chamber tumbler. The vast majority of volunteer participants have been able to compost food scraps in their backyards without experiencing any issues by using these bins and following our recommendations. The County is coordinating a bulk discount truck sale of the successfully evaluated Earth Machine and the Hot Frog Dual Chamber Tumbler. By facilitating this sale, the County will provide its residents the opportunity to purchase these compost bins at a reduced cost.

On-Site Institutional and On-Site Business Composting

According to the 2022 Waste Composition Study, businesses, organizations, and government facilities (non-residential sector) in the County disposed of an estimated 42,000 tons of food scraps, significantly smaller than the 68,000 tons reported in the CY2017 study. This significant decrease is partly due to the enormous impact on food service businesses resulting from the COVID-19 pandemic, as well as the shift of the workforce working from home.

DEP has identified a few businesses with on-site composting programs for food scraps and/or other organic materials recycled on-site. More businesses have implemented food scraps recycling collection services to collect source-separated food scraps and transport them to a commercial composting facility for processing.

The Commercial Food Scraps Recycling Partnership Program

The Commercial Food Scraps Recycling Partnership Program is a nationally-recognized, innovative, and very successful food scraps recycling development program. The County had identified the need to undertake a programmatic effort to boost food scraps recycling in the business community, especially for businesses, organizations, and government facilities that generate significant amounts of food scraps. In working with businesses, many have expressed the desire to recycle their food scraps but also expressed reservations due to ongoing challenges, including difficulty finding a food scraps recycling collector or one that would collect their food scraps cost-effectively and lack of confidence in continuous access to processing facilities where food scraps would be delivered for recycling. For these reasons, developing and implementing a program to assist businesses and boost food scrap recycling has been a high priority for the County. The County created the Commercial Food Scraps Recycling Partnership Program (launched in May 2020) using ingenuity and resourcefulness to address and confront the challenges the business community experienced, with the vision to assist businesses to succeed long-term in recycling food scraps. To increase achievement towards the County's recycling goal to reduce waste and recycle more, aiming for zero waste, the County is working to develop partnerships with businesses, organizations, and government facilities, especially those that generate large quantities of food scraps, to develop food scrap recycling programs at their workplace. Simultaneously, the County is also working to develop and/or secure additional processing capacity to ensure that the food scraps that are separated from other waste are delivered to food scrap recycling processing facilities and recycled into new, useful products or materials.

Based on the information gathered and the estimated amount of food scraps generated, DEP contacts potential Partner businesses, organizations, schools, and government facilities in a prioritized way. Only businesses that are not subject to any mandates to recycle food scraps, have not recycled their food scraps previously, do not have a program to recycle food scraps in place, and do not have a secured collection method/collector to collect food scraps for recycling are eligible to participate in this County initiative. DEP discusses the purpose and goals of the program and offers technical assistance, hands-on support, and incentives to induce their participation as a Partner in the program. After initial conversations with potential Partners, DEP schedules and conducts on-site visits to further discuss the program and obtain additional data and information. During on-site visits, DEP obtains more detailed information on the amount of food scraps generated daily, weekly, monthly, seasonal and/or annual. DEP also reviews the internal processes at each location to understand where and how food scraps are generated. Using all available information, staff develops and provides site-specific information for each Partner, such as the level of food scraps recycling collection services that will be needed, namely the optimal number of food scraps recycling collection containers, and the frequency of collection. DEP then schedules and conducts on-site training programs, including conducting training in other languages where desired or needed, before the commencement of the food scraps recycling collection service.

The County secured recycling processing capacity for food scraps generated by participating Partners in its Commercial Food Scraps Recycling Partnership Program at a composting facility in the region. This assures each partner that they can reliably continue to separate their food scraps for recycling without disruption and that these food scraps are, in fact, recycled into a new, useful compost product. The consistent and stable availability of processing capacity at a composting facility provides generators the confidence that their recycling program will operate smoothly and continue without interruption in the long term. The County also provides collection services and transportation of the source-separated food scraps from the generator to the food scraps recycling processor, using its 8-cubic yard food scraps recycling collection truck to collect food scraps from the generators on a regularly scheduled basis.

For the limited duration that each partner is a part of this program, the County collects data, and shares this data with the partner. The County continues to provide technical support and assistance. Recommendations are also provided to each partner as they approach graduation, so they can secure privately contracted food scraps recycling collection services and continue to source separate and recycle their food scraps. All successful graduates have continued to recycle their food scraps on their own.

On-Farm Composting

The U.S. Department of Agriculture's 2012 Ag Census Report estimated 540 farms in Montgomery County, an average of 118 acres. Forty-two (42%) percent are farmed as a primary occupation. In 1980, Montgomery County created a 93,000-acre Agricultural Reserve, zoned to encourage agricultural use. Animal manure and other agricultural by-products are routinely composted as part of sound agricultural practices. The finished compost is used on-site to build and maintain healthy soils. DEP is aware of some farms in the County that are receiving limited amounts of food scraps and other organic materials from off-site sources for composting and use on-site.

Composting Capacity to Serve Montgomery County

DEP has developed educational materials and training and recommended best practices for implementing food scraps recycling programs at the point of generation. The lack of long-term, stable food scraps composting processing facilities to serve the region is a limiting factor in generators' establishment of such programs.

Strategies to Maximize Food Scraps Collection at the Curb

According to the 2022 Waste Composition Study estimates, the single-family sector disposes of approximately 45,000 tons of food scraps annually. Diverting food scraps and other acceptable organic materials from this sector will help the County achieve its ambitious waste diversion and recycling goals.

In late 2021, DEP began Phase I of its single-family residential curbside food scraps recycling and composting program. The goal was to recruit up to 1,700 volunteer single-family households in two (2) neighborhoods to test and evaluate the feasibility of large-scale curbside collection and recycling of food scraps. Data, feedback, and experience acquired are being utilized to inform planning for the permanent County-wide program. The County-wide collection of food scraps for recycling from all 220,000 single-family households cannot be implemented until the County develops its processing capacity to recycle collected food scraps into a new, useful product. Each household receives everything they need to participate, including educational and instructional materials. The program tests and determines the effectiveness and appropriateness of equipment (i.e., curbside carts, in-kitchen bins, compostable liners) to shape and develop the future County-wide program. Throughout this new, carefully considered initiative, DEP collects data on weekly cart set out (participation) rates, the average pounds per week of food scraps generated by households, and the overall tonnage collected on a weekly and monthly basis. Phase II of the program began in March 2023 with the addition of a third area with a goal of recruiting up to an additional 850 households in this new area. Phases I and II of this program will lead to the implementation of the most effective and efficient county-wide curbside food scrap recycling program.

4.2 Special Waste Streams: Management Needs

4.2.1 Land Clearing and Demolition

As reported in Section 3.7.2, historically, the bulk of land clearing and demolition waste was handled almost exclusively by the private sector. The incoming volume of land clearing and demolition waste at the County's Transfer Station has increased recently. In addition to the Transfer Station, in CY 2022, 50% of the tonnage generated by the county was processed and disposed of by more than 30 other facilities. C&D Recovery, LLC Processing Facility processed 14,029 tons of this material generated in the County.

For planning purposes, the projected volumes of land clearing and demolition waste generated are linked to population and employment increases and the state of the economy. As the amount of developable land in the County falls, the composition of these materials is expected to shift toward demolition materials from deconstruction and renovation of existing structures with reductions in the proportion of land clearing materials (e.g., large stumps and earth).

Needs Assessment and Plan Direction: With land clearing and demolition estimated at 25% of the waste stream, DEP believes additional County-owned disposal or recycling capacity is currently optional.

To the maximum extent feasible, the County will utilize its out-of-county haul contract to recycle the land clearing and demolition material it receives at its Transfer Station. DEP will

continue to explore the fiscal and operational feasibility of increased recycling for land clearing and demolition debris generated from County roadway construction projects.

C&D recycling does not influence the County's recycling rate calculation because C&D is not included in MSW and is not eligible for recycling credit under the Maryland Recycling Act.

Under the County's waste management hierarchy, recycling of wastes is preferred over disposal. DEP must plan to develop a diversion and recycling management strategy for C&D materials. Potential options to increase C&D recycling are covered in 5.2.5.

4.2.2 Asbestos Disposal

The County's solid waste facilities no longer accept Regulated Asbestos Containing Material (RACM) generated in the County. Generators of this type of waste contact licensed and permitted asbestos contractors experienced in the proper removal, handling, transportation, and disposal of RACM in a regulated disposal facility.

Non-friable asbestos, such as asbestos-containing floor tiles, shingles, and siding, may be included in the regular household trash. It must meet the requirements for home repair debris. DEP also accepts separated and double-bagged non-friable asbestos at the Shady Grove Processing Facility and Transfer Station.

Needs Assessment and Plan Direction: There is no need to change the existing County asbestos disposal policy.

4.2.3 Controlled Hazardous Substances

Controlled Hazardous Substances (CHS), as defined in COMAR 26.13.01, is a solid waste that poses a substantial present or potential hazard to human health or the environment because of its quantity, concentrations, or chemical or physical characteristics.

These waste materials must be source-separated from MSW and require special handling and disposal practices to protect public health and the environment. Chapter 3.1.3 discussed the management needs for hazardous waste and special medical wastes.

Needs Assessment and Plan Direction: No changes in the County's involvement in hazardous waste management are anticipated in the next decade.

4.2.4 Hazardous Waste Emergency Response

Current Conditions and Constraints: Under the County's Emergency Operations Plan, the Montgomery County Fire and Rescue Services (MCFRS) is the primary agency for Oil and Hazardous Materials Response. DEP supports MCFRS by providing limited detection, monitoring,

sampling, and analysis operations by DEP Response Procedures for Hazardous Materials Spills. DEP is also responsible for providing support to manage hazardous material incident clean-up operations, including coordinating the County's efforts in decontaminating public and private properties and the environment.

DEP periodically updates a Response Procedures Manual for specific guidance on hazardous material releases. Items such as sewage releases are also included in the manual. When outside assistance is required, calls to "911" within the County are referred to the County Emergency Communications Center. All spills are reported to MDE under the County's approved Storm Water Management Prevention Plans. The County MCFRS hazardous incident response team responds to oil and other hazardous substances spills. Larger spills may require assistance from the MDE spill team and/or a private clean-up contractor. MCFRS is responsible for the containment and stabilization of on-site materials. Once MCFRS has rendered the incident site safe, the Division of Environmental Policy and Compliance (DEPC) coordinates the removal of the hazardous materials.

DEP can issue fines for illegal dumping on county roads, rights-of-way, streams, and storm drains under the County's Water Quality Protection Charge Ordinance (Montgomery County Code, Chapter 19, Section 19-35). Through the County's Water Quality Protection Charge Ordinance, DEP established specific procedural guidelines to address illegal storm drain connections. If an unlawful storm drain connection is identified, DEPC may write a Notice of Violation to the responsible party and require corrective actions, including cleaning up any spilled material and requiring a legal means of discharge. Enforcement of illegal connections is the responsibility of DEPC and WSSC Water.

Needs Assessment and Plan Direction: The hazardous waste spill response system adequately serves County needs. No major structural modifications to the system are envisioned during the next ten years.

4.2.5 Special Medical Waste

Current Conditions and Constraints: Special medical waste is generated by hospitals, doctors' offices, and medical and research laboratories. State regulations govern the transport and disposal of special medical waste. Special medical waste must be transported by state-licensed haulers and processed at permitted facilities under a State manifest reporting system. The Transfer Station accepts a limited quantity of special medical waste contained in a special bag designed for this type of waste (red bag) previously autoclaved.

State law provides a residential use exemption (e.g., for home insulin users) for disposal of home medication material as MSW.

Special medical waste incinerators operate under State permits. At present, no special medical waste incinerators are permitted to operate in Montgomery County.

DEPC enforces air quality provisions of the County Code, reviews State installation and operating permits, and works with the County DPS to enforce compliance with the ventilation requirements of County building standards for any incinerator that operates in the County.

DEPC conducts investigations of improper disposal of special medical waste. If suspicious waste is identified at the Transfer Station, the facility manager contacts DEPC. DEPC investigates and supervises the removal of any improperly disposed special medical waste.

Needs Assessment and Plan Direction: Aside from the licensing and investigative efforts listed in the paragraphs above, the County does not participate in special medical waste management or regulation. Currently, all special medical waste generated in the County is processed at private facilities outside the County.

4.2.6 Animal Carcass Waste (Dead Animals)

Current Conditions and Constraints: The County has no animal carcass waste rendering facilities. The two nearest rendering plants processing dead farm animals operated by Valley Proteins, Inc. are located near Baltimore, MD, and Winchester, VA. In addition, one privately owned pet crematorium operates under a State permit in the County.

Needs Assessment and Plan Direction: Rendering facilities primarily collect meat by-products from farms, restaurants, institutions, and grocery stores. Domestic pet carcass generators include the County Police Department Animal Services Division, the Montgomery County Animal Shelter, and pet crematoria. Given facility siting constraints, new rendering facilities and incinerators are unlikely to set up an operation in the County. Over the next ten years, County animal waste generators will likely remain dependent on out-of-county rendering facilities.

4.2.7 Bulky Wastes

Current Conditions and Constraints: Bulky wastes include furniture, large household appliances (known as white goods), other scrap metals, and building materials. Bulky items are directed to different areas of the Transfer Station for recycling or disposal, depending upon the type of materials. White goods and other scrap metals are sent to scrap metal dealers for recycling. Non-profit organizations pick up reusable building materials and dropped off at the Transfer Station. Other bulky items unsuitable for disposal at the RRF are included with other non-processible waste sent for disposal at a private landfill under contract to the County.

Needs Assessment and Plan Direction: Existing facilities and programs appear sufficient to accommodate bulky waste materials. However, the frequency and availability of County-provided curbside bulk material pick-up may need to be revised.

4.2.8 Automobiles

Current Conditions and Constraints: Two (2) automobile parts salvage companies operate in the County. However, no full-scale automobile recycling facilities exist within the County. Retired automobiles are generally hauled to auto recyclers located outside of the County. The Montgomery County Police dispose of abandoned vehicles primarily through public auction. The police send approximately ten automobiles per year to scrap dealers.

Needs Assessment and Plan Direction: No further County involvement in automobile waste management appears warranted for the next decade.

4.2.9 Vehicle Tires

Current Conditions and Constraints: The State of Maryland developed a scrap tire program for managing scrap tires in Maryland. Many auto service centers in the County arrange for private recycling of their customers' tires at facilities outside the County. County residents may drop five (5) or fewer scrap tires yearly at the County's Transfer Station for recycling.

Needs Assessment and Plan Direction: The existing State scrap tire management system has sufficient capacity to recycle scrap tires generated in the County.

4.2.10 Wastewater Treatment Biosolids

Current Conditions and Constraints: Of all the wastewater generated in Montgomery County, approximately 80% is treated at the Blue Plains Water Resource Recovery Facility (WRRF) in Washington, D.C. Only about 20% of the total wastewater generated in Montgomery County is treated at local treatment facilities, including Seneca WRRF, Damascus WRRF, Hyattstown WRRF, and the Town of Poolesville WRRF.

The four (4) WRRFs in the County generate approximately 80 wet tons per day of biosolids. WSSC Water manages the biosolids generated from the Seneca, Damascus, and Hyattstown WRRFs. Biosolids management has been consolidated for these three (3) facilities, whereby all biosolids produced at each WRRF are transported and processed at the Piscataway WRRF located within Accokeek, Maryland. The biosolids are then processed at the newly commissioned bio-energy facility. The Poolesville WRRF is operated and maintained by the Town of Poolesville. Biosolids produced at this facility are hauled away and disposed of via landfill.

Needs Assessment and Plan Direction: The Piscataway Bioenergy facility was the result of

in managing its future biosolids produced from all of the WSSC Water WRRFs within both
. was to examine and develop a

. ed the design

-energy project comprised of thermal hydrolysis, mesophilic
, .

.

- Significant reduction in biosolids quantity.
- Production of digester gas as a renewable fuel, which will be used to produce heat and electric power.
- Production of high-quality (Class-A) biosolids which can be used more widely than the Class-B biosolids currently produced.

In recent years, most of the biosolids from WSSC Water's WRRFs have been re-used through . land-applied are subject to requirements of State-
- .
determined by the contractor that manages the material. The procurement process requires that each bidder have the necessary pe .

4.2.11 Septage

Current Conditions and Constraints: In the more rural, less-densely populated parts of Montgomery County, approximately 20,000 single residential properties depend primarily on individual septic systems for their wastewater disposal needs. For proper maintenance, private haulers periodically pump out septic systems, as permitted by the County. Pumped wastewater from these septic systems and other sources is transported and discharged into one of several WSSC's septage discharge facilities within the WSSC Water service area.

Currently, the Muddy Branch Road Disposal Site is the only location in the County accepting wastewater collected from septic tank pump out, waste holding tank discharge, bus holding tank discharge, and other similar sources. All the wastewater discharged at the Muddy Branch Road Disposal Site is conveyed through sewerage systems to the Blue Plains WRRF in Washington, D.C., for treatment.

Needs Assessment and Plan Direction: Due to concerns about trucks stacking on the public road waiting to unload and the possibility of increased truck traffic from future County's septic regulations, which may require all homes to pump their septic systems more frequently, WSSC Water is in the process of designing an expansion and improvements to the Muddy Branch facility. Construction is expected to begin in Spring 2026.

4.2.12 Other Wastes

Current Conditions and Constraints: As stated in Chapter 3, Montgomery County generates insignificant agricultural wastes and mining wastes.

- Ferrous metals are extracted from the RRF ash and recycled for beneficial use.
- Litter is considered MSW and is processed along with all other MSW received at County facilities.
- Street sweepings are blended with MSW and sent to the RRF.
- Residue from the Recycling Center and Paper Facility is shipped with other waste to the RRF.

Needs Assessment and Plan Direction: The County has established appropriate and sufficient facilities and programs for managing agricultural wastes, mining wastes, litter, recreational wastes, and street sweepings. No significant change in the management of these wastes appears warranted during the life of the SWMP.

