



Committee: T&E
Committee Review: At a future date
Staff: Keith Levchenko, Senior Legislative Analyst
Purpose: To introduce agenda item – no vote expected
Keywords: #SolidWaste and Solid Waste Management Plan

AGENDA ITEM #7A
February 23, 2021
Introduction

SUBJECT

Introduction: Comprehensive Solid Waste Management Plan 2020 - 2029

DESCRIPTION/ISSUE

- On February 8, 2021 the County Executive transmitted his recommended Comprehensive Solid Waste Management Plan 2020- 2029.
- A public hearing is scheduled for March 16, 2021 at 1:30 pm.
- The current plan (2012 – 2023) was approved by the Council in March 2015.
- Pursuant to Sections 9-503 and 9-515 of the Environment Article of the Annotated Code of Maryland, the County's Solid Waste Plan is required to be reviewed and updated every three years.
- The current update was delayed pending the completion of a ["Aiming for Zero Waste" review of the County's solid waste programs and facilities by a consultant](#). This work included an evaluation of the current solid waste system; a benchmarking of the County with other jurisdictions; identification of options to increase reuse, recycling, and diversion; assessment of the County's existing waste management facilities; and an analysis of managing the remaining waste.
- The consultant's work was reviewed by the "Aiming for Zero Waste Task Force." [The Task Force's recommendations](#) were transmitted to the Executive and the Council in April 2020.
- The T&E Committee received a [briefing](#) on the "Aiming for Zero Waste" Task Force's recommendations and status of the Comprehensive Solid Waste Plan Update on December 7, 2021.

This report contains:

CE Transmittal Letter	©1
Draft Resolution	©2-4
Draft Comprehensive Solid Waste Management Plan 2020 – 2029	©5-229

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OFFICE OF THE COUNTY EXECUTIVE

Marc Elrich
County Executive

MEMORANDUM

February 8, 2021

TO: Tom Hucker, President, Montgomery County Council

FROM: Marc Elrich, County Executive 

SUBJECT: Resolution – Adoption of the Comprehensive Solid Waste Management Plan 2020-2029

I am writing to request that the County Council adopt the Comprehensive Solid Waste Management Plan (“Plan”) for the years 2020 through 2029. This Plan was revised and updated by the Recycling and Resource Management Division (RRMD) in accordance with Title 9, Subtitle 5 of Environmental Article of the Annotated Code of Maryland, and Title 26, Subtitle 3, Chapter 03 of the Code of Maryland Regulations. The Environment Article requires each county to review its solid waste management plan at least every three years. County Council adopted the current Plan by Resolution #18-86, dated March 31, 2015.

In addition to the proposed Plan, attached is a draft Council Resolution for adopting the Plan.

If you have any questions, please feel free to contact Willie Wainer, Chief, Division of Recycling and Resource Management at 240-777-6402. Thank you for your attention to this matter.

Attachments:

Comprehensive Solid Waste Management Plan 2020 -2029 Final Draft
Draft Council Resolution

ME:ww

c: Adam Ortiz, Director, Department of Environmental Protection
Willie Wainer, Chief, RRMD, Department of Environmental Protection
Lonnie Heflin, Section Chief, RRMD, Department of Environmental Protection
Marilu Enciso, Senior Planning Specialist, RRMD, Department of Environmental Protection
Keith Levchenko, County Council

Resolution No.:
Introduced:
Adopted:

**COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND**

By: County Council at the Request of the County Executive

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 March 31, 2015, the County Council, by Resolution 18-86, adopted the current Ten Year Comprehensive Solid Waste Management Plan for Montgomery County (the Plan).
3. The Plan was due for submission to MDE on March 31, 2018. The Montgomery County Department of Environmental Protection (DEP) requested an extension to the deadline because the County had initiated several significant planning efforts that would impact the update to the Plan. Specifically, the Aiming for Zero Waste Master Plan and the Montgomery County Council mandate (Bill 28-16; Strategic Plan to Advance Composting, Compost Use, and Food Waste Diversion) that the County develop a strategic plan to address food waste diversion and recycling/composting.
4. On May 11, 2018, MDE granted the County's extension request, provided that the County submitted a draft Plan for MDE to review no later than January 30, 2020. In the meantime, the County would continue to operate under its currently approved 2012-2023 Plan.
5. The deliverables from the long-term planning efforts were used to prepare the Plan. On January 30, 2020, the draft of the revised Plan was sent to MDE for its review and tentative approval to MDE.
6. On March 13, 2020, MDE completed the review and determined that the Plan will meet the requirements outlined in Sections 9-503, 9-505, 9-1703 of the Environment Article, and COMAR 26.03.03 if DEP modified the Plan according to MDE's instructions.

7. On May 13, 2019, the Governor signed Senate Bill 370, Environment Recycling – Office Buildings into law. The law requires the County Recycling Plan to address by October 1, 2020, the collection and recycling of recyclable materials from office buildings that have 150,000 square feet or greater of office space.
8. On March 23, 2020, the County submitted a draft text of the office building recycling plan (OBR plan) to MDE for its review in response to the requirement of Senate Bill 370 which requires the County to include the OBR plan in the Plan by October 1, 2020.
9. On April 3, 2020, MDE completed the review and determined that the OBR plan will meet the requirements of Senate Bill 370 provided that the DEP modify the OBR plan in accordance with MDE's instructions.
10. A revised and adopted Plan and OBR should have been submitted to MDE for its review and approval no later than June 12, 2020.
11. On April 15, 2020, DEP informed MDE that the Plan could not be submitted for the County Council adoption due to the COVID-19 pandemic; thus, the County could not meet the June 12, 2020 deadline.
12. On _____, 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 2020 through 2029" responsive to the foregoing MDE preview comments, and new legislation, together with an Office Building Recycling Plan.
13. On _____, a public hearing was held pursuant to Section 9-505 of the Environment Article.

Action

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

The Comprehensive Solid Waste Management Plan for the Years 2012 through 2023 is wholly superseded and replaced with the "Comprehensive Solid Waste Management Plan for the Years 2020 through 2029," dated October 1, 2020; and

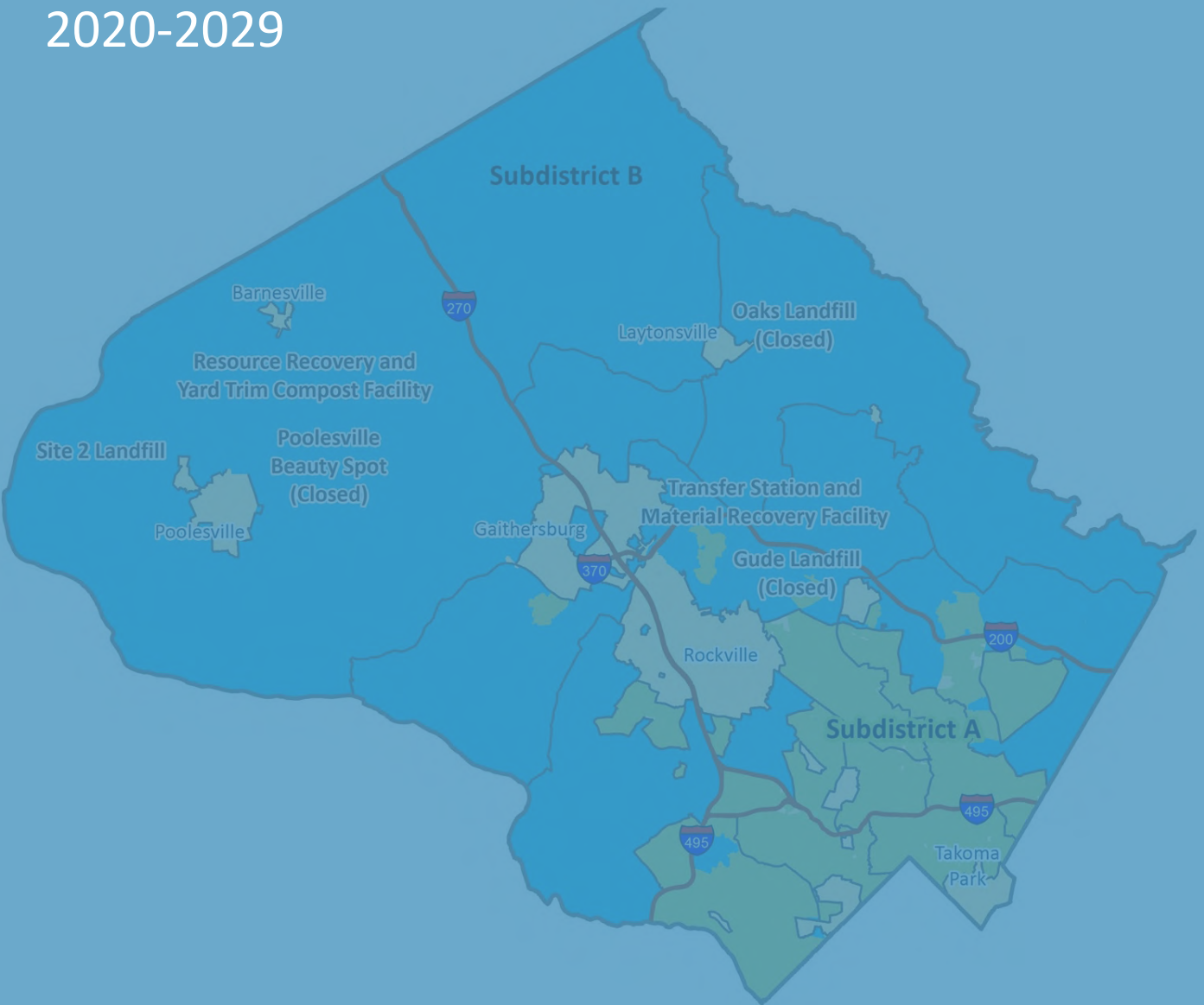
The "Montgomery County Office Building Recycling Plan," dated October 1, 2020, is adopted and incorporated by reference into Appendix F of the Plan.