4.3 Assessments of Constrains of Current Solid Waste Acceptance Facilities

A 2019 assessment carried out by DEP of all County-owned solid waste acceptance facilities identified a list of operational and physical improvements needed in County facilities over the planning period as follows:

County facilities with sufficient capacity and useful life beyond the term of the SWMP:

- RRF
- MCYTCF

County facilities needing increment in processing capacity during the term of the SWMP:

- Transfer Station
- MRF
- PPF

New Facilities needed (located in or out of the County):

- Food Scraps Processing

Available in-County land to develop infrastructure:

- 820 acres parcel known as (Site 2), located along Wasche Road near Dickerson, Maryland
- 118 acres in Dickerson, where the MCYTCF is sited.

4.3.1 Shady Grove Processing Facility and Transfer Station

There has been an increase in C&D despite the increase in the tipping fees for these materials. These materials cannot be processed at the RRF. Dirt, asphalt, and concrete are hauled to a permitted disposal facility. The County banned the acceptance of shingles and sheetrock at the Transfer Station on July 1, 2021.

To reduce the risk of accident or injury, the Transfer Station operator implemented changes and improvements to the unloading area inside the tipping building. These include angled tipping lanes, gates to regulate vehicle access to the tipping floor, and improved lighting.

Residential collection and commercial vehicles containing yard trim and natural wood materials enter the Transfer Station at the same commercial vehicle entrance on Shady Grove Road. During the fiscal year 2022, MES reported more than 103,000 commercial and residential vehicles delivering yard trim.

4.3.2 Materials Recovery Facility (MRF)

The current facility was built in 1991 and retrofitted in 2022. Many of the key components of the current commingled processing system are obsolete or have reached the end of their useful life. Parts availability is extremely limited, often requiring parts to be reverse-engineered or fabricated in-house, increasing downtime and costs. The current processing system lacks redundancy. If one component fails, the entire processing line is down.

The existing commingled system is not capable of processing the current incoming volume. A consultant's report determined the commingled system needs to process at least 170 tons per day reliably. The report also stated replacing or upgrading specific components of the current commingled system is impractical due to the current system configuration, the age of the existing equipment, and advancements in sorting methods and technologies. To process at least 170 tons per day, the consultant recommended a complete retrofit of the commingled processing system with improvements to the commingled building.

In May 2021, the County Council approved a capital project to upgrade and increase the MRF's capacity.

4.3.3 Mixed Paper Processing Facility (PPF)

Although the PPF equipment is new, it was designed to process up to 25 tons per hour. Due to ongoing system limitations addressed with the vendor, it cannot handle the volume of incoming mixed paper material received on peak days. Several processing limitations exist: The Paper Receiving Building is undersized to accommodate the incoming mixed paper material. This building was initially designed for yard trim operations but was converted for commingled bale storage after the opening of the MRF. The building was again repurposed for incoming paper

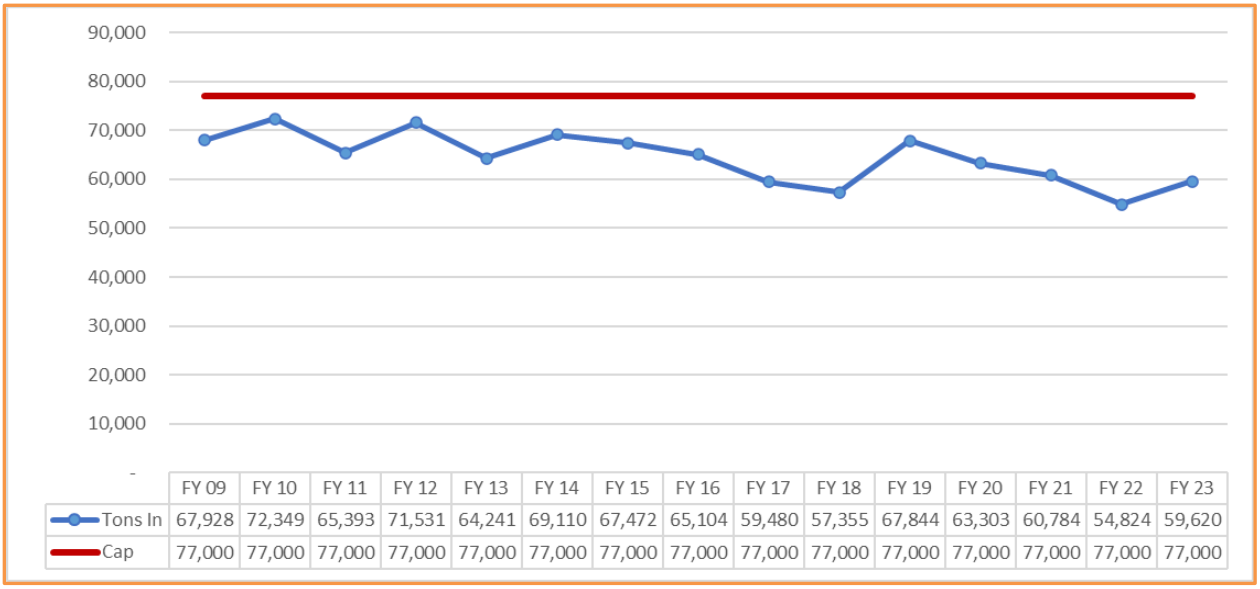
material storage as part of the paper processing upgrade when the new PPF was constructed in 2017. This facility is located on the MRF site.

4.3.4 Yard Trim Composting Facility

Figure 4.1 below illustrates the resulting slightly downward trend in the amount of material received for processing at the MCYTCF. Based on the data and before accounting for County growth, incoming tonnage needed to be composted during the planning period would not be expected to exceed the SCA annual tonnage limit. Still, historical tonnages suggest that weather and other factors can influence capacity needs more than might be expected in any year. Therefore, the County requires the yard trim hauler to maintain a backup contract for composting capacity as a good management practice.

The facility evaluation study states, "*It would be expected that the Yard Trim Compost Facility should be capable of continuing to process materials beyond the 10-year planning period".* In addition to the County's own capacity, private facilities such as ACME Biomass Reduction Inc. (19,000 tons per year) and Aspen Nursery (1,250 tons per year) provide additional organic processing capacity of materials generated in the County. Additionally, the Compost Crew at Wasche Farm Composting Facility has a planned capacity of 20,000 tons per year.

Figure 4.1 Tonnages of Leaves and Grass Received for Composting FY09 - 23



	FY 09	FY 10	FY 11	FY 12	FY 13	FY 14	FY 15	FY 16	FY 17	FY 18	FY 19	FY 20	FY 21	FY 22	FY 23
Tons In	67,928	72,349	65,393	71,531	64,241	69,110	67,472	65,104	59,480	57,355	67,844	63,303	60,784	54,824	59,620
Cap	77,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000	77,000

4.3.5 Resource Recovery Facility (RRF)

The RRF processes waste at a nominal 1,800 tons per day with a higher heating value of 5,500 BTU/lbs. It is physically capable, and it is the County's practice to process at a higher rate during peak periods of delivery and when waste has a higher heating value of less than 5,500 BTU/lbs. There is a strong seasonality to waste deliveries. Annually, the peak month is typically

June. If by-pass were to occur, it would most likely be during a period when a unit is in an outage for maintenance or repair or during such peak delivery months. The County's first strategy for avoiding by-pass is to run the RRF at its physical limit and schedule outages during non-peak delivery times of the year.

In the event of any failure or cessation of operation of the RRF or need to by-pass waste, waste materials normally processed by the RRF will be processed in a permitted alternative facility. The Service Agreement provides for a by-pass of processible and non-processible waste if the RRF is unavailable. Additionally, if RRF ash ever fails a toxicity test, the ash will be transported to a properly permitted facility. A controlled by-pass of processible waste may also accompany changes in tip fees.

4.3.6 Land Reserved for Potential Future In-County Landfill

The County owns approximately 820 acres between Martinsburg Road and Wasche Road near Dickerson, Maryland, known as "Site 2". This land is held in reserve for use if changes occur to the economic conditions, changes in the law, or other circumstances render out-of-county waste disposal infeasible. Should a waste disposal facility be constructed at this site, the landfill's footprint would consist of approximately 125 acres.

Site 2 continues to be used for agriculture until a landfill is needed. The County has an MDE permit to build and operate a landfill at Site 2. Under the *Letter of Understanding* signed by the County and SCA, the County must notify the SCA at least one year in advance of the anticipated construction start date.

4.3.7 Composting Facilities Accepting Food Scraps in MD and VA

The lack of food scraps processing capacity is the major obstacle in expanding food scraps recycling. As shown in **Table 3.7**, the lack of nearby food scrap processing facilities limits immediate expectations for vastly increased food scraps recycling. There is limited capacity at reliable processing facilities within a 50-mile radius of the Transfer Station, including the Compost Crew at Wasche Farm Composting a Tier II Facility, with a planned capacity of 20,000 tons per year to process yard trimmings, food scraps, manure, etc. Chapter 5 describes the County's strategy to obtain access food scrap processing capacity.

As required by Section 9-1703(b)(7) of the Environmental Article, there are no in-county or regional solid waste facilities that manage solid waste composting operations, the County has no plan to include a Mixed Solid Waste Composting (Dirty MRF) facility during the planning period.

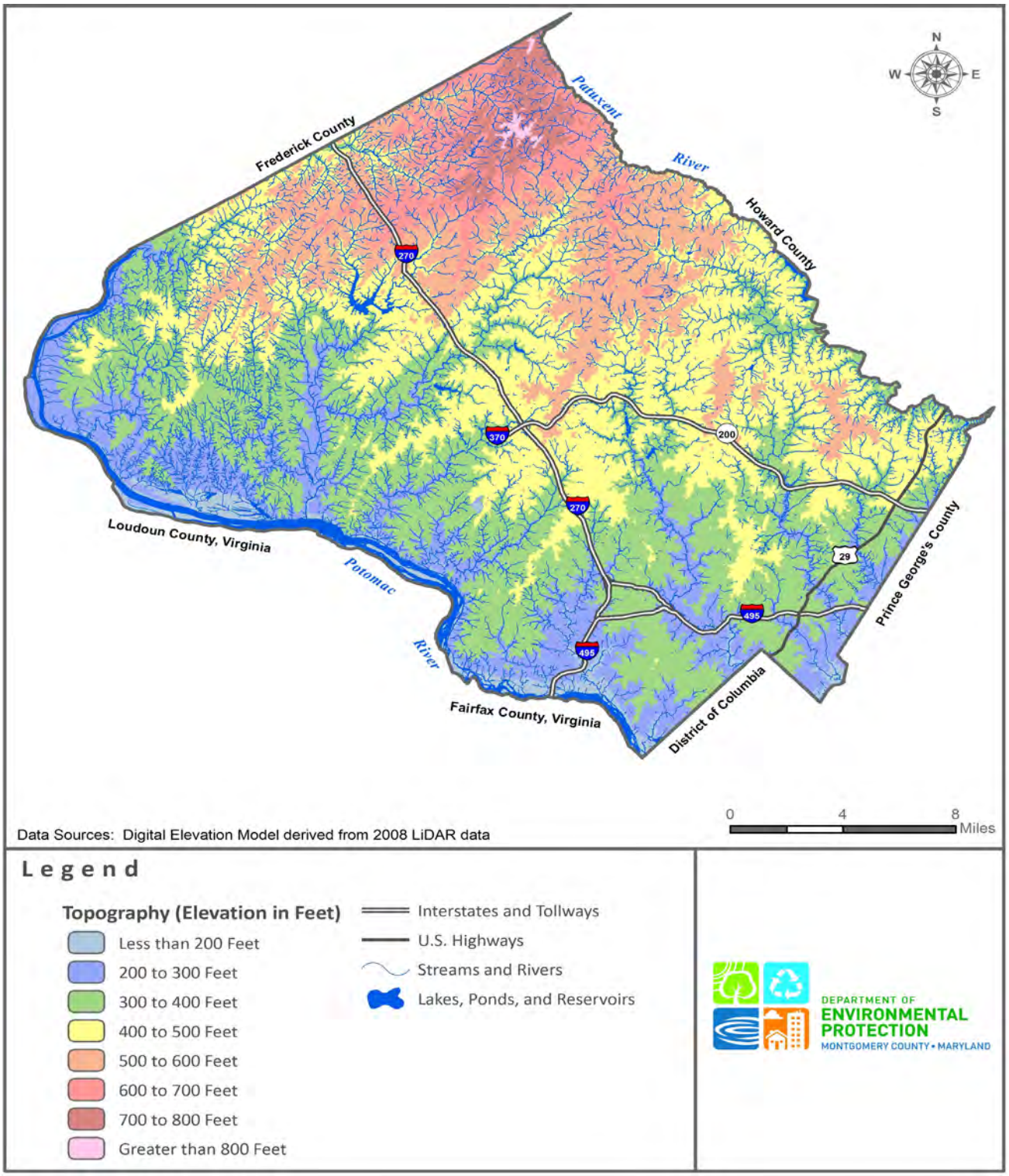
4.4 Constraints on New Solid Waste Acceptance Facilities

4.4.1 Physical Constraints on Waste Acceptance Facilities

Current Conditions and Constraints: Several physical characteristics of the land in Montgomery County influence the siting of new solid waste acceptance facilities. These constraints include topography, soil types, geologic conditions, aquifers, wetlands, and surface waters.

A. **Topography** – The general topography of Montgomery County is illustrated in **Figure 4.2**. The County is dominated by a rolling plain or "low hill" landscape. Hills are concentrated in the northern part of the County and adjacent to the major stream valleys. The highest point in the County is 873 feet above sea level; the lowest point in the County is 52 feet above sea level. The average elevation gradient is 29 feet per mile. The effort and site preparation costs for most solid waste facilities increase as the topographic variation increases.

Figure 4.2 County Topographic Map



B. Soil Types – A general description of Montgomery County soil types/groups and the areas where these soil types can be found in **Table 4.3**, and the locations of these soil types appear in **Figure 4.3**.

Table 4.3 County Generalized Soils Descriptions

Soil Groups	Area*	Description
Glenelg-Gaila-Occoquan	41%	Nearly level to strong sloping, well-drained, deep, and very deep soils that are loamy throughout. This soil type is found in the central part of the County and extends to the east and south. It is found on broad ridge tops and side slopes.
Brinklow-Baile-Occoquan	16%	Nearly level to moderately steep, well and poorly drained, moderately deep soils that are loamy throughout. This soil type is found in the northern part of the County. It is found on broad ridge tops and side slopes.
Urban land-Wheaton- Glenelg	16%	Nearly level to strongly sloping, well-drained, very deep soils that are loamy throughout. This soil type is found primarily in the Germantown area and southern and eastern portions of the County. It is found on broad ridgetops and side slopes.
Penn-Brentsville- Readington	14%	Nearly level to steep, well and moderately well-drained, moderately deep and deep soils that are loamy throughout. This soil type is found in the western part of the County. It is found on broad ridge tops and side slopes.
Blocktown-Brinklow- Linganore	10%	Gently sloping to steep, well-drained, and moderately deep soils that are loamy throughout. This soil type is found in the northern part of the County. It is found on broad ridge tops and side slopes.
Chillum-Croom- Beltsville	3%	Nearly level to steep, well-drained and moderately well-drained, very deep soils. This soil type is found in the eastern part of the County along the Prince George's County line. It is found on broad ridge tops and side slopes.

* Percent area of the County.
Source: . .
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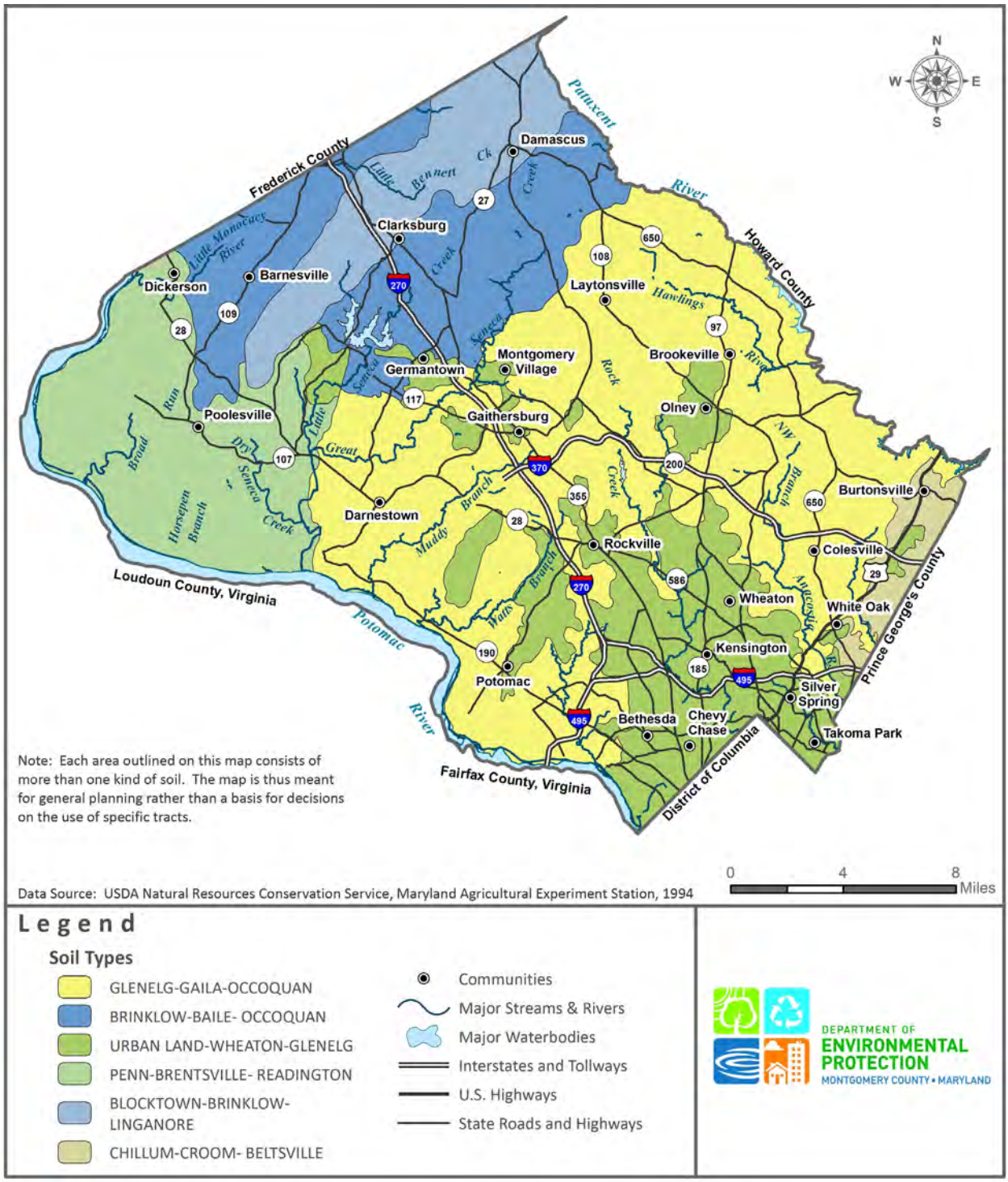
Figure 4.3 County General Soil Map



C. Geologic Conditions[5] – The County lies almost entirely in the Piedmont physiographic province, where the bedrock consists predominantly of metamorphic rocks of the Paleozoic age. Consolidated sedimentary rocks of the Early Triassic age occupy a down-faulted basin in the western part of the County. On hills and ridges along the eastern border, small erosional remnants of unconsolidated Cretaceous sedimentary rocks extend westward from the Coastal Plain in Prince George's County (see **Figure 4.4**).