Resolution No.: _____

This is a correct copy of Council action.

Selena Mendy Singleton, Esq., Clerk of the Council

Comprehensive Solid Waste Management Plan 2020-2029



MONTGOMERY COUNTY, MARYLAND

Final Draft October 2020

**COMPREHENSIVE TEN-YEAR SOLID WASTE
MANAGEMENT PLAN
CY 2020 – CY 2029
Montgomery County, Maryland**

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Appendix E.	County Council Bill 41-14, “Food Service products – Packaging Materials – Requirements”
Appendix F	Contains the Recycling Plan for Office Buildings. Pursuant to Senate Bill 370, Environment – Recycling – Office Buildings.

MONTGOMERY COUNTY, MARYLAND
COMPREHENSIVE SOLID WASTE MANAGEMENT PLAN
for the Years 2020 through 2029

**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 **XXX** dated **XXX****

**Department of Environmental Protection
Recycling and Resource Management Division**

Rockville, Maryland

INTRODUCTION

The Montgomery County 2020-2029 Ten Year Solid Waste Management Plan was prepared according to Title 9, Subtitle 5, Environment Article, Annotated Code of Maryland, and the Regulations under COMAR 26.03.03.03(A). An Executive Summary, along with the Resolution of the Montgomery County Council, which adopted this Plan and the MDE approval letter will appear immediately following the Table of Contents.

EXECUTIVE SUMMARY

The Montgomery County, Maryland, Comprehensive Solid Waste Management Plan for the Years 2020 - 2029 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 Plan has been adopted by the Montgomery County Council Resolution XXXX and approved by the Maryland Department of the Environment (MDE).

The Annotated Code of Maryland requires the County to review and update the Solid Waste Management Plan at least once every three years. DEP requested an extension of time from MDE, in early 2018, to submit the County's revised Solid Waste Management Plan, due to the County's undertaking of two main initiatives:

1. Montgomery County Bill 28-16 required DEP to develop a strategic plan to reduce food generation, reuse food that would otherwise be wasted, and increase the amount of food and other organic materials that can be composted; and
2. The Development of the *Aiming for Zero Waste Plan, A Vision for Sustainable Materials Management in Montgomery County*.

The Solid Waste Management Plan 2020 -2029 incorporates the results of the initiatives mentioned above, including the Task Force recommendations¹ given to the County Executive and County Council. DEP Staff developed the main recommendations of the Strategic Plan for reducing food generation in conjunction with stakeholder working groups. They are included in Section 5.6.4 of Chapter 5 of the Plan. The capabilities and capacities of the County's solid waste facilities were evaluated as well as multiple options to reduce waste and to increase recycling. These options are selected for implementation or further evaluation, based on the ability to increase diversion of more materials from disposal. These options present a comprehensive waste management strategy that supports the County's effort to reach a carbon-neutral operation. The County continues to review all options to identify the best course of action. Therefore, Chapter 5 of this Plan is subject to revisions. The current disposal path for waste is through the County's Resource Recovery Facility. That facility is expected to remain open through April 2026. Given the County Executive's goal of closing the facility, the County is evaluating the necessary changes to meet that goal.

As the County makes decisions and the implementation phase begins, the County will notify MDE and update this Ten-Year Plan as needed. To develop an efficient and effective Action Plan, the County will:

¹ <https://www.montgomerycountymd.gov/SWS/Resources/Files/master-plan/task-force-recommendations.pdf>
Montgomery County Comprehensive Solid Waste Management Plan 2020 - 2029

- Undertake studies, pilot programs, cost analyses, review procurement options to select the best options for implementation.
- Conduct feasibility studies of initiatives, including extending trash collection services to Sub-district B.
- Develop specific timelines, identify participating agencies, staff assignments, and budget definition.
- Secure food waste processing capacity while the County develops its organics processing infrastructure.
- Implement low-cost, low-effort options such as waste reduction and reuse and enhancing regulations.

The following amendments, changes, additional appendices, and other pertinent documents are included in this Plan:

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

- Applicable laws and regulations were updated.
- County Executive Regulation 1-15, "Residential and Commercial Recycling," supersedes Executive Regulation 15-04 AM.
- County Council Bill 41-14, "Food Service Products – Packaging Materials – Requirements," was added to Chapter 48 of the County Code.
- County Council Bill 28-16, "Strategic Plan to Advance Composting, Compost Use, and Food Waste Diversion," was added to Chapter 48 of the County Code.

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:

- Dates and population/employment numbers.
- Household Growth Projection for 2030 by policy area.
- Updated maps.

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

- Dates and waste generation tonnages.
- Repositioned tables to follow text references.
- Chapter subsections were rearranged, avoiding repetitions, and improving readability.