The bedrock in the eastern two-thirds of the Piedmont consists of rocks of the Wissahickon Group. The best example of these rocks is exposed in the quarry of Rockville Crushed Stone Company south of Hunting Hill. The serpentinite here is quarried for use as crushed stone aggregate. Quarries for building stone in the micaceous quartzite are located in several places of the western schist belt.

Fine-grained slaty rocks mapped as the Urbana (e.g., Harpers), Ijamsville, and Marburg phyllites occupy the Piedmont of Montgomery County west, a line running north-northeast from Blockhouse Point on the Potomac River to a point on the Patuxent River due north of Etchison, at Annapolis Rock. Consolidated sedimentary rocks of the Triassic age underlie a large area in the western corner of the County. This represents a small portion of the large Culpepper Basin in neighboring Virginia. Red Triassic sandstone was quarried for building stone at several places along the bluffs north of the Potomac River during the 19th century.

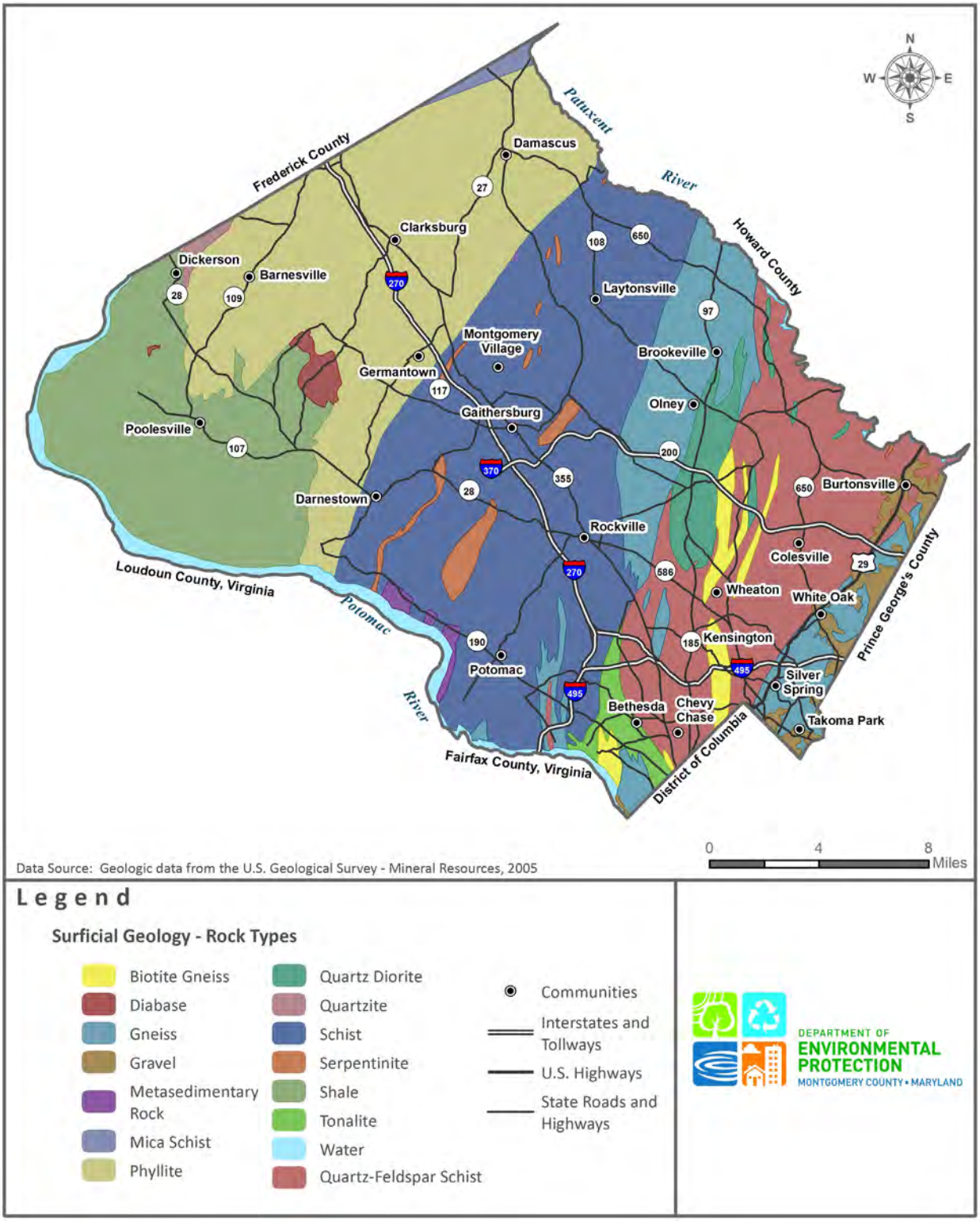
The general trend of the bedrock units across Montgomery County and the strike of the foliation and cleavage are northeast-southwest. Still, no particular lithology appears to have significantly controlled the topography.

Alluvial deposits of gravel, sand, silt, and clay of recent age are present along the Potomac River, particularly in the wide bottomlands of Triassic rocks west of Seneca. This alluvial fill is much less developed, where the river channel has been cut into hard metamorphic rocks along the Potomac east of Seneca, along the Patuxent River, and in the larger streams tributary to these rivers.

A large remnant of a high-level gravel terrace lies on Triassic bedrock between Martinsburg Road and Elmer School Road in the western part of the County. These gravels were floodplain deposits of the Potomac River when it flowed at a higher level in the late Tertiary or early Quaternary time before eroding to its present channel. Smaller patches of this same material occur to the south along the bluffs overlooking the floodplain of the Potomac River.

[5]Source: "Bedrock Geology of Montgomery County," compiled by Jonathan Edwards, Jr., Maryland Geological Survey, Baltimore, MD. December 1992.

Figure 4.4 County Geologic Conditions Map



D. Ground Water and Aquifers[6] – The major hydrogeologic units in the County are shown in **Figure 4.5**. Most of the groundwater in these units occurred in the soil and weathered surface mantle, which has an average thickness of 20-50 feet. Another groundwater occurs in cracks and pores of the underlying rock.

The County's water resources affect many aspects of its water supply and wastewater disposal needs. Surface water flows, influenced by the underlying geology, have created the County's hills and valleys, establishing its watersheds. The resulting topography strongly influences the structure and alignment of wastewater collection systems and the need for various water supply pressure zones. Surface water resources provide the majority of the County's community water supply. Surface waters also receive treated flows from several WRRFs. Groundwater depth and availability strongly affect individual water and sewerage systems, municipal water systems dependent on wells (such as Poolesville), and provide the base flow to surface streams.

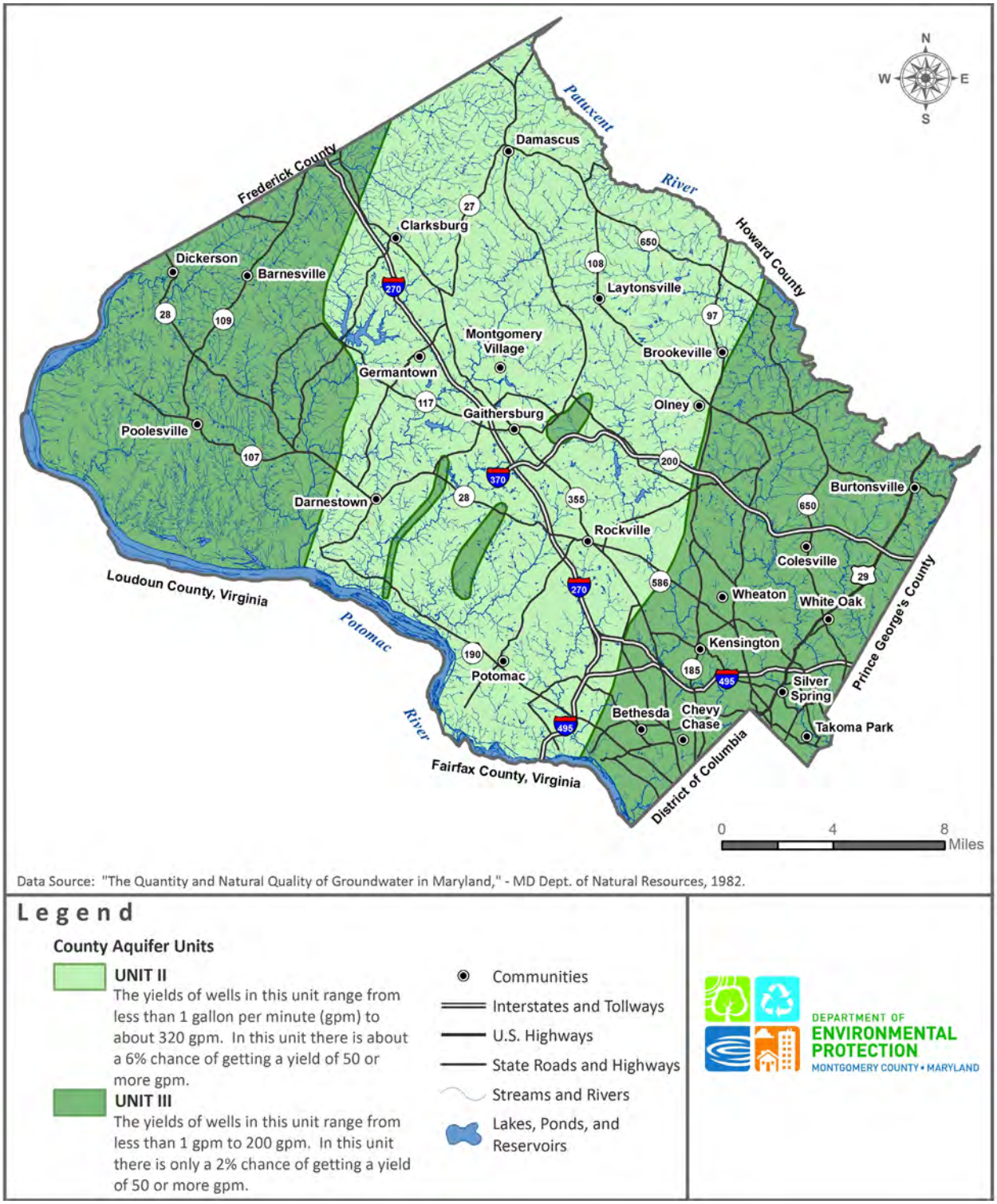
The average annual depth of the groundwater table in Montgomery County varies considerably from place to place, depending on the type of rock, the topographic situation, and the annual rainfall. At an observation well at Fairland, in the Wissahickon schist of the eastern part of the County, the average annual depth to groundwater is between 8 to 10 feet. The comparable depth at an observation well at Damascus in the Ijamsville phyllite and a more rugged topography is 30-45 feet.

In the Manassas (New Oxford) siltstones and sandstones, the water table, as shown in scattered wells, lies about 70-120 feet. However, this formation contains thin, saturated zones five to ten feet thick at lesser depths from which small quantities of water can be obtained. Notably, water at significantly greater depths in the Manassas Formation has been reported adjacent to the Potomac River. However, the water in the ground lies chiefly in a surface zone about 150-250 feet thick.

The U.S. EPA designated parts of Montgomery, Frederick, Howard, and Carroll Counties as the Maryland Piedmont Aquifer. Areas in Montgomery County encompassed in this designation include the following drainage basins: Monocacy River, Little Seneca Creek above its confluence with Great Seneca Creek, and the Patuxent River above its confluence with Cabin Branch Creek. Most of these basins are underlain by the Piedmont's crystalline igneous and metamorphic rocks. However, small areas of Triassic sedimentary rocks are also included along the lower reach of Little Seneca Creek and near Dickerson.

[6] Sources: 1986 Comprehensive Montgomery County Water Supply and Sewerage Systems Plan; U. S. EPA, FR57165-168 (1980), as per the Sole Source Aquifer Program, established under Section 1424(e) of the Safe Drinking Water Act of 1974.

Figure 4.5 County Hydrogeologic Units Map



In February 1998, the U.S. EPA determined that the Poolesville Area Aquifer System "is the sole source or principal source of drinking water for this area and if the aquifer system were contaminated would create a significant hazard to public health." The sole source designation subjects all federally assisted projects to EPA review to ensure that the project's design, construction, and operation will not contaminate the aquifer to create a significant hazard to public health.

E. Wetlands – Regulations regarding the definition of an allowable impact on wetlands continue to evolve. Wetlands are defined by the Planning Board's guidelines of February 1997 for Environmental Management of Development in Montgomery County as "an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation."

Information on the location of major wetland areas in the County is available through National Fish and Wildlife Service maps. The County's Department of Parks and Planning requires more accurate delineations of wetlands by a developer's engineer during the development review process. Federal and state agencies also require this detailed delineation as a part of their wetland permit review processes.

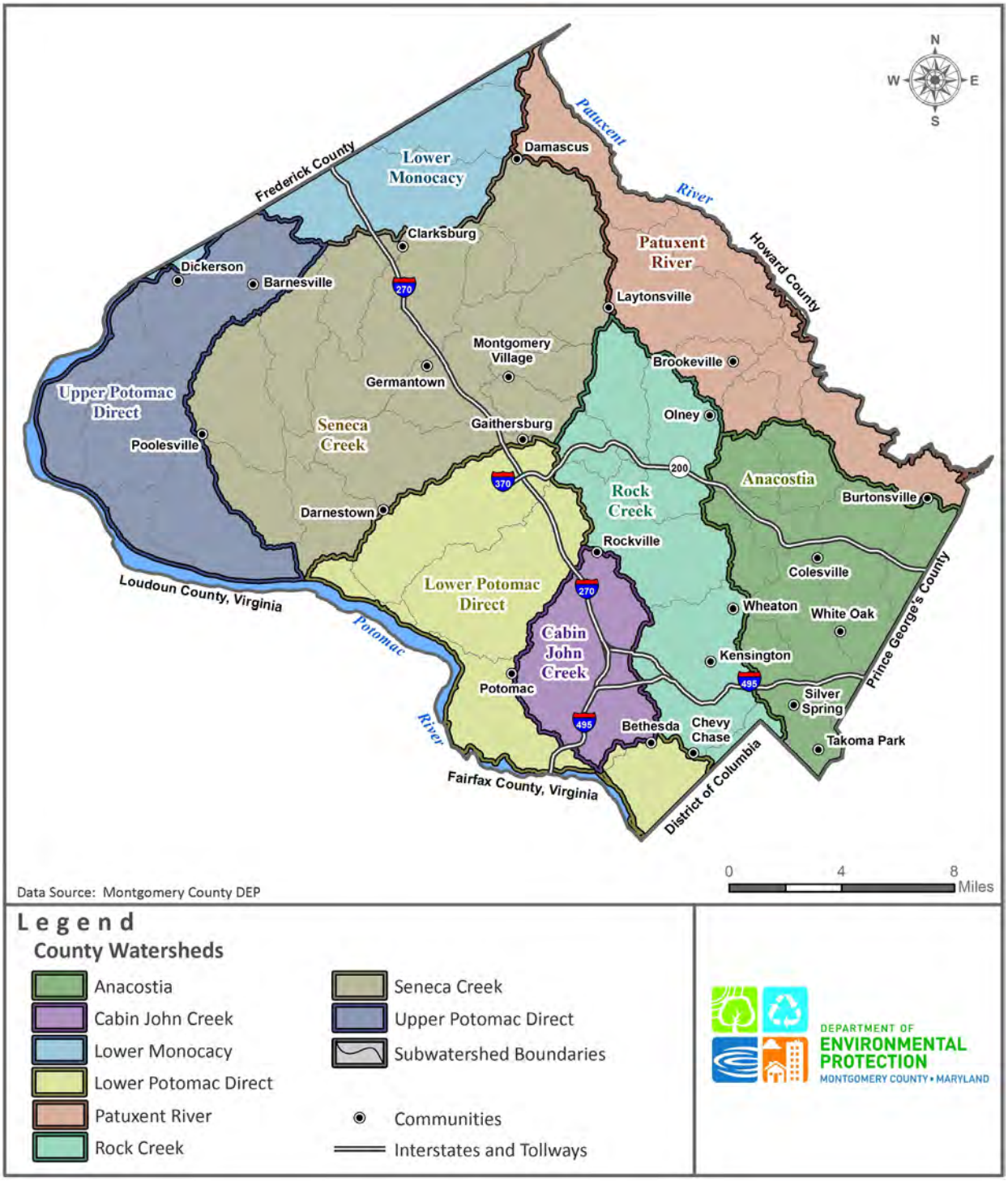
In 1989, the Maryland Department of Natural Resources (DNR) prepared Nontidal Wetland Guidance Maps that showed the relative locations of large nontidal wetlands in Montgomery County. However, as stated in the instructions for using these maps, exact wetland boundaries and locations must be field determined utilizing the guidance provided by the Federal Government. Any new solid waste facility must address current federal and state wetlands requirements.

F. Surface Waters, Floodplains, and Watersheds – The County's rivers, lakes, and streams provide drinking water, recreational opportunities, and wildlife habitat. Most of this surface water comes from naturally occurring run-off from rain and snow. All of the lakes in the County are human-made. The larger lakes were built for flood and sediment control and water supply. Some County waters also receive treated sewage and excess stormwater run-off. Ultimately, all waterways flow into the Chesapeake Bay. The major surface drainage patterns are illustrated in **Figure 4.6**.

The County has 26 drainage basins flowing into four rivers. The County is bordered by two rivers, the Potomac and the Patuxent. Seventy percent of the County drains directly into the Potomac River and its major tributaries. Twelve percent of the County drains to the Anacostia River and then to the Potomac River. Six percent of the County north of Comus Road and MD 121 (east of I-270) drain toward the Monocacy River and onto the Potomac River via Bennett and Little Bennett Creeks. The remaining twelve percent of the County along the Howard County line, northeast of Route 198 and New Hampshire Avenue, drains into the Patuxent River. The roads mentioned above generally follow ridgelines.

Montgomery County Subdivision Regulations prohibit building in a one-hundred-year flood plain, except for certain transportation structures. Flood plains comprise low-lying areas expected to be inundated by floods recurring every 100 years. The Department of Parks and Planning has floodplain maps for most streams in the County. The Federal Emergency Management Agency also publishes maps of flood plain zones for the purposes of federal flood insurance programs. Flood plain location can affect the design of solid waste facilities. Engineering studies to identify the extent of flood plains have been performed for the RRF site and the landfill property currently being held in reserve by the County.

Figure 4.6 Surface Drainage Patterns Map



G. Existing Water Quality Designations – MDE water quality standards identify water use designations for all surface waters in the County. Specific water quality criteria apply to each use designation. The use designation of County surface waters is listed below and shown in **Figure 4.7**.

Use I. Water contact recreation and protection of aquatic life: Waters which are suitable for water contact sports, play, and leisure time activities where the human body may come in direct contact with the surface water; fishing; the growth and propagation of fish (other than trout); Other aquatic life and wildlife; agricultural and industrial water supply.

Use I-P. Water contact recreation, protection of aquatic life, and public water supply: Waters suited for all uses identified in use I and are used as an available water supply.

Use III. Natural trout waters: Waters suitable for the growth and propagation of trout and can support self-sustaining trout populations and their associated food organisms.

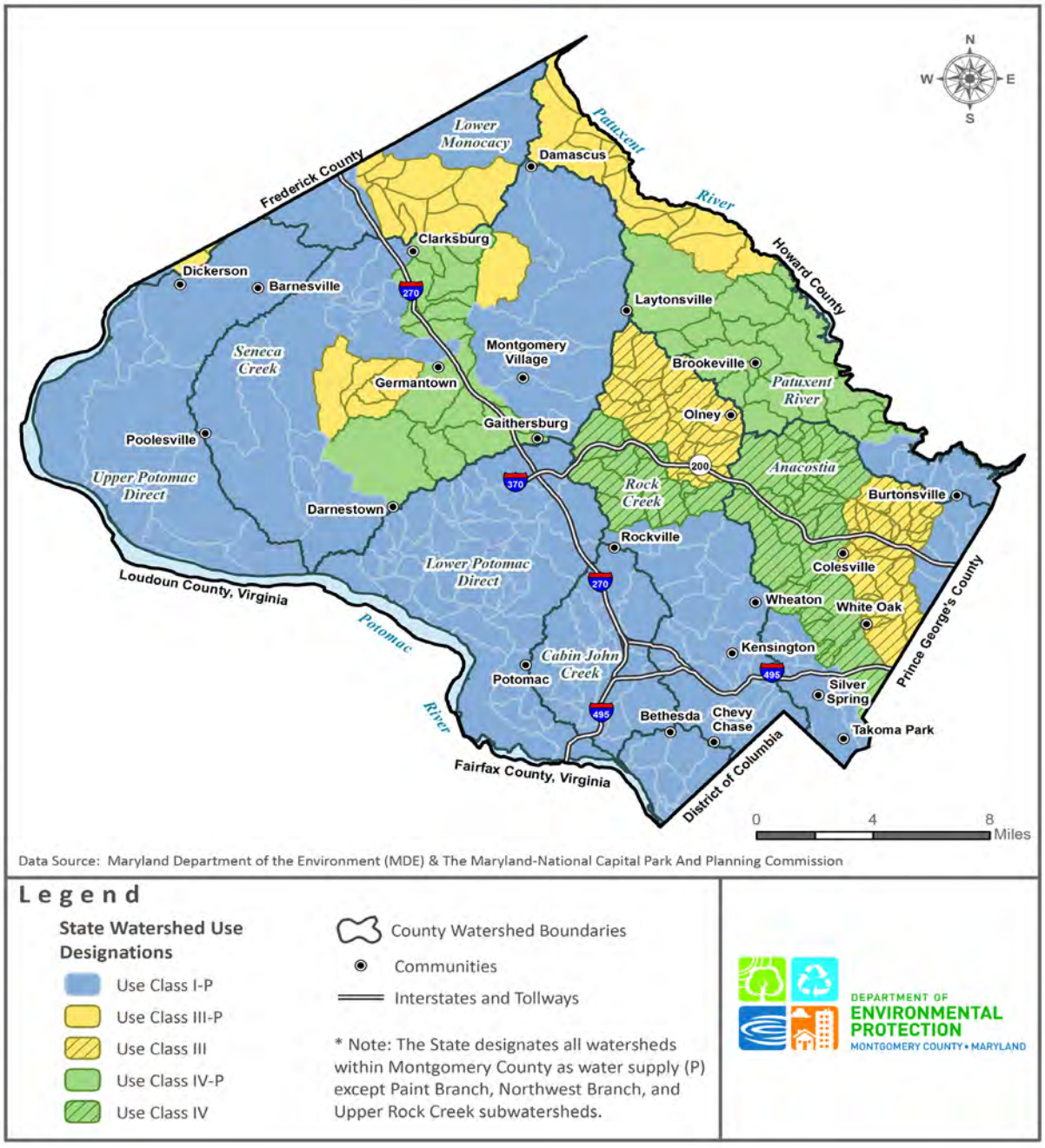
Use III-P. Natural trout waters and public water supply: Waters that include all uses identified for Use III waters are used as a public water supply.

Use IV. Recreational trout waters: Waters that can hold or support adult trout for put-and-take fishing are managed as a special fishery by periodic stocking and seasonal catching (cold or warm waters).

Use IV-P Recreational trout waters and public water supply: Waters that include all uses identified for Use IV waters are used as a public water supply.

Needs Assessment and Plan Direction: Limited sites remain in the County with physical characteristics suitable for developing large new solid waste facilities, particularly landfills. As described in the next section, the land's physical characteristics and previous land development patterns have reduced the availability of in-country locations appropriate for siting large new solid waste facilities. As such, the County has and will consider both in-County and out-of-County alternatives to meet its long-term solid waste facility needs (Chapter 5).

Figure 4.7 County Surface Water Use Designations Map



4.4.2 Land Use Constraints

Current Conditions and Constraints: The County regulates the siting of solid waste facilities through provisions of the SWMP, the County Code (primarily Chapter 48), and the Zoning Ordinance.

The County Zoning Ordinance includes standards for solid waste facilities.[7] The Zoning Ordinance restricts privately owned transfer stations, landfills, incinerators, and recycling facilities to select industrial zones. A privately owned and operated incinerator could be allowed with conditional use approval, subject to the use standards in Section 59.3.6.9.A, in the Industrial Heavy (IH) Zone. A publicly owned/operated solid waste facility would be allowed in any zone as a permitted use.[8]

The Zoning Ordinance limits privately owned transfer stations, landfills, and incinerators to the IH heavy industrial zone. Moreover, these facilities are allowed as conditional uses in the IH zone only if the Hearing Examiner grants approval, determining that the specific IH parcel is suitable for a transfer station, landfill, or incinerator. At present, no privately owned MSW transfer station, landfill, or incinerator has satisfied both local land use requirements and MDE solid waste disposal facility permitting requirements. The County historically has reserved relatively small amounts of land for industrial uses. The creation of new industrially zoned land is unlikely given existing land use patterns as well as County and State land development policies.

The area that was previously classified as Rural Service is now classified as Industrial Moderate (IM). Recycling collection and processing is allowed as a limited use in the IL and IM zones with the following limitations (Section 59.3.6.9.B):

- Recycling of construction and demolition debris is prohibited unless the use was lawfully existing on October 29, 2014.
- The recycling of automobiles is also prohibited.

Finally, recycling collection and processing is a permitted use in the IH Zone.

Given current development and land use patterns, most of the southern and central portions of the County are unavailable for solid waste management uses. Extensive areas throughout the County, primarily along rivers and streams, are dedicated to parks and conservation purposes. A large portion of the northern land area of the County is designated as an Agricultural Reserve, which is intended to preserve farmland and open spaces. The County Yard Trim Composting Facility, the RRF, and the land reserved for a potential future in-county landfill are located within the Agricultural Reserve and in an area identified by the EPA as a Sole Source Aquifer (SSA) system. This designation requires that federally assisted projects in this area

[7] This plan shall not be used to create or enforce local land use and zoning requirements.
[8] See Public Use Section 59-3.4.9 of the County Zoning Ordinance.

are subject to EPA review to ensure that the project's design, construction, and operation will not contaminate the aquifer to create a significant hazard to public health. Although this would not apply to a County financed project, these solid waste processing facilities must comply with State design and permit requirements that provide a high environmental and public health protection standard.

CHAPTER 5
PLAN OF ACTION

This SWMP is a dynamic planning document that the County government may amend in accordance with the requirements of Section 9-503(c) of the Environment Article, Annotated Code of Maryland. Section 9-515(b) of the Environment Article requires the County to review and update the SWMP at least once every three years, according to the MDE established schedule. COMAR 26.03.03 details the scope and content requirements for the Plan.

The mission of the DEP is to enhance the quality of life in our community by protecting and improving Montgomery County's air, water, and land in a sustainable, innovative, inclusive, and industry-leading way while fostering smart growth, a thriving more sustainable economy, and healthy communities. DEP is focused on continuously improving the County's materials management system as part of this mission.

The County is undertaking a robust analysis of alternative options for recycling and managing solid waste materials, expanding current recycling efforts, and developing new recycling and waste diversion programs as part of its ongoing "Aiming for Zero Waste" (AZW) initiative. The intent of the MSW Management System Analysis is to assist the County with achieving the following goals:

- Manage its solid waste materials in an environmentally and socially responsible manner;
- Continue to provide exceptional, reliable, and cost-effective solid waste management and recycling services to the County now and in the future; and
- Modernize and improve our solid waste materials management system.

This analysis will provide the County with the information required to make informed, data-driven decisions to develop and implement a solid waste management system designed to meet the County's needs for the next 20-30 years. The analysis will provide a clear understanding of financial costs, environmental and public health impacts, racial and social justice implications, facility impacts, and operational concerns. Specifically, the analysis will:

- Identify viable alternative solid waste processing technologies in operation in other parts of the County that have a demonstrated successful track record of being effective in diverting materials from residual waste and adaptable to the County's waste processing system. This will also include a cost-benefit analysis of the technology;
- Provide the County with alternative waste processing systems – essentially combinations of the viable processing technologies identified above – from which the County will be able to select a preferred alternative system. This will include a comprehensive analysis of the costs, benefits, and impacts of each alternative system processing system and "end-of-life" disposal methods (i.e., disposal of residual

materials ultimately left in the waste stream following implementation of all diversion programs and technologies); and
- Establish a framework for a future set of procurement solicitations for identified alternative waste processing systems to maximize waste diversion while minimizing the amount of waste that requires disposal, moving the County forward on a path toward zero waste.

In addition to providing a foundation for decision-making on the future of the County's solid waste management system, the MSW Management System Analysis will be used to inform budget and resource planning, procurement strategy, and solicitations. It will also serve as the foundation for any future County SWMP amendments. The County will also inform residents and interested stakeholders of changes and additions to its solid waste management operations.

Chapter 5 – The Plan of Action has seven subsections:

5.1 Aiming for Zero Waste Initiatives
5.2 General Solid Waste Management Policies
5.3 County-Owned Solid Waste Infrastructure
5.4 Potential New County-Owned Infrastructure
5.5 Potential New Private Facilities
5.6 Current Plan of Action for Reduction of Solid Waste Generation and to Maximize Recycling
5.7 Financial Management System

5.1 Aiming for Zero Waste Initiative

5.1.1 Overview

The County is committed to serving as a model for the state and country by continuously improving its solid waste management system. To this end, the County is taking steps to evaluate measures and develop a systematic process to close the RRF and change how the County manages its solid waste and recycling materials through the ongoing efforts of the AZW initiative.

5.1.2 Programs and Projects

The AZW initiative consists of various programs and projects at different stages of development and implementation. The programs and projects encompass waste diversion and reduction considerations, recycling and composting, facility upgrades and operational modifications, education and outreach, and associated policy and programmatic changes. This SWMP is a critical element of the AZW initiative as it provides a foundation for the plan of action over the succeeding 10-year planning period. The current programs and projects of the AZW initiative are summarized below.

- Commercial Food Scraps Recycling Partnership Program
  - The Commercial Food Scraps Recycling Partnership Program was initiated in 2020 and focuses on businesses that generate larger quantities of pre-consumer food scraps to recycle commercial food scraps. Through this program, the County provides technical assistance, training, education, and support to collect, transport, and process food scraps into compost or energy. Becoming a partner allows access to the following resources: food scraps recycling collection carts, compostable liners, limited duration of food scraps recycling collection service, transportation of food scraps to a processing facility, and staff training and educational materials. After a period, the County will assist partners with establishing collection services with private collection providers to continue food scraps recycling.
  - The County plans to continue this program and identify opportunities to enhance its implementation to support food scraps recycling by commercial businesses in the County.
- Residential Food Scraps Pilot Program
  - The Residential Food Scraps Pilot Program was initiated in 2021 and currently services single-family households across three (3) collection routes in Bethesda/ Rockville, Potomac, and Silver Spring. This pilot program is voluntary and requires the resident to register for the program with the County.
  - Food scraps are separated by the resident (i.e., source separated), and a private-sector hauler collects the material curbside with final transport to the Prince George's County Organics Composting Facility.
  - This pilot program was implemented to assess and demonstrate the feasibility of adding curbside food scrap collection county-wide.
  - The County plans to continue this pilot program until the phased implementation of the Save-As-You-Throw Program.
- Save-As-You-Throw Program
  - The County is evaluating the implementation of a Save-As-You-Throw (SAYT) Program that aims for source reduction and increased recycling and waste diversion by providing financial incentives to each single-family household that is served by curbside collection of trash, recycling (dual stream for commingled containers and mixed paper/cardboard), and yard trim recycling. The financial incentive is focused on decreasing trash generation (e.g., source reduction) curbside, which will, in turn, increase recycling and promote source reduction and waste diversion.
  - The program is anticipated to include the co-collection of food scraps and yard trim for single-family households to support the County's existing composting program.
  - The County anticipates a phased implementation of the SAYT Program to address questions and concerns by residents, refine education and outreach materials, and confirm the proper size of new containers for trash, recycling, and the co-collection of food scraps and yard trim to support the future county-wide program.

- Edible Food Recovery Program
  - To strive towards achieving the County's zero waste and climate action goals, DEP has continued its "Food Is Too Good to Waste" education campaign to prevent wasted food. DEP's educational efforts also include recognizing and promoting "Food Waste Prevention Week" each year, as well as collaborating with the County's Edible Food Recovery Working Group and the county-wide Community Food Rescue network. These collaboration efforts aim to develop recommendations and implementation measures to increase edible food donations to those in need.
  - County residents and businesses are encouraged to participate in "Food Waste Prevention Week" by learning about reducing wasted food. This includes:
    - Donating consumable foods to food rescue organizations, food pantries, and shelters;
    - Creating a shopping list and buying only what is needed;
    - Serving smaller portion sizes;
    - Using leftovers in planning future meals; and
    - Storing foods correctly to reduce spoilage and learning more about food expiration dates.
  - The County plans to continue the education campaigns and collaboration efforts with food rescue organizations to address food insecurity throughout the County.
- Organics Management Facility Development
  - The County owns and contracts the operation for their existing MCYTCF. This facility can accept Tier 1 feedstocks that consist of organic plant waste derived from gardening, landscaping, and tree trimming activities, including leaves, garden waste, lawn cuttings (e.g., grasses), weeds, and prunings. Tier 2 feedstocks, such as source-separated organics (e.g., food scraps), cannot currently be accepted at this facility.
  - The development of a County-owned Organics Management Facility that can accept food scraps and non-recyclable/compostable paper will support the SAYT Program, promote waste diversion, recycling, and composting, reduce the amount of waste requiring disposal, and assist with meeting the GHG reduction goals of the County's Climate Action Plan.
  - The County plans to continue evaluating alternative options to develop an Organics Processing Facility that can accept the referenced Tier 1 and Tier 2 feedstocks. The County has an approved Capital Improvement Program budget, and project activities are underway.
- Materials Recovery Facility Upgrades
  - The County currently owns and contracts the operation for its existing MRF, which was constructed in 1991 and received a processing line update in 2002. Given the success of the County's dual-stream recycling program over time and the current longevity of its operation, the existing MRF requires a processing system upgrade for

its commingled containers as well as other building and building system improvements.

- The MRF Upgrades will be designed to allow for more efficient recycling progress to accommodate a more automated commingled processing system, resulting in higher operational run time and throughput, better recovery rates, and higher quality commodities that can receive higher prices in the market. The County has an approved Capital Improvement Program budget, and project activities are underway.

- MSW Management System Analysis
  - The MSW Management System Analysis was initiated in 2023. It will evaluate alternative waste diversion and waste processing technologies that, in combination, will provide for source reduction, increased recycling, enhanced energy production, and decreased residual waste that requires final disposal in landfills. The analysis will include a variety of evaluation factors for proposed MSW management systems that include, but are not limited to: waste diversion potential, GHG emissions, environmental justice and social equity indicators, and life cycle costs, as well as considerations for compatibility with existing County solid waste management facility sites (such as the Transfer Station and RRF).
  - This effort will create a plan to modernize our Solid Waste Management System, making it more efficient and environmentally responsible.
  - The MSW Management System Analysis will provide the County with the information required to make informed, data-driven decisions to develop and implement a solid waste management system designed to meet the County's needs for the next 20-30 years. The analysis will provide a clear understanding of financial costs, environmental and public health impacts, racial and social justice implications, facility impacts, and operational concerns.
  - The MSW Management System Analysis Report is anticipated to be completed in 2025. The analysis will evaluate alternatives to the existing solid waste management system. The analysis will also establish a framework for future procurement solicitations for identified alternative waste processing systems that maximize waste diversion while minimizing the amount of waste that requires disposal.