- Updated Maps.
- A summary table about County Collection Services.
- A summary of Materials Management in Incorporated Cities and Municipalities.
- A summary of the number of households served and tons managed by district (CY17).
- Pursuant to Senate Bill 370, *Environment – Recycling – Office Buildings*, a Recycling Plan for Office Buildings, was added.
- The latest adopted Montgomery County's Ten-Year Comprehensive Water Supply and Sewerage Systems Plan (2018-2027 update) was used to bring up-to-date information about biosolids and septage management.
- Updated information about each County-owned facility.
- The summary table of solid waste acceptance facilities in the County was updated.
- The closed landfills section was removed from this chapter.
- A table listing the solid waste leaving the County for processing, recovery, and disposal was added.

Chapter 4 assesses solid waste management needs to address waste generation issues and acceptance facility constraints. Changes to this chapter include:

- Updated waste generation and recycling data.
- The latest adopted Montgomery County's Ten-Year Comprehensive Water Supply and Sewerage Systems Plan (2018-2027 update) was used to determine the current conditions and constraints as well as the Needs Assessment and Plan Direction for the biosolids and septage management mentioned in Chapter 4.
- A new planning direction towards exploring food waste composting is indicated, including efforts to establish best management practices through the use of demonstration projects.
- Updated topography, soil types, geological conditions, aquifers, and surface water maps.
- Rearranged chapter subsections to avoid repetition and improve readability.
- Constraints of County-owned acceptance facilities.
- A list of County facilities needing processing capacity increment during the term of this Plan.
- Advances of the implementation of County Council Bill 28-16, "Strategic Plan to Advance Composting, Compost Use, and Food Waste Diversion."

Chapter 5 provides a Plan of Action to address solid waste generation issues, materials management, and solid waste acceptance facility needs. Changes to this chapter include:

- Each county-owned facilities have an updated Plan of Action to improve safety and increase productivity.
- Composting and recycling processing capacity needed.
- Closed landfills section was removed from this chapter.
- Updated current Plan of Action of solid waste generation and maximize recycling.

- Updated biosolids' Plan of Action.
- Enhanced Plan of Action for Reduction of Solid Waste Generation and Maximize Recycling.
- Impacts of recommended options to reduce waste and increase recycling were identified.
- The summary Plan of Action table was updated and expanded.
- Financial Management System addresses in-depth the role of Chapter 48, the Montgomery County Code, and the Master Authorization in the financial management of the solid waste enterprise fund. In anticipation of the upcoming financial needs to implement strategies, programs, and infrastructure to reduce waste and increase recycling described in Chapter 5 of the Plan.

Appendices

Added the following documents

Appendix B is updated to provide a material flow diagram and recycling calculations for a new base year that is Calendar Year 2017.

Appendix C provides a copy of County Executive Regulation 1-15, "Residential and Commercial Recycling."

Appendix D provides a copy of the County Council Bill 28-16, "Strategic Plan to Advance Composting, Compost Use, and Food Waste Diversion."

Appendix E provides a copy of the County Council Bill 41-14, "Food Service Products – Packaging Materials – Requirements."

Appendix F contains the Recycling Plan for Office Buildings. Pursuant to Senate Bill 370, *Environment – Recycling – Office Buildings*.

Montgomery County Council Resolution

NOTE: Currently, this page is intentionally left blank. It will be replaced with approved Montgomery County Council Resolution, adopting the Plan Update, when adopted.

Montgomery County Council Resolution (cont.)

Approval Letter
Maryland Department of the Environment (MDE)

NOTE: Intentionally left blank. Replace with the approval letter from MDE.

MDE Approval Letter (cont.)

CHAPTER ONE: RULES GOVERNING SOLID WASTE MANAGEMENT

The Montgomery County Comprehensive Solid Waste Management Plan for the years 2020-2029 (the “Plan”) sets forth the policies, goals, and plans for the management of solid waste in the Montgomery County (County). The Plan was prepared by the Recycling and Resource Management Division (RRMD) of the County’s Department of Environmental Protection (DEP) in accordance with Title 9, Subtitle 5 of the Environment Article, Annotated Code of Maryland.

Chapter One is organized as follows:

- 1.1 Authority and Purpose
- 1.2 Goals, Objectives, and Policies for Solid Waste Management
- 1.3 County Government Structure for Solid Waste Management
- 1.4 Laws and Regulations Governing Solid Waste Management

Acronyms and solid waste terms used in this chapter and throughout this document are defined in Appendix A.

1.1 Authority and Purpose

Maryland State law authorizes the Montgomery County Council to regulate and control the management of solid waste 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 “Solid Waste Management Plan” for the entire County, including all towns, municipal corporations, and sanitary districts. The Plan 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 Plan must be review and updated as necessary at least once every three years. When deemed necessary by either the County Executive or the County Council, the County Executive must prepare an amendment to the Plan.