- Construction and Demolition Debris Recycling
  - To assist with waste diversion and the amount of solid waste received at the Transfer Station, the County is evaluating existing programs, policies, regulations, and partnership structures for local government jurisdictions that have implemented construction and demolition debris recycling programs. The evaluation may also include best management practices or legislation for segregating materials at work sites or the receiving solid waste processing or recycling facility. In addition, modifications to existing County hauler licensing or permitting procedures will be evaluated.

- One additional way for the County to reduce C&D waste, is the Incentive Zoning Density program that allows developers to increase density in the CR and Employment zones by providing public benefits using the optional method of development. The menu of public benefits available for awarding additional density is designed to help the County achieve stated goals, including environmental sustainability. The Planning Department is currently updating the Incentive Density program to align with Thrive Montgomery 2050 and the Climate Action Plan. Among the public benefits that may be accepted for increased density in the updated Incentive Density program are adaptive re-use of buildings, which will reduce waste materials from building demolition, and achieving higher levels of sustainable building certifications such as LEED that require waste reduction actions as part of the rating process.

- Subdistrict B Consolidation
  - The County is divided into two primary areas for curbside collection services, Subdistrict A and Subdistrict B. In Subdistrict A, the County provides trash, dual-stream recycling, and yard trim collection through contracted services with private collectors. In Subdistrict B, the County provides dual-stream recycling collection through contracted services with private collectors.
  - Single-family households, multi-family units, and commercial residential units in Subdistrict B and other municipalities within the County obtain waste collection services through private collectors independently of the County.
  - The County will continue to evaluate the feasibility of expanding trash collection services in Subdistrict B, enabling source reduction and waste diversion programs across a greater geographic area of the County.

To support the AZW initiative, additional programs and projects may be evaluated for implementation over the succeeding 10-year planning period.

5.1.3 Climate Action Plan Reporting

The CAP was developed in 2021 and serves as the County's strategic plan to reduce GHG emissions by 80% by 2027 and 100% by 2035 compared to 2005 levels. The County produces annual reports each year documenting progress towards the various CAP goals. The AZM initiative is anticipated to reduce GHG emissions associated with solid waste management and recycling activities through the implementation of various programs and projects. DEP will submit documentation on the proposed GHG emission reductions associated with AZW programs and projects to support the County's CAP annual reporting.

The Montgomery County Planning Department adopted a protocol for implementing the requirements of Bill 3-22 including a new Quantitative Assessment tool and Climate Assessment Report template. The Quantitative Assessment tool, which has been in use since the spring of 2023, includes estimates of greenhouse gas emissions associated with building waste generated by building construction and waste generated by the occupants of commercial

and residential buildings created by growth within master plan area boundaries. Initial analysis of the Quantitative Tool results indicates that emissions associated with building waste are a significant source of greenhouse gas emissions. The AZW initiative actions outlined in the SWMP should help reduce these emissions.

5.2 General Solid Waste Management Policies

The sustainability principles of the economy, society, and the environment shall guide the County's solid waste management preferences and practices. Actions taken today should be judged as least likely to make life more difficult for future generations. In keeping with this principle, the County adopted the solid waste hierarchy, where waste reduction is the most preferred solid waste management technique, followed by reuse and recycling (including composting).

The County is responsible for building and maintaining solid waste acceptance and disposal facilities primarily to accommodate municipal solid waste generated in the County. The design capacity of the County's solid waste acceptance and disposal facilities was based on the projected volumes of solid waste generated in the County. To conserve capacity, the use of the County's solid waste acceptance and disposal facilities is restricted to solid waste generated in the County.

5.2.1 General Refuse Collection Policy

County Code, Section 48-29, and its implementing regulations establish the entire County as a collection and disposal district. The collection and disposal districts are divided into Subdistrict A and Subdistrict B. Chapter 3 covers the County's recycling and trash collection services. The DEP is evaluating changes in the County-provided trash collection services, including the expansion of trash collection in Subdistrict B and the way trash collection is paid for by single-family homes.

5.2.2 Biosolids Management

Biosolids are nutrient-rich organic materials resulting from the treatment of domestic wastewater treatment facilities. Of all the wastewater generated in Montgomery County, approximately 80% is treated at the Blue Plains WRRF in Washington, DC. The biosolids generated at the Blue Plains treatment facilities undergo an advanced treatment process, producing Class A pathogen-free biosolids that are used as agricultural fertilizer. Only about 20% of the total wastewater generated in the County is treated at local treatment facilities, including Seneca WRRF, Damascus WRRF, Hyattstown WRRF, and the Town of Poolesville WRRF.

However, the current biosolids management practice in Montgomery County is in the process of undergoing major changes. The grand opening of the WSSC Water Bioenergy Project took place on October 30, 2024. A major biosolids processing facility, at its Piscataway WRRF in

Prince George's County. This biosolids processing facility will transform how the biosolids generated from the County's WRRFs are processed and managed. Using advanced technology, the new facility will significantly reduce the amount of biosolids left over from the treatment process, thus reducing costs to haul and dispose of the product. The biosolids produced will be considerably cleaner "Class A" biosolids, making the disposal process much easier and allowing the final product to be distributed and used as fertilizer. WSSC Water will, through this process, generate methane gas that will be cleaned and used to power the plant, reducing WSSC Water's greenhouse gas emissions.

Per and Polyfluoroalkyl substances, or PFAS, often referred to as forever chemicals, are a group of thousands of manmade compounds that have been used in common household and commercial products since the 1940s. They are heat, stain, and water resistant, making them popular additions to cookware, clothing, carpets, cosmetics, and furniture, but they are very hard to degrade naturally. PFAS are everywhere, including inside nearly every person, because of our society's use of PFAS-containing products.

WSSC Water does not produce or use PFAS in its wastewater treatment process. However, due to the continued manufacturing and use of PFAS-laden products, PFAS ends up in the wastewater stream, and eventually in biosolids. Cooking with non-stick cookware, washing water-resistant clothing, or wearing water-resistant cosmetics provides PFAS a path to the wastewater stream. Concentrations of PFAS in wastewater and biosolids tend to reflect the consumer behavior in the surrounding communities. PFAS levels are extremely low in both WSSC Water and DC Water's biosolids compared to other sources of PFAS and exposure pathways, such as direct use of PFAS-containing products. To lower the PFAS levels in biosolids further, WSSC Water is developing a program to prevent the industrial use and discharge of PFAS before it comes to WSSC Water facilities for treatment. WSSC Water is also collaborating regionally and nationally in biosolids research to use the best technologies to detect PFAS and implement best practices.

WSSC Water continues to follow regulatory developments closely and advocates for controlling PFAS at the source, placing the burden of protecting consumers and the environment on those who manufacture or use PFAS products.

5.2.3 Septage Management

Due to concerns about trucks stacking on the public road waiting to unload and the possibility of increased truck traffic from future County's septic regulations, which may require all homes to pump their septic systems more frequently, WSSC Water is in the process of designing an expansion and improvements to the Muddy Branch facility. Construction is expected to begin in Spring 2026.

5.2.4 Hazardous Wastes

The State of Maryland regulates hazardous waste transportation, treatment, storage,

and disposal. As a matter of policy, the County Zoning Ordinance does not permit hazardous waste disposal facilities within the County. The County will continue to provide an environmentally responsible disposal option for household hazardous waste and businesses and institutions that generate small quantities of hazardous waste.

5.2.5 Administration of the Plan

The SWMP, including the Plan of Action presented in this Chapter, is developed and administered by the Director of DEP under the direction of the County Executive. DEP's Recycling and Resource Management Division (RRM) assists the Director in developing the Plan and is responsible for its implementation and management. The RRM Division conducts ongoing solid waste management planning and analysis in response to changes in waste flows, demographics, and economic conditions. The Plan of Action reflects the County's assessment of its current solid waste system and projects the changes and improvements to the system needed over the next ten years. The County Executive and the County Council may alter, extend, or modify the Plan of Action.

Under the direction of the DEP Director, the RRM Division implements all aspects of the SWMP as described herein, including but not limited to:

1. Formulates the County SWMP. As needed, revisions and amendments to the SWMP are developed with recommendations for the County Executive;

2. Conducts research and extensive planning functions to develop and recommend capital improvements and operating budgets to the County Executive;

3. Monitors technical developments and innovations in solid waste management; Conducts research and technical evaluations to determine whether changes, modifications, or adjustments should be pursued to enhance waste efficiency and sustainability;

4. Analyzes, reviews, and identifies potential solid waste management facilities sites and prepares and submits requests for appropriate permits, permit updates, revisions, and modifications;

5. Reviews and comments on solid waste refuse disposal permit applications, modifications, revisions, and amendments for solid waste facilities submitted to the State; and

6. Oversees the design, construction, and operation of solid waste management facilities needed to implement the Plan. These efforts may include the procurement of appropriate investigations and studies, contract development, selection and supervision of contractors, and compliance with local, state, and federal permits.

5.2.6 Coordination

1. M-NCPPC provides requested information regarding population, growth forecasts, planning factors, and other developmental criteria specified by the County Council or County

Executive.

2. MDE implements and enforces State laws in the County and regulates solid waste acceptance and certain recycling/composting facilities.

3. WSSC Water provides requested information regarding engineering, design, present and future capacities, and fiscal elements of biosolids management facilities and programs.

4. Title 26.03.03.02B of COMAR provides that "the Plan includes all, or part of the subsidiary plans of the towns, municipal corporations, sanitary districts, privately owned facilities, and local, state, and federal agencies having existing, planned, or programmed development with the County to the extent that these inclusions shall promote public health, safety, and welfare." The County has approved no subsidiary solid waste management plans for inclusion in this SWMP.

5.2.7 Public Participation

DEP coordinates public participation in solid waste management planning and provides administrative support and information to committees created by the County Council or the County Executive to advise on solid waste issues.

1. Solid Waste Advisory Committee – SWAC is a legislatively created advisory committee comprising 15 voting members and one nonvoting member representing the Maryland National Capital Park and Planning Commission, all appointed by the County Executive and approved by the County Council. The committee membership represents the broad geographic areas of the County, the solid waste industry, businesses, the County Chapter of the Maryland Municipal League, and the public. SWAC members serve three-year terms. The committee is advisory to the County Council and the County Executive on all matters relating to solid waste management within the County.

2. Dickerson Area Facilities Implementation Group – DAFIG is a citizen advisory group created by Council Resolution 13-1498 to advise the County on issues of concern to the community affected by the County's solid waste operations in the Dickerson area. DAFIG consists of 12 voting members appointed by the County Executive and approved by the County Council. The facilities under the purview of the DAFIG include the RRF, the MCYTCF, Site 2 Landfill properties, and properties associated with the original Matthews Farm. It is intended that the DAFIG will be advisory to the County for the life of the facilities at Dickerson.

3. Ad Hoc Committees—From time to time, the County Executive appoints ad hoc committees to address specific issues related to solid waste. Such committees serve at the pleasure of the County Executive and are established to represent particular community interests as the need arises.

4. Public Hearings – The County Council holds a public hearing on the proposed SWMP

and any revision thereof. State law requires a 30-day notice of a public hearing to the WSSC Water and the Planning Department. A ten-day notice of the hearing date must be provided by publication in a newspaper or newspapers of general circulation in Montgomery County.

5. Stakeholders' involvement—DEP regularly engages key stakeholders and the public through stakeholder meetings, working groups, focus groups, online surveys, etc., to present information on existing, expanded, and new solid waste initiatives, programs, and services, obtain input and feedback, assess interest, gather ideas on and garner support for additional strategies to reduce waste, and increase recycling.

6. DEP continues to provide input related to solid waste management to the Climate Workgroup, which is currently working on the Climate Action and Resilience Plan (CARP). Once the CARP is finished, it will help make decisions in this Plan of Action.

5.2.8 Legal Matters

1. County Code Amendments – The Director of DEP, in coordination with the Office of the County Attorney (OCA), prepares and recommends to the County Executive appropriate amendments to Chapter 48 (Solid Wastes) of the Montgomery County Code and other relevant provisions of the County Code.

2. Executive Regulations – In coordination with the OCA, the Director of DEP prepares and recommends to the County Executive regulations appropriate to implement and manage County solid waste programs and policies.

3. County Legislation – The Director of DEP reviews and recommends to the County Executive a response to the County Council on proposed legislation about solid waste management. This response includes testimony to the Council, Council's Transportation & Environment (TE) Committee or other of the six (6) standing committees.

4. Legislative Awareness—The Director of DEP is aware of legislation related to solid waste management under consideration by the State of Maryland Legislature and provides testimony to legislative committees as appropriate.

5. Legal Support – The OCA provides legal advice and assistance in all legal matters related to solid waste management.

6. Regulatory Compliance – DEP and sister agencies work cooperatively to ensure that the County complies with all federal and state regulatory requirements relating to the management of solid waste facilities (Section 1.4 of this Plan).

5.2.9 Solid Waste Data Management and Reporting

The County gathers solid waste data from various sources to determine disposal rates, waste reduction activity, reuse initiatives, recycling rates, and other key measures. Certain solid waste data are readily attainable from in-country sources. Tonnages from County facilities are

available for input into a data management system. For example, the tonnages of MSW processed at the Transfer Station and the recyclables handled at the MRF are weighed and recorded on-site.

Other data points must be determined by less direct means. County Executive Regulation 5-13 AM requires haulers and collectors to report, semiannually, on the amount and disposition of materials collected (i.e., tonnage, by type, and the acceptance facility, including non-County facilities). Reporting required under ER 1 - 15 complements this data and is used to reconcile sector-relative recycling and disposal tonnages. An annual study is conducted to capture additional recycling tonnages, particularly in the commercial sector, which are not captured via any other reporting mechanisms. Specialized studies monitor some minor waste streams that were not reported by the preceding means. Periodically, the DEP analyzes the composition of the disposed waste stream ("Tip and Sort"), involving statistical sampling of the waste delivered for disposal at the Transfer Station. In addition to providing comprehensive support for tracking progress toward the recycling goal and guiding future efforts, these studies also ensure that system benefit charges are properly allocated (see Section 5.7.2).

DEP will report annually to the County Council, typically via the budget process, regarding the status of the County's solid waste management system. Annual reporting will include:

1. The overall County waste diversion and recycling rate calculated on a calendar year basis once approved by MDE will be posted on the DEP website;

2. Progress reports on the implementation of recycling programs, including a description of major initiatives planned for the upcoming year necessary to implement the policies included in this SWMP, which may be included in the Recycling Plan Update. In addition to annual reports, DEP briefs the County Council, as requested, regarding the implementation of this Plan and the operation of the County's solid waste management system.

DEP maintains its detailed solid waste databases, including disposal tons and recycling tons at County facilities and elsewhere, per capita and per employee waste generation rates, waste diversion and recycling rates, source reduction trends, waste stream composition, and per ton waste processing costs. The County will seek to improve data gathering from external sources, particularly regarding refuse and recyclables processed at non-County facilities.

Each calendar year, per County Council Resolution 17-566, DEP calculates its recycling and waste diversion rates according to the Maryland Recycling Act methodology and guidelines. DEP may also calculate recycling progress and achievement using additional indicators.

5.3 County-Owned Solid Waste Infrastructure

As mentioned before, the County is undertaking a robust analysis of alternative options for managing solid waste materials. The analysis of different technologies will focus on those that reduce the residual waste that would need to be disposed of by the County.

This analysis will provide the County with key information needed to make informed, data-driven decisions as it develops and implements its solid waste management system for the next 20-30 years. The analysis will provide a clear understanding of financial costs, environmental and public health impacts, racial and social justice implications, facility impacts, and operational concerns. DEP will create a plan to modernize the County's solid waste management system to be more efficient and environmentally responsible. As a result of those analyses, DEP foresees major changes in how the County manages and processes its solid waste; thus, this SWMP will probably be amended or replaced after the approval of the County Council.

Considering the current planning status, this section describes only the upgrades identified for county-owned facilities and potential new facilities.

5.3.1 Shady Grove Processing Facility and Transfer Station

The Transfer Station serves to receive, process, and transfer MSW. The current operations contract expires on April 1, 2026. The County (pending County Council approval) is executing a short-term extension of the current Service Agreement with Reworld Montgomery under emergency procedures for up to five (5) additional years with the County retaining the right to early termination.

The County's Review of Existing Processing Facilities Report includes several recommended Capital Improvement Projects (CIP). The CIP projects include tipping floor and roof repairs, upgrades to the Recycling Center facility and processing equipment, removal of the existing scale house and construction of a new modular scale house, replacement of the compactors, HVAC systems, an electrical upgrade, and underground piping for the site, implementing new scale systems for the weighing of incoming material, purchasing rolling stock, and replacing rail cars and containers. Future plans at the Transfer Station include:

- With the expansion of diversion and recycling programs proposed in this chapter, the County expects that the average annual tonnage of MSW received at the Transfer Station will not exceed its permit capacity of 821,500 tons.
- Using the Resource Recovery Park (RRP) concept for the public drop-off area expansion, the County will continue to provide receptacles at the Transfer Station for generators to unload self-hauled recyclables, white goods, scrap metal, bikes, textiles, and electronics.
- The County may modify the drop-off services as needed to reflect changes in the collection program or market conditions.
- Maximize the materials sold as mulch to minimize tonnage sent for processing.
- Set yard waste tip fee per Section 5.7.2.
- Evaluate the relocation of yard trimmings grinding operation.

5.3.2 Materials Recovery Facility (MRF) and Mixed Paper Processing Facility

A retrofit of the commingled processing equipment is required, and improvements to the paper processing are needed to process the quantity of material the County intends to receive reliably. The refurbishment projects include:

- New scales that were installed in FY 2022.
- New scale processing and communication system for either attended, unattended, or remote operations of the MRF scales and processing of incoming and outgoing materials and commodities.
- A professional engineering firm has conducted a conditions assessment before progressing to the planning stage of the facility upgrade.
- The MRF electrical service has been inspected as part of the commingled line upgrade, and it has been determined that an increase in service capacity is needed for the new system. This is included in the design's basis and will be included in the MRF upgrade.
- The existing commingled processing line will be removed and replaced with state-of- the-art equipment, including robotic and optical sorting, ballistic sorting, updated screening systems, improved metering of material into the processing system, reduced manual labor, repair, and maintenance costs, as well as changes to process flow to pull glass at the front of the process, increasing the value of recycled commodities sold. The commingled building will be expanded slightly, increasing baled material storage capacity.
- Improvements to sewer service and stormwater system.
- Expansion of paper receiving building.
- Upgrades scanning and screening systems to identify potential radiation material entering the facility.

In May 2021, the County Council approved a capital project to upgrade and increase the MRF's capacity. This facility upgrade project will modernize the equipment processing system for commingled containers and recyclables, improve operational efficiency, and increase the MRF's throughput capacity. Facility design, permitting, and construction for the upgrades are anticipated to occur from FY 2025 to FY 2027.

5.3.3 Yard Trim Composting Facility

An ongoing structural maintenance program will continue at the MCYTCF, including the scheduled replacement of portions of the paved pad and regular inspections and preventative maintenance of its on-site stormwater management system. DEP will strive to increase the market share of finished compost produced at the facility. For the immediate future, DEP will:

- Monitor annual tonnages of yard trim processed at the MCYTCF and sources of that tonnage.

- Continue aggressive promotion, education, and training for grasscycling and backyard or on-site composting.
- Maintain backup contracts for yard trim composting capacity above the facility cap of 77,000 tons per year.
- Contingency contracts may be renewed or replaced from time to time to ensure that there is no lapse in contingency coverage. Contingency contract tonnage for any fiscal year should provide no less than a seven percent surge compared to the most recently completed fiscal year.
- As part of the County's efforts to increase capacity for food waste diversion, the County is considering options for retrofitting the MCYTCF to accept food waste. If pursued, this change would require renegotiating the existing use agreement with the SCA and County Council approval.

5.3.4 Resource Recovery Facility

The County's Resource Recovery Facility is the waste management option for most of its processible waste. As discussed in Section 5.1.1, the County is taking steps to evaluate alternative waste disposal systems. It is implementing a systematic process to close the RRF and change how the County manages materials. The current operations contract expires on April 1, 2026. The County (pending County Council approval) is executing a short-term extension of the current Service Agreement with Reworld Montgomery under emergency procedures for up to five (5) additional years with the County retaining the right to early termination.

As part of its analysis, the County plans to compare the short and long-term costs, environmental and public health impacts, racial equity and social justice implications, facility impacts, operational concerns, and other major issues of keeping the RRF open versus changing the County's primary waste disposal from the RRF to in-County or out-of-County landfilling, combined with other waste processing systems. After the County completes its analysis, it may consider potential amendments to the SWMP regarding the future disposal path for waste.

As the County evaluates options outlined in the finalized Solid Waste Management System Analysis, it will concurrently explore feasible waste diversion and disposal alternatives while advancing efforts toward the closure of the RRF.

Chapter 4 mentions a physical assessment of County-owned facilities, including the RRF. In addition to the improvement projects, DEP will continue:

- To monitor the performance of all contractors related to the operations of the RRF.
- To strive to increase revenues from selling electricity and recovered metals.
- The recycling and beneficial reuse of ash as alternate daily cover, road-based construction material, and other specialized products.
- To continue efforts to recover additional metals from ash.

- To pursue feasible efficiencies in RRF operation and environmental performance.

5.3.5 Out-of-County Landfill Contract / Ash Recycling

DEP will continue utilizing the existing contract for beneficial recycling and reuse of ash while seeking additional and expanded options for reducing the waste stream. As described in Chapter 3, the DEP will also continue to utilize the Reworld Waste (previously Covanta) contract for the disposal of C&D material while seeking diversion and recycling options for the C&D material. The DEP will consider:

- Encouraging the private sector recycling of construction and demolition materials and other non-processible solid waste rather than landfilling.
- Recycling more construction and demolition materials received at the transfer station.
- Continuing to recycle RRF ash.

5.3.6 Solid Waste Transportation System

The solid waste transportation system primarily consists of moving the solid waste from the Transfer Station to the RRF, from the RRF to the out-of-county landfill, and from the Transfer Station to the out-of-county landfill or recycling facilities.

DEP will monitor the performance of all transportation contractors to ensure reliability. DEP will enforce all contractual service standard requirements to ensure reliable and uninterrupted movement of wastes and build contingency capacity to ensure waste transport.

5.3.7 Land Reserved for Potential Future In-County Landfill

The County owns 820 acres of land in Dickerson, Maryland, to serve as a potential future in-county landfill alternative to the RRF and/or a contingency if economic conditions change. This location is along Wasche Road and is known as "Site 2." It has an MDE permit, No. 2019-WMF-0237. The County continues to allow this site to be used for agricultural purposes until a landfill is needed.

The County may commence construction of the landfill at any point after receiving final MDE permits, as it determines that such action is in the interest of public health, safety, and welfare, according to the terms and conditions of the landfill's Refuse Disposal Permit and any applicable court orders or consent orders. This site remains an option for evaluating an alternative for the RRF.

The development of Site 2 has been contested in the past, and in 2002, an order of dismissal regarding the judicial review of MDE Permit No. 1995-WSF-0237-0 was issued. As part of a 1998 letter of understanding, the County agreed to give 12 months' notice of its desire to

construct a landfill at Site 2. Petitioners have 30 days from the date of the County's notice to file a new judicial review of the permit.

5.4 Potential New County-Owned Infrastructure of the Solid Waste System

With the limitations mentioned earlier, the County has identified the need to invest in two new facilities, one to process organic materials and a Resource Recovery Park that could house these facilities and take advantage of efficiencies and economies of scale.

5.4.1 Organics Processing Facility

The County has developed an organics management strategy, but the region's lack of organic processing capacity has hampered its implementation. Given this insufficient regional processing capacity, the County will move forward with plans to process source-separated organic materials (SSO) in-county. An in-county facility presents the best opportunity to increase organics diversion significantly. The technologies available to manage approximately 65,000 tons of food scraps, non-recyclable paper, and the required amendment (e.g., leaf and yard trim) were examined. Based on this evaluation, covered aerated static pile technology was recommended, and further assessment continues.

The County is evaluating different processing technologies and sites as part of the overall evaluation of options. Including but not limited to:

- Modifying operations at the County's existing MCYTCF to manage higher volumes of yard trim and accept SSO (prior County Council approval);
- Siting a processing facility at Site 2 or the Transfer Station (pending consideration of relocation of some of its current operations);
- Acquiring land for the siting of a processing facility or
- Issuing a Request for Proposal for a private-sector project developer who could develop an organics facility on private or County-owned land through a procurement process such as a Design/Build/Operate (DBO), Design/Build/Operate/ Maintain (DBOM), or some variation thereof.

Some of the benefits of developing a County-owned Organics Processing Facility include:

- Providing County control of processing and operations;
- Reducing risk related to final material end use;
- Ensuring adequate processing capacity to meet County needs and support waste diversion goals and programs;
- Generating revenue from compost and electricity sales;
- Reducing hauling distances; and

- Lowering GHG emissions in comparison to landfill disposal.

5.4.2 Resource Recovery Park

The County's Shady Grove Processing Facility and Transfer Station site, including its public drop-off areas for recyclable and reuse materials, can be considered a resource recovery park that provides several functions within a very constrained space. This facility will be more difficult to operate as new stations are added to expand the County's recycling options. As the County moves forward with plans to develop new infrastructure, it may be possible to site these residential recycling stations at a new location and develop a new resource recovery park. This recovery park will relieve the strain on the Transfer Station site.

The County is evaluating the siting of multiple facilities on one site. This facility could co-house processing facilities to provide a network of facilities to develop innovations in waste processing and develop circular economy opportunities. Benefits of developing a Resource Recovery Park include:

- Co-locating facilities can provide efficiencies in collection, transport, and processing;
- Would minimize nuisance impacts as facilities would be consolidated;
- Capability to create an education center where training opportunities would be housed;
- May allow for new facilities such as reuse centers or other drop-off facilities;
- Potential to develop an "innovation" park to create new markets and products; and,
- Contribute to a circular economy.

5.5 Potential New Private Facilities

5.5.1 In-County Infrastructure

Private persons who wish to operate solid waste disposal facilities in the County may only do so with a State solid waste disposal permit. The State will only issue a permit if the site is consistent with this SWMP.

Concerning private sites:

1. The County will review and comment on solid waste disposal permit applications submitted to the State; the site and any facility on the site must comply with all County laws and with relevant parts of this SWMP.

2. As part of its review of permit applications, the County will designate materials that private facilities can process. These designations will be made at the time of application according to public solid waste flow control needs and may change from application to application.

3. When a property owner applies for a State solid waste refuse disposal permit, the County will review the permit application following Section 9-210 of the Environment Article to determine the proposed private facility's conformity with County land use, zoning, and solid waste laws, regulations, and plans.

4. The County Zoning Ordinance limits privately owned transfer stations, landfills, and incinerators to the IH heavy industrial zone. These facilities are permitted in the IH zone only if the County Board of Appeals grants a special exception, determining that the specific IH parcel is suitable for a transfer station, landfill, or incinerator following the standards outlined in the Zoning Ordinance. The Zoning Ordinance allows the construction of a recycling facility in a Rural Service Zone if the facility meets special development standards outlined in Chapter 59, Section 3.6.9 of the County Zoning Ordinance. This section of the County Zoning Ordinance covers minimum standards for lot size, road frontage, distance to an interstate interchange, building setback, and on-site screening and landscaping. This section also requires the facility to have a construction debris recycling permit that satisfies the materials handling and reporting requirements. The Zoning Ordinance allows private recycling facilities in select industrial zones.

5. DEP will explore the interests and roadblocks to the private sector's development of nearby recycling facilities for materials such as yard trim and food scraps. DEP will also continue to review and possibly modify existing regulations to promote expanding the private recycling infrastructure within the County.

6. C&D Recovery, located at 24120 Frederick Rd, Clarksburg, is expected to continue to serve C&D generators during the planning period.

7. The state has permitted a new Tier 2 composting facility, Compost Crew, at Wasche Farm in the Dickerson area, with a planned capacity of 20,000 tons per year.

8. There are two other composting yard trimming facilities in the County: ACME Biomass Reduction Inc., located in Brookville, and Aspen Nursery Facility, located in Silver Spring. They have a capacity of 19,000 tons per year and 1,250 tons per year, respectively.

5.5.2 Out-of-County Infrastructure

There are many other options outside the County where collectors may choose to take C&D and MSW. Other privately owned facilities outside Montgomery County accept land clearing, hazardous wastes, medical wastes, dead animals, automobiles, and tires.

In CY2022, a small fraction (74,000 tons) of MSW was managed by private facilities. As detailed in Chapter 3, in the same calendar year, private facilities handled 50% of the rubble, land clearing, and C&D generated in the County.

Concerning the food scraps processing facility, organic materials generated in the County

have been sent mainly to three (3) Maryland facilities: Prince George's County Organics Compost Facility, Veteran Compost, and recently, Bioenergy Devco.

The Prince George's County Organics Compost Facility is in Upper Marlboro, Maryland. This 16-acre facility utilizes a Cover Aerated Static Pile System. It has a permitted capacity to process 69,000 tons of organic materials per year. The finished product from residential food scraps and yard trim is marketed under the brand Leafgro GOLD® by MES. It is available as a finished compost product primarily in bulk markets. Bulk compost sales include up to 5 cubic yards to residents available at the County facility. The facility also produces Leafgro® from grass clippings and leaves through windrowing.

Veteran Compost, located in Aberdeen, Maryland, is a Tier II small food scraps/manure and wood chips processing facility with a permitted capacity to process 24,000 tons of organic materials per year. It is a privately and veteran-owned company that produces compost from residential and commercial food scraps and wood chips, processed via vermicomposting or aerated static piles systems. Finished compost products are typically sold for bulk pickup, but bagged products are available for nationwide shipping. Veteran Compost has another Tier II small food scraps, manure, and wood chips permitted facility in Anne Arundel, Maryland, with a planned capacity of 24,000 tons per year.

In 2021, Bioenergy Devco opened its door as the newest organics recycling facility in Maryland on the Maryland Food Center campus in Jessup. It is the first anaerobic digester of its scale in the state. The facility can recycle 110,000 tons per year of organics to produce approximately 312,000 MMBtu of renewable natural gas for energy and 16,575 tons of soil amendment for agricultural and other land use. The County has sent some food scraps collected from the commercial food scraps program to this facility.

5.5.3 Potential Regional Facilities

While the County is not currently considering the development of a Regional Facility, this may be considered in the future. Collaborating with nearby municipalities to investigate the feasibility of developing a Regional Organics Facility or other facility to provide additional regional processing capacity may be considered.

5.6 Current Plan of Action for Reduction of Solid Waste Generation and Maximize Recycling

The residents and businesses of Montgomery County have achieved a recycling rate of approximately 40% and a waste diversion rate of 45% in CY 2022. This section describes the mechanisms for managing each waste stream identified in COMAR 26.03.03.03 §D(1). **Table 5.1** summarizes whether there are changes and, if so, the section on this SWMP where the changes are addressed.

Table 5.1 Mechanism for Managing the Waste Stream according to 26.03.03.03 §D(1)

Waste Category 26.00.01	Plan of Action Section #
MSW Residential	5.6
MSW Commercial	5.6
Industrial (solids, liquid, etc.)	No changes
Institutional (schools, hospitals, etc.)	No changes
Land clearing and demolition debris (rubble)	5.1.2 Page 5-7
Controlled hazardous substance (CHS)	No changes
Dead animals	No changes
Bulky or special wastes	No changes
Vehicle tires	No changes
Wastewater treatment plant sludges	5.2.2 Page 5-7
Septage	5.2.3 Page 5-8
Asbestos	No changes
Concrete/Brick	No changes
Special medical waste	No changes
Household Hazardous Waste & Eco-Wise	No changes
Soil	No changes
Wood waste	No changes
Paint	No changes

To manage the above waste streams, DEP will continue with the efforts described in Chapters 3 and 4 of this SWMP and enhance them as follows:

5.6.1 Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery (County Bill 28-16)

Continue developing, implementing, and managing initiatives, programs, and recommendations of the Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery.

Reducing or eliminating the amount of food being wasted is the most effective and highest-priority waste management tool. Increasing the amount of food scraps separated from other waste and recycled is critical to reaching the County's goal of zero waste. The Strategic

Plan provides a framework for the six (6) focus areas described below. Implementation plans have been or are to be developed for each focus area:

1. **Reducing Wasted Food/Channeling Food to Others:** Expanded and targeted education of donors to understand what is "acceptable" in donating foods to others can reduce the amount of food wasted and disposed of as trash. The County works to decrease the amount of food thrown away and address food insecurity through efforts such as:

- Educating food producers, wholesalers, and retailers on managing food to reduce the amount of leftover food waste created. The Strategic Plan provides the direction, framework, and strategies for reducing food waste to balance food production with food demand.
- Providing food that would otherwise be wasted to food assistance organizations that serve people in need and expanding the education of donors to understand what is "acceptable" in donating food to others.

2. **In-Home, Backyard, and Community-Scale Composting**: The County developed and implemented a program to test and evaluate the effectiveness of rodentproof backyard compost bins for residents to compost food scraps in their backyards. The County is also working to reduce the volume of food scraps currently disposed of through increasing at- home, backyard, and community-scale composting programs.

3. **On-Site Institutional and On-Site Business Composting:** DEP has identified several businesses and organizations with on-site composting programs for food scraps and/or other organic materials recycled on-site. DEP supports expanding on-site composting at businesses, commercial properties, and certain multi-family properties to manage materials at the source and minimize the amount of food scraps requiring preparation, collection, transport, handling and entering the County's solid waste stream.

4. **On-Farm Composting:** DEP works with the County's Office of Agriculture Services to support and promote properly managed on-farm composting to reduce the volume of food scraps entering the County's solid waste stream.

5. **Composting Capacity to Serve Montgomery County and Recycling of Food Scraps in the Commercial Sector:** More recently, processing facilities in the regional market have increased the availability of food scraps to be accepted and processed for recycling. DEP has secured limited capacity at a food scraps composting facility, the Prince George's County Organics Compost Facility in Upper Marlboro, Maryland. DEP has implemented its Commercial Food Scraps Recycling Partnership Program, through which DEP offers stable food scraps recycling capacity to large generators of food scraps in Montgomery County and provides technical assistance, as well as financial and other incentives to expand the number of County businesses that implement programs to source separate their food scraps for recycling. These businesses

continue their efforts to recycle food scraps by securing food scraps recycling collection services from various other service providers. At the same time, DEP is encouraging the development and expansion of processing facilities to increase capacity for additional tonnages of food scraps for recycling.

6. Strategies to Maximize Food Scraps Collection at the Curb: DEP began its pilot program in CY 2022 to provide single-family residential curbside recycling collection of food scraps and other acceptable organic material in three areas of the County. Two are within Subdistrict A, and the other is in Subdistrict B. DEP contracted out a food scraps recycling collector to collect the food scraps and deliver them to the Prince George's County Organics Compost Facility for processing. Data is collected from each household and from the facility's scale when loads of material are delivered to provide the weights of food scraps recycled. In addition, participant surveys have been conducted every three months to obtain feedback and input. DEP also performs focus group research with pilot participants after a 12-month duration for general feedback on the pilot program, to examine program participants' perceived advantages (drivers) and disadvantages (barriers) to participating, to obtain feedback on specific program elements (e.g., the starter kit provided to participants, containers, etc.), and to evaluate the educational and instructional materials DEP developed for the program. All data, information, and feedback will be used as DEP plans for the future Countywide program for all approximately 220,000 single-family homes.

Food Scraps Recycling Program: When adequate recycling processing capacity is achieved, DEP will continue developing, proposing, and implementing mandatory food scraps recycling requirements.

DEP will continue to offer year-round farmers' drop off locations strategically located throughout the County where residents may drop off their food scraps for recycling during an established schedule.

5.6.2 Reduction and Reuse

1. Create Fix-It/Repair Clinics: DEP will develop initiatives to divert things away from the waste stream and foster the reuse of items and materials from single-family and multi-family residents by researching, developing, planning, coordinating, and implementing fix-it and repair clinics (providing education, training, coaching, and hands-on guidance) for items such as clothing, small household appliances, electronics, mobile devices, and other household goods.

2. Materials Exchange Programs: DEP will create materials exchange programs to increase the exchange of excess materials from businesses/organizations or individuals with those needing a supply of these excess materials.

- Research, development, and planning, including identification of a suitable location for a warehouse for storage of materials to be exchanged; staffing storage warehouse; coordinating delivery and pick-up of materials for exchange; program monitoring and data collection.
- Another potential initiative is to create and implement a virtual or online materials exchange program via the website to facilitate direct exchange of materials between parties (donors of excess materials and users in search of materials).