The purpose of this Plan is to describe the County’s programs for providing comprehensive management of solid waste generated by the County’s residential (including

single-family and multi-family), commercial, institutional, industrial, and agricultural sectors during the ten-year period from 2020 through 2029. The Plan establishes the framework on which current solid waste management activities are conducted and future programs implemented.

1.2 Goals, Objectives, and Policies for Solid Waste Management

The County has adopted a hierarchy of solid waste management options (Figure 1.1). Source reduction of solid waste is the preferred management option. The hierarchy leads to minimizing the volume of waste that must be landfilled. This hierarchy recognizes the interdependence of all elements of an integrated solid waste management system. The general goals of this Plan include the following features:

- The County must undertake all waste reduction measures to the extent practical and feasible.
- All waste recycling measures should be implemented with available technologies and markets, which are not significantly more expensive than the waste disposal measures that would otherwise be needed. Technology, markets, and cost-effectiveness are reviewed regularly so that recycling may be expanded as new opportunities arise.
- The County will continue current disposal practices until 2026.
- To 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.

Figure 1.1 Montgomery County's Solid Waste Management Hierarchy



The County's solid waste management programs and policies have created a system that exceeds the State's established recycling goals. The County's solid waste management hierarchy is entirely consistent with the State's hierarchy. By shifting the focus of solid waste management to waste reduction and recycling, the County strives to reduce the solid waste remaining for disposal. To reduce the County's reliance on landfill capacity, ash generated at the RRF is beneficially reused as a road base or alternative daily cover at a landfill outside the County.

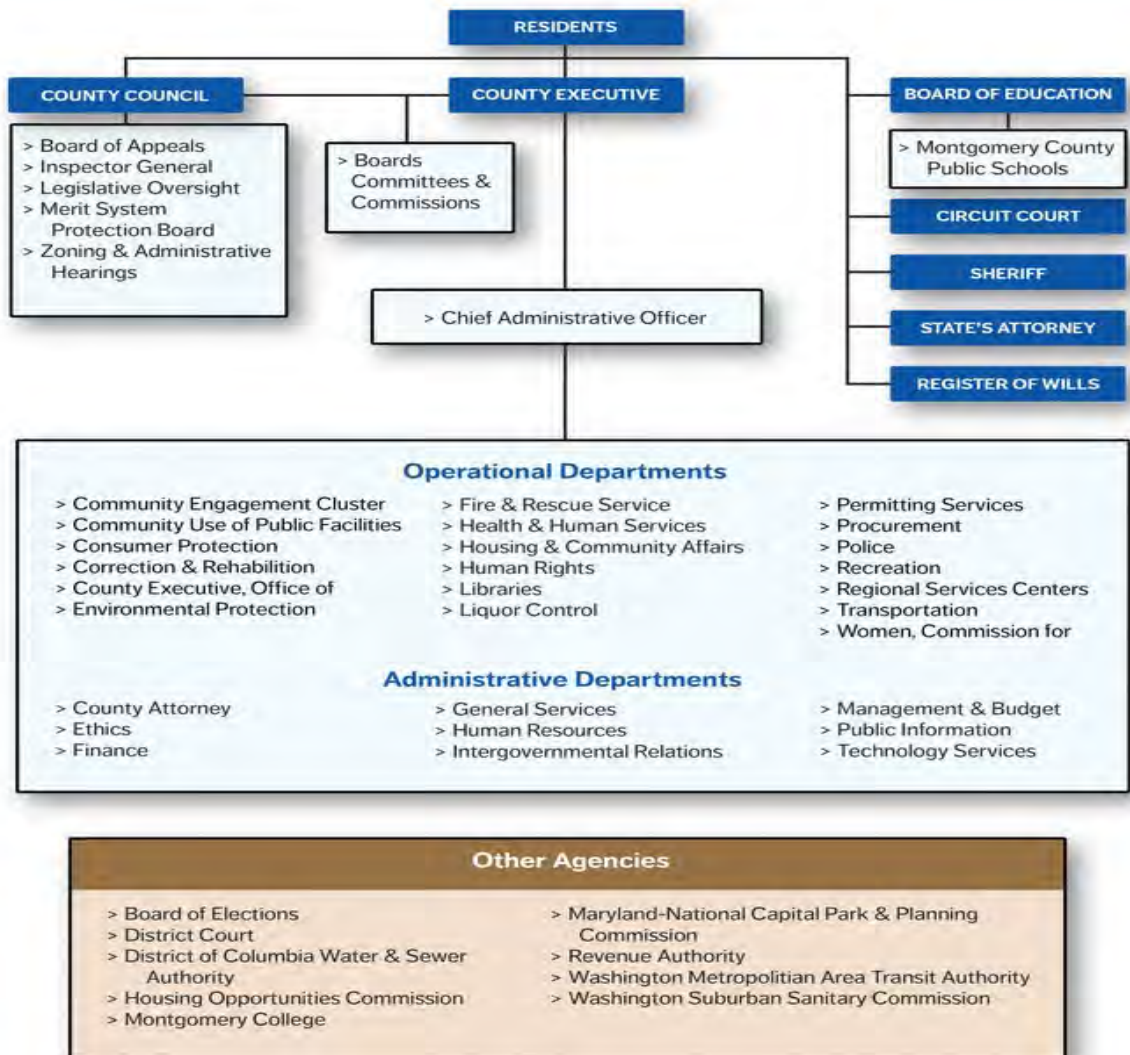
This solid waste plan is consistent with Objective 9 of the County's comprehensive land use plan, *"General Plan Refinement of the Goals and Objectives for Montgomery County (1993)"*¹: *Provide an adequate, self-sufficient, well-monitored, and ecologically sound system for the management of Montgomery County's solid wastes.*