3. Sharing/Lending Libraries: DEP will develop sharing or lending libraries for single-family and multi-family residents to borrow, use, and return items that may be useful temporarily but not so often used as to warrant permanent purchase, such as tools, lawnmowers, etc., to help residents reduce waste.

5.6.3 Supporting Waste Reduction, Reuse, and Recycling

1. Continue to provide education, outreach, training, technical assistance, and guidance to single-family and multi-family residents, multi-family property owners, managers, condominium and common ownership community boards, and businesses, including business owners, managers, commercial property owners, property management companies, employees, commercial janitorial and building service providers, and refuse and recycling collection companies to increase further participation in waste reduction, reuse, recycling, and buying recycled programs.

2. Continue to provide comprehensive outreach, education, training, technical assistance, and site-specific recommendations to businesses and multi-family properties to implement, improve, and expand on-site recycling programs using on-site visits by County staff.

3. The County plans to develop and implement an educational campaign to further corrugated cardboard recycling in CY 2025.

4. Expand efforts to implement cooperative recycling and refuse collection programs among businesses in the Central Business Districts. Data has shown that when businesses that generate similar types of waste contract their recycling and refuse collection services with one collection service provider and share a common set of recycling and refuse collection containers, the businesses increase the number of materials they recycle and the quantity. Due to collection efficiencies, most participating businesses experienced decreased monthly recycling and refuse collection service costs.

5. New Education Methods: DEP continues to appraise the effectiveness of alternative education and outreach strategies and focus its efforts on initiatives that are quantifiably demonstrated to have a measurable positive effect on recycling performance. DEP develops the County Executive's annual operating budget submission for recycling programs based on

findings of participation studies, focus groups, surveys, and other means used to evaluate the effectiveness of alternative techniques. These findings justify and support the specific outreach, education, training, and technical assistance proposed for funding in the upcoming fiscal year.

6. Mixed-Use Development Recycling Guidelines: DEP is performing research, benchmarking, and evaluating and will work with stakeholders to develop and potentially recommend guidelines for meeting recycling and solid waste management requirements in mixed-use developments.

7. Continue supporting the Montgomery County Public Schools SERT team to implement and improve recycling in Public Schools, according to 3.3 of this SWMP.

8. Continue supporting private educational institutions throughout the County to implement, maintain, and improve recycling in private schools.

9. The State "Recycling- Apartment Buildings and Condominiums (2012) Act". Montgomery County intends to continue its current multi-family recycling program, which complies with this Act, as described in Section 3.3 of this SWMP.

10. Consistent with State Bill SB370, Environment – Recycling Office Buildings, the County will continue implementing the Recycling Plan for Office Buildings.

5.6.4 Regulatory Options to Encourage Waste Reduction and Reuse

1. Extended Producer Responsibility Regulations: DEP will continue to research, benchmark, and evaluate the feasibility of developing, proposing, and implementing extended producer responsibility requirements on manufacturers of items or materials (particularly ones that are challenging to manage) to implement sustainable management of these items or materials for proper recycling, reuse or disposal using methods not dependent on local government.

2. Material Disposal Bans: DEP continues to assess materials to potentially develop, recommend, and implement new/enhanced regulations, legislation, and procedures to increase waste reduction, reuse, and recycling in the single-family, multi-family, and commercial sectors by developing and proposing additional materials banned from disposal (such as food scraps when adequate recycling processing capacity exists).

3. Continue to develop, recommend, and implement new/enhanced/expanded regulations to increase recycling in the single-family, multi-family, and commercial sectors with additional materials mandated for recycling.

4. Continue dedicated enforcement of the County's recycling regulation, Montgomery County Executive Regulation 1- 15, as it pertains to businesses and multi-family properties by

thoroughly investigating cases of non-compliance and judiciously using progressively stronger enforcement techniques.

5. Continue dedicated enforcement of the County's companion recycling regulation, ER 18-04, which requires haulers and collectors of solid waste, together with ER 1-15, which implements the County's ban on disposal of targeted and mandated recyclables.

6. Continue dedicated enforcement of the County's legislative bans on the use, provision, or sale of polystyrene food service ware and requirements to use reusable, compostable, or recyclable alternatives instead.

5.6.5 Recycling Other Materials

1. Target Additional Materials for Reuse: As opportunities arise, the County will target additional types of materials for reuse programs. The County will refine waste generation and waste reduction measurement techniques, document the results of waste reduction activities, and develop cost/benefit assessments for new waste reduction initiatives. The County will continue to work cooperatively with regional organizations to promote waste reduction, including supporting legislative initiatives.

2. Target Additional Materials for Recycling: The DEP will continue to explore any practical opportunity to expand the range of material types that can be recycled, whether by collection, drop-off, or special events. The DEP may look for opportunities to develop new cost-effective programs for materials that are currently recyclable but are relatively small components of the waste stream.

3. Montgomery County accepts and recycles all types of plastic bottles, jars, containers, tubs, lids, caps, buckets, flowerpots, clamshell containers, durable and reusable containers, and more. #6 Expanded polystyrene and rigid polystyrene food service ware items are not recyclable in the County, and the use, provision, and sale of these items are prohibited. The markets for plastic bags, film, and wraps require that these items be clean, dry, and free from contamination, thereby making it impractical to collect plastic bags, film, and wraps via the County's curbside recycling program. However, there is strong market demand for clean and dry plastic bags, film, and wraps through participation in drop-off collection programs. These drop-off programs, located at most grocery and some retail locations in the County, offer residents convenient access to recycle a wide variety of plastic bags, film, and wraps when going on a return shopping trip to a store. Additionally, Montgomery County has implemented a drop-off program for plastic bags, films and wraps at the Transfer Station, serving as another outlet for residents to conveniently drop off these items for recycling. The County will continue to promote these drop-off collection programs and provide information on the County's website, through social media, and through direct notification. Also, the County will continue to work with grocery stores and other retailers to promote film plastic recycling via this route.

- Plastic film/plastic bag recycling programs for single-family, multi-family, and commercial sectors
- Bulky rigid plastics curbside recycling collection pilot program for single-family residents

4. Evaluate opportunities to establish recycling and waste diversion programs for construction and demolition materials for commercial and residential sectors and coordinate with other County agencies, including the Department of Permitting Services, to develop regulations/requirements to facilitate reuse/recycling of building materials

5. Evaluate textiles/clothing curbside recycling collection pilot program for single-family residents.

6. Evaluate carpet and carpet padding recycling program for all sectors.

7. Mattresses and box springs are accepted for recycling at the Transfer Station. Education is provided through various channels, including website promotion, social media, community events and meetings, etc. The County will continue to promote the recycling of mattresses and box springs to residents, businesses, property owners, and managers of multi-family properties.

5.6.6 Responsible Management of Materials - Collection Enhancements

1. The SAYT Program for single-family homes: DEP will implement a phased program to roll out SAYT Countywide, projecting the impacts on waste reduction and increased recycling, as well as changes in the System Benefit Charge to address how property owners pay for collection services.

2. Responsible management of materials - Collection Enhancements. DEP will assess the provision of refuse collection services to households in Sub-district B receiving only County-provided recyclable, scrap metal, and yard trim recycling to increase efficiency and safety, reduce traffic, and encourage increased recycling.

5.7 Financial Management System

The general expense and revenue information that shapes the County's fiscal policy for the SWMP may be found in the Public Services Program (PSP)/Operating Budget and Capital Improvements Program (CIP)/Capital Budget. In conjunction with the annual budget preparation, DEP will prepare data and analysis detailing the current and projected six-year expenses and revenues (if applicable) of each solid waste management program. DEP also will provide long-term projections regarding the revenues collected for solid waste programs and the fees necessary to support the program(s). DEP may calculate the average unit cost and/or marginal cost of other solid waste programs proposed by the County Executive. These documents will be available at County public libraries and the DEP offices. The Solid Waste Enterprise Fund is self-supporting through user fees and receives no financial support from the

County's General Fund.

5.7.1 Budgeting

Budget Preparation

The County Executive is responsible for preparing the annual budget and its amendments for submission to the County Council for appropriate action. The Office of Management and Budget assists the County Executive and the Chief Administrative Officer with all budget matters, research, program evaluation, and other related matters. The County Executive transmits the annual operating budget to the County Council on or about March 15th each year.

The Director of DEP prepares and submits to the County Executive a recommended budget for operations and capital improvements and requests for supplemental appropriations, as needed, related to the integrated solid waste management system. The budget is developed to create flexibility to make decisions regarding expenses, revenues, and user fees that fund the operating and CIP budgets for solid waste management operations and programs.

Biosolids Management Budget Preparation

DEP reviews WSSC Water's budget requests related to the County's solid waste management activities and makes appropriate recommendations to the County Executive.

5.7.2 Solid Waste Revenue Sources

Chapter 48 of the Montgomery County Code, Article IV Solid Waste Fund, governs the County's solid waste management system and establishes the Solid Waste Enterprise Fund. Section 48-43 specifically requires separate subsidiary funds for the refuse collection and disposal operating activities. The activities in each subsidiary fund are self-supporting, with revenues covering expenses; hence, it requires that the County at least annually set charges for solid waste services to equal expenses.

The Solid Waste Act adopted the Master Authorization (MA) according to the provisions outlined in (Article II, Section 2.1). The MA is a contract between the County, bondholders, and long-term contract holders. The bondholders and long-term contract holders rely on the MA because it assures them that appropriate policies and procedures are in place to guarantee that there will be a sufficient flow of funds to repay bondholders and contract holders for the duration of the bonds and contracts.

The County funds its solid waste system primarily by employing four revenue streams: (1) tipping fees (disposal fees), (2) systems benefit charges, (3) refuse collection and leaf vacuuming charges, (4) revenues and credits from the sale of recyclables, and compost and

electricity.

Revenues from these sources provide an adequate and reliable funding source to finance County solid waste programs, including all recycling services. Revenues raised from the four sources above go directly into an independent, legislatively established Solid Waste Enterprise Fund that exclusively finances County solid waste programs.

Tipping Fees

The County charges separate per-ton fees ($/ton "refuse tipping fees") for accepting MSW and C&D material (charged for waste delivered in open- top roll-off boxes). A distinct tipping fee is also set for accepting yard waste. All tipping fees are set by the County Council and calculated to ensure full recovery of County solid waste system costs and all other revenue sources. Within these constraints, the tipping fees can also be set to influence behavior through incentives. The tipping fee is used as the County's "economic flow control" for waste generated in the County that is delivered to the Transfer Station for disposal. The system economics considerations factor in the impact of MSW and C&D material delivered to the County's facilities and make the economic outcomes relatively indifferent to the waste management techniques.

The refuse tipping fee is set and periodically adjusted relative to the regional market so that MSW delivered by private haulers to the Transfer Station during the forthcoming year will match, as nearly possible, a target of 85% to 95% of the RRF permit capacity (e.g., 558,450 to 624,150 tons per year based on waste with the design point heating value of 5,500 BTU/pound).

The C&D tipping fee shall be set at a minimum to fully cover the County's cost of handling this special type of waste but shall be set at a higher rate than the refuse tipping fee to reflect the County's preference to use the RRF for processing MSW. Material brought to the Transfer Station in open-top roll-off boxes is identified as C&D and charged a higher fee. Finally, the refuse and C&D tipping fees shall be at least to reasonably assure that combined deliveries to the County are within the 821,500 tons per year annual limitation of the Transfer Station's refuse disposal permit.

Fluctuations in the economy affect overall waste generation. Relative changes in the use of regional disposal options by private collectors and changes in recycling performance by all sectors will continue to affect the amount of MSW delivered to the County for disposal in any year. Influences beyond the County's direct control include pre-existing private sector disposal contracts at regional facilities and regional pricing pressures. These, in particular, can affect response time (i.e., the time it takes for the market to respond to a revised County tip fee).

Accordingly, DEP will deploy, develop, and maintain contingency plans and operational capacity that can be used in conjunction with refuse and C&D tipping fee adjustments to manage the amounts of incoming MSW and C&D. The contingency plans may include a

controlled bypass of processible waste while tipping fee adjustments take effect.

Tip fees for refuse from non-municipal, single-family residences, and multi-family dwellings in buildings comprising six or fewer dwelling units are collected on the tax bill as disposal fees (prepaid tip fees). This is a fee for service and not a tax. The hauler cannot collect this fee from the resident since it has been prepaid. All other tipping fees are charged as waste is delivered at the Transfer Station.

Systems Benefit Charges

Systems benefit charges are imposed on residential and non-residential generators of solid waste and can include both a base charge and an incremental charge. Base systems benefit charges, after offsets from tip and disposal fees cover all or a portion of the cost of developing and maintaining the basic programs and facilities necessary to fulfill the County's obligation to provide for the management of solid waste generated within the County. Revenues from base systems benefit charges and refuse tip and disposal fees provide for all system costs not covered by another fee. These costs include system administration, waste reduction programs, debt service on existing facilities, and the fixed cost of disposal programs and facilities.

The County Council annually establishes system benefit charge rates and tip fees at a level necessary to raise sufficient revenues to fund County Council-approved solid waste activities and system expenses. Base system benefits charges are derived by allocating revenue generation requirements among the single-family, multi-family, and non-residential sectors in proportion to each sector's contribution to overall County waste generation. Base system benefit charges are calculated by dividing the total base system benefit charge revenue generation required from each sector, less tip fee offsets from that sector, by the total number of billable units in that sector.

From the non-residential sector, the County may charge and collect the required base and incremental systems benefit charges by various means. Currently, the County establishes, under County Executive Regulation 9-99 (which can be amended without amending this Plan), non-residential system benefit charges which vary from property to property according to (1) the average waste generation rate for different non-residential land use categories; and (2) the property's improved gross floor area (measured by 2,000 square foot units). There are five categories of non-residential generators, ranging from low to high. Non-residential solid waste generators in specific land uses are categorized into a generator category based on waste generation studies. The charge for a generator is then multiplied by the number of 2,000 square foot units attributable to that generator.

Incremental system benefit charges cover all or a portion of incremental services received by some, but not all, generators of solid waste. Incremental system benefit charges are assessed to each generating sector (single-family residential, multi-family residential, and

non- residential) for services provided specifically to that sector. For example, each single-family household (in unincorporated areas of the County) that receives curbside recycling services is charged for its share of curbside recycling program costs. Incremental system benefit charges for the multi-family residential and non-residential sectors cover educational, enforcement, and outreach services provided directly for the benefit of each of those two sectors.

Refuse Collection and Leaf Vacuuming Charges

The County has separate revenue streams to fund the refuse collection and leaf vacuuming services. Single-family residences within the Solid Waste Collection District of the County have assessed charges to cover the costs of refuse collection services. Single-family and multi-family homes within the Leaf Recycling Service Area of the County have assessed charges to cover the costs of leaf vacuuming services.

Revenues and Credits

The County Solid Waste Enterprise Fund receives revenue from various sources, including but not limited to the following: 1. The sale of recyclable materials recovered from the Recycling Center and Transfer Station at the Shady Grove Complex in Derwood, Maryland; 2. The interest earned on any reserves held by County Finance on behalf of the Solid Waste Enterprise Funds; and 3. Small amounts of revenues from miscellaneous sources such as license fees, sale from disposal of equipment, and rent.

It should be mentioned that the system benefit charges, Refuse Collection Fees, and Leaf Vacuuming Fees discussed above are calculated net of all projected revenues and yet fully fund the operating budgets following the Rate Covenants of the Master Authorization and Chapter 48 of the County Code.

Additionally, the County receives economic credit (in the form of reduced operating costs paid to contractors) from the sale of electricity and ferrous metals at the RRF, the sales of compost products produced at the MCYTCF, and from the mulch produced by grinding brush and natural wood waste at the Transfer Station. Revenues are also derived from interest earned on any reserves held by County Finance on behalf of the Solid Waste Enterprise Funds. Finally, minor amounts of revenues are derived from miscellaneous sources such as license fees and rent. Annually recommended system benefit charges, Refuse Collection, and Leaf Vacuuming Fees discussed above are calculated net of all projected revenues.

5.7.3 Biosolids Management Revenue Sources

WSSC Water funds biosolids management through wastewater treatment and water supply user fees.

5.7.4 Financial Management System

Annually, the system benefit charges are calculated and reviewed to ensure equitable cost allocation amongst the different ratepayer categories. Refuse collection and leaf vacuuming charges are also calculated and reviewed and will be adjusted, as necessary, to reflect the actual program costs and net asset policy compliance.

Effective financial analysis performed during the rate calculation provides rate and cost stability, budget flexibility, and prudent financial management, which helps mitigate financial risk to Solid Waste Enterprise Funds.

The County will continually monitor revenue generation methods to ensure that each ratepayer contributes a fair and equitable share while generating sufficient resources to fund all necessary solid waste programs. The County will keep abreast of current market "gate rates" and "contract rates" to maintain competitive tipping fees. Tip fee adjustments affect the amount of waste received at County facilities. These fee adjustments will be used to manage the future waste delivered to County facilities.

The County will monitor commodity markets to ensure the Solid Waste Enterprise Fund (Disposal Fund) receives the most favorable revenues and credits possible from the sale of recovered energy from electric revenue, scrap metal, the closed Oaks Landfill (landfill gas revenue), and material sales revenue from paper and commingled recyclables.

DEP established a Fund Balance Policy to provide rate stability to the Solid Waste Enterprise Fund. The policy maintains the appropriate balance of cash reserves and operating cash for the fund while mitigating financial risks.

It is strongly recommended that any change to the rate-setting calculation methodology should be reviewed and approved by (1) the Financial Advisor, (2) County Finance, (3) the Office of the County Attorney, (4) the Bond Counsel, and (5) the Office of Management and Budget.

APPENDIX A
DEFINITIONS AND ACRONYMS

DEFINITIONS

The following presents a glossary of terms used in the Aiming for Zero Waste Plan consistent with definitions contained in Chapter 48 of the Montgomery County Code, The Code of Maryland Regulations, Maryland Recycling Act, or the County's Comprehensive Solid Waste Management Plan or the meaning in the context of this report.

Anaerobic Digestion- a process used to manage organic materials whereby microorganisms break down materials in the absence of oxygen.

Ash- the solid byproducts of combustion, which are collected from grates or hearths in a furnace where combustion takes place and from filters or separators that process combustion gasses.