¹ [General Plan Refinement of the Goals and Objectives for Montgomery County, The Maryland-National Capital Park And Planning Commission, December 1993](#)

1.3 County Government Structure

The County is a charter county of Maryland with a nine-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. The County Council, after providing notice and conducting public hearings, adopts the Plan, its amendments and revisions, and approves other solid waste legislation. Figure 1.2 shows an organizational chart of the County government.

Figure 1.2 Montgomery County, Maryland Functional Organization Chart



1.3.1 Primary Solid Waste Management Responsibility

The day-to-day management of the County's integrated solid waste management system and planning for solid waste management is the responsibility of the County's 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. The Recycling and Resource Management Division (RRMD), within DEP, ensures that all municipal solid waste is handled correctly and disposed of through the enforcement of 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. The Division of Animal Services contracts for the collection and disposal of dead animals.

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.

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.

1.3.3 Other Agencies that Manage Solid Waste

Other agencies have the following roles in managing solid waste in the County and the development of the Plan.

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 Plan. Pursuant 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 Plan to M-NCPPC for their recommendations at least 30 days before the date set for the public hearing on the Plan. The County Council requested M-NCPPC comments on XXXXX, 2020, and no comment was received.

Washington Suburban Sanitary Commission (WSSC)

WSSC is a bi-county agency created by the General Assembly of Maryland. WSSC is responsible for planning, designing, constructing, operating, and 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 provides the executive branch with information and assistance as necessary during the preparation of the Plan. Pursuant 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 Plan for recommendation to WSSC at least 30 days before the date set for the public hearing on the Plan. The County Council requested WSSC comments on XXXx, 2020, and no comment was received.

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 Northeast Maryland Waste Disposal Authority (NMWDA) was created by the General Assembly of Maryland 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 the disposal of solid waste. NMWDA financed the cost of designing and constructing the County's RRF and related transportation improvements necessary for the project. The County has a Waste Disposal Agreement with NMWDA for the disposal of non-recycled waste.

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 of materials, and recycling activities.

In accordance with 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 solid waste laws and regulations of the state.

1.4.1 Federal Laws and Regulations

Resource Conservation and Recovery Act (RCRA) of 1976:

A primary objective of this Act as amended 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, to ensure that hazardous waste is handled to protect human health and the environment.

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

Establishes programs for the identification and remediation of waste disposal sites containing hazardous substances; establishes standards for clean-up efforts and disposal of waste; 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.

CFR, TITLE 40, SUBCHAPTER I

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 Hazardous Waste Disposal Sites

Establishes minimum national standards for the recyclable materials used in a manner to constitute disposal, hazardous waste burned for energy recovery, used oil burned for energy recovery, recyclable material used for precious metal recovery, and spent lead-acid batteries being reclaimed.

Part 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 the treatment of domestic sewage in a 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 the disposal of wastes. 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 and sets forth the minimum requirements of such plans and 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 which 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 Code of Maryland Regulations (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;
- Section 9-1708 establishes requirements for a natural wood waste recycling facility.

The Natural Resources Article also contains several sections that relate 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 Title 26 (Department of the Environment), of COMAR. 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 CHSs.

The text below lists the relevant sections of the Annotated Code of Maryland and other state regulations that affect 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. 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 electronics 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.

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):

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):

Creates the Maryland Environmental Service 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 Financial Assurance Law (1997):

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

Maryland Landfill Siting Law (1994):

Describes the requirements for public hearings regarding landfill siting, and addresses permitting requirements and security requirements. Explains the requirements for submissions of plans and documents necessary to conduct a technical review and to approve proposed facilities.

Maryland Recycling Act (2012):

House Bill 929 (2012) amended the rates to 35 percent for Counties with a population greater than 150,000 or 20 percent for a county with less than 150,000. The law requires full implementation by December 31, 2015.

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 of 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 Nonpoint Source Pollution Control Laws (1990-1994):

Allows for the adoption of criteria and procedures by counties and soil conservation districts to implement soil erosion control programs and for counties and municipalities to implement stormwater management programs.

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 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).

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.

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 for operation of these wood waste facilities created after July 1, 1992.

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.