Back-End Scrap Metal- ferrous and non-ferrous metal recovered once materials have been incinerated. Back-End Scrap Metal counts towards the MRA rate since it is recycled.

Base Systems Benefit Charge- charges levied by the County to cover the costs of developing and maintaining the *basic* programs and facilities necessary to fulfill the County's obligation to manage all solid waste generated within the County.

Beneficial Use- the process of turning what would become waste into a valuable commodity. Materials may be reused to substitute raw materials or be used as fuel.

Biogas- a mixture of methane and carbon dioxide produced by the bacterial decomposition of organic waste which can be used as fuel.

Biosolids- means treated sewage sludge that meets the standards for Class A or B sewage sludge and are nutrient-rich organic materials resulting from the treatment of domestic sewage in a treatment facility. When treated and processed, these residuals can be recycled and applied as fertilizer to improve and maintain productive soils and stimulate plant growth.

Bypass Waste- waste received by the County that is processible at the RRF but is not processed at the RRF and instead sent by the County to its out-of-county landfill.

Bulk Trash- large items that do not fit in a container, set out at the curb for separate collection by appointment. It usually consists of items such as furniture, mattresses, etc. Bulk trash is also known as Bulk Waste.

By-law- a regulation made by a municipality (see ordinance).

Capture Rate – represents the amount of material diverted as a percentage of the total amount generated.

Collection Contractor- a private company under contract with the County to provide solid waste collection services for dwelling units with less than seven units within the Solid Waste Collection Districts.

Collector- any person who contracts to collect and provide services for collection and transporting the solid waste of others to its disposal site.

Commingled Materials- recyclable materials collected in the County-provided blue recycling bin, including aluminum foil products, cans, glass bottles and jars, plastic bottles, containers, tubs, and lids.

Combustible- the ability to catch fire and burn easily.

Compostable Material- non-recyclable paper, food waste, yard waste (grass, leaves, brush/pruning).

Composting- the biological decomposition of organic material, such as food waste, into a stable, hummus-like product, is the first step in the recycling of food waste.

COMAR- Code of Maryland Regulations.

Construction and Demolition (C&D) Debris- solid waste from construction, demolition, and renovation projects that produce debris, including wood, wood products such as fiberboard and particleboard, cardboard, sheetrock and other drywall, plaster, fiberglass, plastic, glass, stone, steel and other metals, asphalt, concrete, brick and mortar, rock, dirt, rubble, tree stumps, logs, and large tree limbs.

County- Montgomery County, Maryland.

County Solid Waste Facilities- all landfills, refuse transfer facilities, materials recovery facilities, compost production facilities, resource recovery facilities, and related facilities wholly operated by or on behalf of the County.

Department- Department of Environmental Protection.

Digestate- the residuals from digestion, which can be either liquid or solid.

Diversion Rate- In Maryland is the amount of solid waste diverted from disposal by jurisdictions. It is the recycling rate plus credits (up to 5 percentage points) earned for source reduction.

Dwelling Unit- a building or part thereof arranged or designed for occupancy by not more than one family for living purposes and having cooking facilities.

Extended Producer Responsibility- the responsibility producers, importers and brand owners have to reduce the environmental impact of their products and packaging. It extends across the product lifecycle and is also known as cradle-to-grave management.

Feedstock- the material being processed (e.g., food waste is a feedstock at an organics processing facility)

Ferrous Metal- metal items containing iron, such as food cans.

Generator - the owner or occupant of any dwelling unit where solid waste is generated and the owner or occupant of any other business, entity, or institution at, from, or by which solid waste is generated.

Greenhouse Gas- a gas that traps heat in the atmosphere. Greenhouse gases include carbon dioxide, methane, nitrous oxide, and fluorinated gases.

Hauler- any person operating a commercial business or engaged in any enterprise regularly generating solid waste that requires collecting and hauling to an approved point of disposal, when such collecting and hauling is done by the person generating such material in his own vehicles or in vehicles leased for the purpose, in lieu of having a licensed collector perform this service.

Hazardous Waste- Includes listed wastes, and characterized wastes that have one of the following properties: ignitability, corrosivity, reactivity, or toxicity.

Integrated Solid Waste Management System- the County's system of managing solid waste as that system is revised from time to time in the County's Comprehensive Solid Waste Management Plan. The system may include all aspects of solid waste management and handling, including any waste reduction program, recycling program or facility, disposal program or facility, and any other program related to the collection, management, and disposal of solid waste.

Landfill- an engineered facility for disposing of solid wastes on land by spreading, compacting and covering the wastes.

Leachate- the liquid that has percolated through a landfill.

Maryland Department of the Environment (MDE)- in 1987, the Maryland Department of the Environment was created to protect and preserve the state's air, water, and land resources and safeguard the environmental health of Maryland citizens.

Maryland Recycling Act (MRA)- in 1988, the Maryland Recycling Act (MRA) authorized MDE to reduce solid waste disposal in Maryland through management, education, and regulation. The MRA requires that:

- Each of Maryland’s jurisdictions develops and implements recycling programs.

- Jurisdictions with populations greater than 150,000 are required to recycle 35% of their waste, and jurisdictions with populations less than 150,000 are required to recycle 20% of their waste. State agencies must implement a recycling plan with a 30% recycling rate mandate by 2012.
- If a jurisdiction fails to meet the specified reductions, state and local authorities can prohibit the issuance of building permits for all new construction.
- Each jurisdiction selects materials to be recycled and how materials are to be separated and processed.

MRA Waste and Non-MRA Waste- the list of materials considered MRA materials and Non-MRA materials constantly evolves. MRA Waste is counted toward the County's recycling rate, and Non-MRA materials are not. Non-MRA materials generally consist of C&D waste, tree stumps, vegetative debris, and motor oil. Every year, MD counties have to get the latest guidelines before completing the MRA Tonnage Reporting Survey from the MDE to determine what can be counted as the MRA Recycling rate.

Materials Recovery Facility- a facility for separating recyclables from mixed waste or for separating commingled recyclables.

Multi-Family Dwellings- buildings comprised of seven or more dwelling units, as per Montgomery County definition.

Municipal Solid Waste- solid waste generated at residences, commercial establishments, and institutions; excludes land clearing, construction, and demolition debris.

Municipalities- incorporated cities, towns, villages, and municipalities located within Montgomery County that may provide their own waste management services (e.g., the City of Rockville).

Northeast Maryland Waste Disposal Authority (NMWDA)- The NMWDA is a multi-county agency that provides support for the waste and recycling management systems of the eight participating jurisdictions in the state. Its goal is to minimize waste disposal and recycling costs.

Non-ferrous Metal- metals that do not contain iron, such as aluminum beverage cans.

Non-Processible Waste- a waste material that cannot be processed at the County's Resource Recovery Facility because of its size, bulkiness, composition, or regulatory restrictions.

Non-Recyclable Paper- all paper products not accepted in the County's recycling program, including all tissues, paper towels, napkins, carbon paper, and other non-recyclable papers.

Ordinance- legislation enacted by a municipal authority.

Organic Materials- carbon-based materials such as food scraps, yard trim, manure, paper products, etc.

Pay-as-you-throw is a system in which users are charged a rate based on the amount of waste they set out for collection, also known as Save-as-you-throw.

Processible Waste- waste that enters the County's waste system and is deemed acceptable for processing at the Resource Recovery Facility.

Recyclables- materials that can be readily separated from a waste stream and reused in their present form or can be converted into raw materials from which new products can be made.

Recycling Services- County- provided weekly curbside collection of blue bins, paper carts, scrap metal, yard trim, and Christmas trees.

Recycling Center- the County's Material Recovery Facility (MRF).

Resource Recovery Facility- a facility that processes solid waste by combustion to produce valuable resources such as steam to create electricity. Metals are also recovered from this process and recycled further.

Scrap Metal- acceptable items consisting of metal or predominantly metal materials. These items include washers, dryers, refrigerators, air conditioners, dishwashers, sinks, stoves, freezers, furnaces, hot water heaters, trash compactors, iron furniture, doors, cabinets, humidifiers/dehumidifiers, bikes, swing sets, aluminum lawn chairs, shower stalls, and disassembled metal sheds.

Solid Waste- all waste materials and debris, including any garbage, sludge, medical/ pathological waste, debris from building construction, ashes, junk, industrial waste, dead animal, salvable waste, deal or felled tree, uprooted tree stump, slash, tree limb, bush, plant, leaves, grass, garden trimmings, street refuse, abandoned vehicle, machinery, bottle, can, waste paper, cardboard, sawdust and slash from sawmill operations, and any other waste materials. Solid waste also includes any automobile, truck, box, container, tire, appliance, furniture, or recreational equipment that is in a state of disrepair or dysfunction unless the items are awaiting removal or being repaired or renovated for the personal use of the owner or occupant and the repair, renovation or removal is completed within 30 days. Solid waste also includes any recyclable solid waste.

Single-Family Dwellings- buildings comprised of one to six dwellings.

Solid Waste Charge- the overall charges levied by the County for waste management services. Includes the base systems benefit charge, incremental systems benefit charge, refuse collection charge, and disposal fees. It may also include leaf vacuuming charges for residents living within the leaf vacuuming collection district.

Solid Waste Collection Districts- special service districts established from time to time, consisting of certain areas of the County as defined on maps in the office of the Director, in which the County or its contractor collects solid waste.

Solid Waste Management District- a special service district consisting of all of Montgomery County.

Source Reduction Credit- Maryland created a source reduction credit system to help the State meet its annual waste diversion goal. Depending on the type of source reduction activities conducted, a credit of up to 5% can be added to the recycling rate. Examples of source reduction activities include running demonstration sites, outreach and education, and food composting.

Solid Waste Management Service- any service provided by or on behalf of the County to plan, implement, or administer any part of an integrated solid waste management system.

Source Separated Organics- organic materials separated by the generator and placed out for collection. Depending on the jurisdiction, this can include meat, dairy, vegetative food waste, paper and paper products (e.g., napkins, tea bags, pizza boxes, etc.), some yard trim.

Stewardship programs- Programs that place an obligation on specific industries, under legislation, to pay for part of the costs of managing certain materials (e.g., packaging, tires) under a shared responsibility model with municipalities.

Sub-district- a smaller part of a larger area. The County is divided into two sub-districts: Sub-district A and Sub-district B.

Systems Benefit Charge- an annual service charge reflecting all or a portion of the cost to the County of providing base and incremental solid waste management services.

Transfer Station- a facility designed to reduce collection and/or transportation costs by the consolidation of solid wastes before transport to a site for final disposal.

Trash- solid waste that is not considered recyclable and that trash may be sent to be disposed of in a landfill or at the Resource Recovery Facility.

Waste- materials collected from residences and businesses generally consist of trash, recyclables, food scraps, yard trim, source-separated organics, scrap metal, electronics, household hazardous waste, and bulk trash.

Yard Trim- vegetative materials generated through the normal maintenance of yards, lawns, gardens, or other landscaped areas including grass, leaves, and brush; excludes soils, tree stumps, logs, large tree limbs, rock, and other land clearing debris.

ACRONYMS

AD	Anaerobic Digestion
APC	Air Pollution Control
ASP	Aerated Static Pile
BTU	British Thermal Unit
CARE	Carpet America Recovery Effort
CBD	Central Business District
CDL	Container Deposit Law
CEMS	Continuous Emissions Monitoring System
CHP	Combined heat-and-power
CMR	Code of Massachusetts Regulations
CMW	County Managed Waste
COMAR	Code of Maryland Regulations
C&D	Construction and Demolition Debris
DEP	Department of Environmental Protection
DAFIG	Dickerson Area Facilities Implementation Group
EPR	Extended Producer Responsibility
EPA	Environmental Protection Agency
EPS	Expanded Polystyrene
FDA	Food and Drug Administration
FMI	Food Marketing Institute
FSC	Forest Stewardship Council
FY	Fiscal Year
FWRA	Food Waste Reduction Alliance
GHG	Greenhouse Gas
GMA	Grocery Manufacturers Association
GPS	Global Positioning System
HCl	Hydrogen Chloride
HERC	Hennepin County Energy Recovery Center
HH	Household
HHW	Household Hazardous Waste
HMA	Hot Mix Asphalt
ICI	Industrial, Commercial, and Institutional
IgCC	International Green Construction Code
ILA	Inter Local Agreement
L	Liter
Lb	Pound
LEED	Leadership in Energy and Environmental Design
LF	Landfill
LFGE	Landfill Gas to Energy
MCDOT	Montgomery County Department of Transportation
MCYTCF	Montgomery County Yard Trim Composting Facility
MD	Maryland

ACRONYMS

MDA	Maryland Department of Agriculture
MDE	Maryland Department of the Environment
MES	Maryland Environmental Service
MF	Multi-family
M-NCPPC	Maryland-National Capital Park and Planning Commission
MRA	Maryland Recycling Act
MRF	Material Recovery Facility
MSW	Municipal Solid Waste
MTCO2e	Metric Tons of CO2 emitted
MW	Megawatt
NAICS	North American Industry Classification System
NGO	Non-governmental Organization
NMWDA	Northeast Maryland Waste Disposal Authority
NOx	Nitrogen Oxides
NR	Non-residential (e.g. commercial)
NRA	National Restaurant Association
OCC	Old Corrugated Cardboard
OCA	Office of the County Attorney
OSHA	Occupational Safety and Health Administration
P&E	Promotion and Education
PAYT	Pay As You Throw
PSI	Product Stewardship Institute
PUF	Public Unloading Facility
RAP	Recycled Asphalt Pavement
RFID	Radio Frequency Identification
RNG	Renewable Natural Gas
RRF	Resource Recovery Facility
RRMD	Recycling and Resource Management Division
RPS	Renewable Portfolio Standard
SCS	SCS Engineers
SF	Single-Family
SO2	Sulfur Dioxide
SORRT	Smart Organizations Reduce and Recycle Tons
SSO	Source Separated Organics
SWANA	Solid Waste Association of North America
SWMP	Solid Waste Master Plan
TS	Transfer Station
TRRAC	Think Reduce and Recycle at Apartments and Condominiums
USDA	United States Department of Agriculture
VPP	Voluntary Protection Program
WRF	Waste Recovery Facility
WTE	Waste to Energy

APPENDIX B

Material Flow Diagram and Recycling Calculations: Calendar Year 2022

Appendix B MSW CY 2022

Item No.	Material Description	Sources of Data	Total (tons/yr)	Comments
0	Construction & Demo Debris Private Export* (Recycled & Landfilled)	Licensed Collector Reports under ER 5-13AM	217,126	Not County-managed, includes both disposed and recycled C & D
1	Recycled via non-County Facilities	Collector, Processor, Business & Self-Hauler Rpts.	198,804	Filtered to avoid double-counting
2	County Recycling Facility Material Sales	County TS & MRF	70,835	Outgoing to market from County Recycling Center & Penn Waste
3	Mulch Loaded Out From TS	County Transfer Station (TS)	26,993	Scaled out as taken to County Mulch Contractor & Preserve Locations
4	Non-Processibles Recycled**	County TS	16,823	Not included in MRA recycling calculation
5	Non-Processibles Landfilled**	County Trans. Stat'n. & Covanta	39,961	Not included in MRA recycling calculation
6	RRF (MSW burned) Approx.	Covanta	483,439	Total tons loaded on rail to RRF Net of 6a
6a	RRF (C&D Burned) Approx.	County Transfer Station (TS) Scale Records	78,422	In-Bound C&D less Outbound Non-Processibles Landfilled
6b	By-pass (Accepted Processible Landfilled)	County TS Scale Out Records	12,562	MSW shipped to landfill
6c	By-pass (Accepted Processible Landfilled) C&D	County Transfer Station (TS) Scale Records	2,038	In-Bound C&D less Outbound Non-Processibles Landfilled
7	Refuse Disposed Out of County	Hauler Reports	69,244	Private Sector MSW Collection not delivered to CountyTS
8	All Incoming Leaves and Grass	Compost Facility	56,875	Includes 0 to Backup Composters
9	Composting Residue to RRF	MES Scale Records	-	Reported by Compost Facility Manager
10	Ferrous recovered at RRF	Covanta	11,815	Recovered from ash at County Facility
10a	Ferrous recovered at RRF (C&D Residue)	Internal Calculation	1,916	Not included in MRA recycling calculation
11	Ash Loaded to Ash Contractor	Republic Monthly Report	-	Total ash (includes 12, 12a, and 13)
12	Ash outgoing from Ash	Republic Monthly Report	-	Not Included in MRA recycling calculation
12a	Ash outgoing from Ash Recycler (C& D Residue)	Internal Calculation	-	Not included in MRA recycling calculation
13	All Ash not recycled	Coventa Scale Records	-	
			553,430	

Montgomery County Recycling Rate and Waste Diversion Rate Calculations (MRA Method)		Numerator	Denominator	Rate
Recycling Rate	**(1 + 2 + 3 + 8 - 9 + 10) / (CMW - 4 - 5 -6a -6c)**	**365,321**	**918,751**	**39.76%**
Recycling Rate with Source Reduction Credit				**44.76%**

Notes:
* Construction and Demolition waste (C&D) is waste identified by place of origin - construction or land clearing sites. C&D is reported on licensed hauler reports, but there may be additional C&D tons not reported and therefore not included in stream 0.
** Nonprocessibles are Construction & Demolition-type materials: not eligible for recycling credit, but are County-managed solid waste.
*** Diversion Rate = Recycle Rate + 5.0% Source Reduction Credit

Nomenclature:
"C&D" means "Construction and Demolition" waste, exclusive of MSW, traditionally managed by the private sector, but much now comes to County TS.
"CMW" means "County Management Waste". It includes all MSW, whether or not exported by private sector collectors, but only C&D delivered to TS.
"MSW" stands for "Municipal Solid Waste", and represents the waste eligible for recycling under the State recycling law, regulations and guidelines.
"TS" stands for the County's "Transfer Station", located in Derwood, Maryland, just south of Gaithersburg.
"MRF" stands for Material Recovery Facility
"RRF" stands for Resource Recovery Facility

Total Waste Generation, Including C&D Exported by Private Sector (sum of streams 0 through 8)	
County-Managed Waste (CMW) = 1 + 2 + 3 + 4 + 5 + 6 + 6a +6b+6c+ 7+ 8	1,055,995
MSW Generated (County Managed Waste less streams 4, 5 6a and 6c)	**918,751**