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 the collection, processing, marketing, and disposition 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):

Provides that a person may operate a composting facility only in accordance with 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 – 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.

Recycling – Office Buildings (2019):

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

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 the public health.

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 environmental impacts of materials management, conserve in-State disposal capacity, make optimal use of resources and create an environmentally and economically sustainable system of materials management.

Water and Sewage Plan Act (1983):

Requires the preparation and submission of solid waste management plans by counties and establishes the minimum requirements of 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 pertaining to 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).

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.

² <http://www.dsd.state.md.us/COMAR/ComarHome.html>

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 the burning of 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 for the disposal of carcasses of dead animals that had been 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, storm water 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 the burning of 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 waste³. This Chapter provides for the licensing and permitting of the collection, transportation, and disposal of solid waste (Sections 48-5, 48-19, 48-22) and authorizes the County to establish service and disposal facilities (Section 48-8). Specifically, it provides for the establishment of refuse collection districts (Section 48-29).

Article V of Chapter 48 requires the County Executive to develop a recycling program, which may be established by County Executive Regulation. The regulations set the recycling goal for the County's recycling program and how the rate of recycling 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 the collection, processing, and marketing of recyclables.

County Council Bills:

Bill 41-14 Solid Waste (Trash) - Food Service Products – Packaging Materials – Requirements
Bill 28-16 Solid Waste (Trash) - Strategic Plan to Advance Composting, Compost Use, and Food Waste Diversion

Chapter 59 (Zoning):

Provides definitions of solid waste facilities and a list of land use zones in which these facilities are permitted either by right or by special exception.

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 Regulations⁴

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

⁴ [Montgomery County Executive Regulations](#)

CHAPTER TWO: POPULATION, EMPLOYMENT, AND LAND USE

This chapter describes Montgomery County, its population, employment, and land-use practices. These factors give information for projecting solid waste quantities and for planning the future needs of the solid waste system. Trends in population, consumption, and employment are indicative of the amount and the 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 has the definitions of acronyms and solid waste terms used in this chapter and throughout this document.

2.1 Population Trends

After 2010, Montgomery County entered a slower growth phase (less than 1%) typical of populous, more developed counties responding to less land available for development and the lack of the transportation capacity needed to sustain rapid growth¹. The County's population growth was driven primarily by births to residents and increasing international migration. During this period, net gains in domestic migration (more people from other parts of the United States moved into Montgomery County than residents moved out) contributed to increased population for the first time.

Montgomery County has seen the largest population gains in numeric terms among the Metropolitan Statistical Area (MSA) various jurisdictions². Montgomery County is the

¹ Montgomery County Trends: A Look at People, Housing, Jobs Since 1999. January 2019.

² Comprehensive Economic Strategy (CES), 2016

largest County in Maryland. It has retained its status as the second-largest County in the Washington, D.C. region and the 42nd largest County in the United States. Over the next 30 years, no other jurisdiction in the Washington, D.C. region is expected to break the one-million population mark¹.

The most recent forecasts of growth are contained in the Round 9.1 Cooperative Forecasts, prepared by Montgomery County's Planning Department, The Maryland-National Capital Park Planning Commission (M-NCPPC). M-NCPPC projections shown in Table 2.1 suggest a slow growth population averaging approximately 0.7 percent per year for the planning period 2020-2029.

Table 2.1 Population Projections of Montgomery County, Maryland 2019-2029

Year	Estimated County Population
2019	1,044,900
2020	1,052,300
2021	1,059,300
2022	1,066,300
2023	1,073,300
2024	1,080,300
2025	1,087,300
2026	1,095,600
2027	1,103,900
2028	1,112,200
2029	1,120,500

Source: M-NCPPC, Cooperative Forecast, Round 9.1, five-year increments 2020, 2025, and 2030. Intermediate years were interpolated. Years are calendar years.

A total increase of 40,940 households is expected to occur between 2017 and 2030. (Table 2.2). The areas with the largest number of household increases (Figure 2.1) are White Flint (6,062), Clarksburg (4,549), Silver Spring (4,351), and Bethesda (3,072). The three areas with high percent increments of households are Shady Grove (204 percent), White Flint (157 percent), and Twinbrook (139 percent).

Table 2.2 Household Growth Montgomery County, Maryland 2017-2030

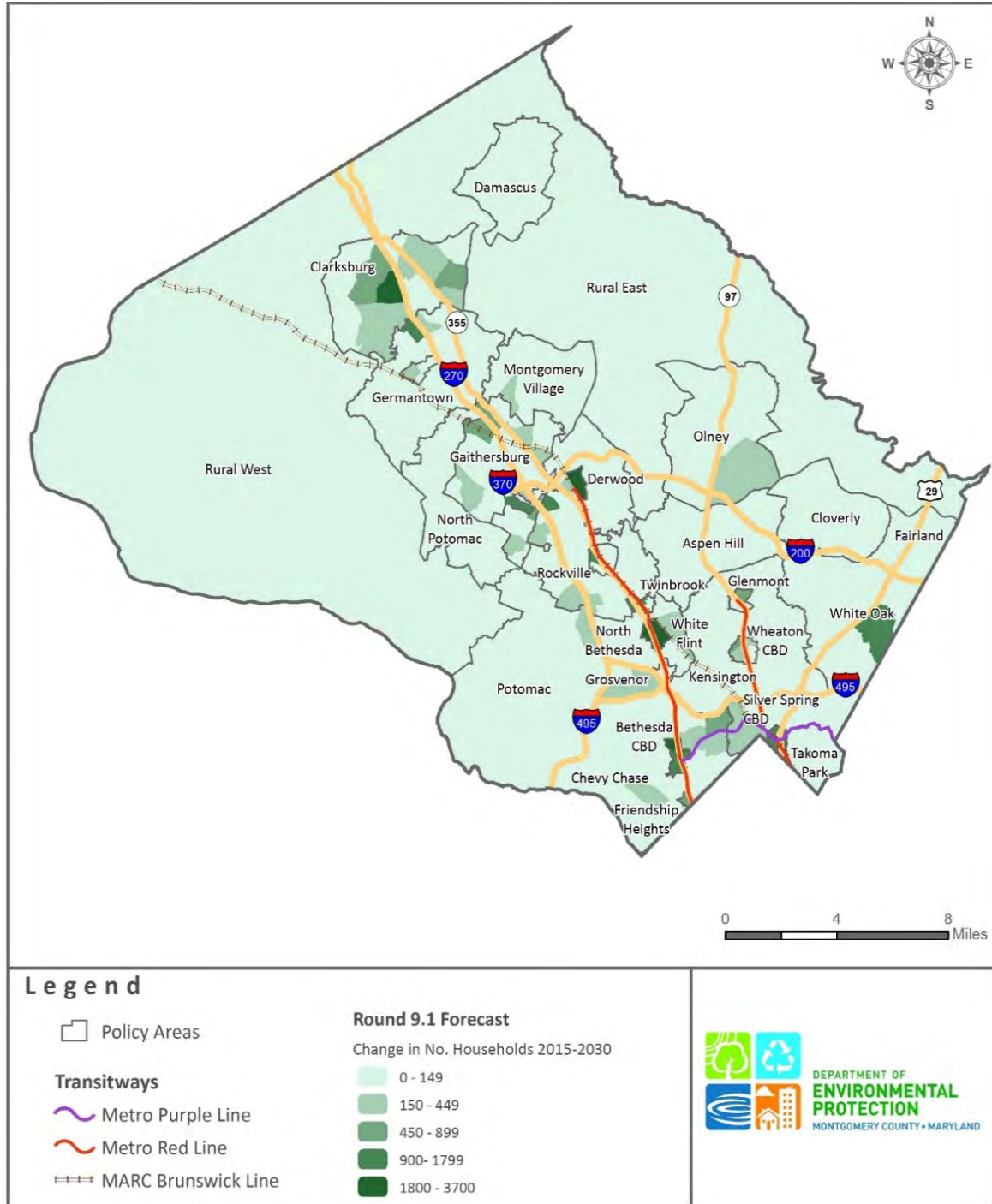
Policy Area	Households		Households Growth	
	2017	2030	Change	% Change
White Flint	3,853	9,915	6,062	157%
Clarksburg	7,163	11,712	4,549	64%
Silver Spring CBD	9,416	13,767	4,351	46%
Bethesda CBD	8,246	11,318	3,072	37%
Rockville City	21,934	24,423	2,489	11%
Gaithersburg City	25,498	27,938	2,440	10%
Shady Grove Metro Station	1,031	3,139	2,108	204%
Twinbrook	1,495	3,579	2,084	139%
R&D Village	4,949	6,842	1,894	38%
White Oak	7,183	8,695	1,512	21%
Rockville Town Center	3,397	4,723	1,326	39%
Bethesda/Chevy Chase	28,806	30,090	1,285	4%
Silver Spring/Takoma Park	29,181	30,324	1,143	4%
Germantown West	21,860	23,002	1,142	5%
North Bethesda	15,006	15,835	829	6%
Wheaton CBD	3,805	4,613	807	21%
Glenmont	1,173	1,890	717	61%
Montgomery Village/Airpark	18,560	19,158	598	3%
Friendship Heights	4,084	4,628	544	13%
Olney	11,562	11,887	325	3%
Rural East	11,417	11,742	325	3%
Potomac	17,297	17,610	313	2%
Germantown East	8,480	8,758	278	3%
Rural West	7,249	7,510	261	4%
Germantown Town Center	1,542	1,742	200	13%
Fairland/Colesville	21,746	21,819	72	0%
Cloverly	5,243	5,295	52	1%
Kensington/Wheaton	34,033	34,083	50	0%
Grosvenor	3,075	3,119	44	1%
Damascus	3,913	3,938	25	1%
North Potomac	8,966	8,989	23	0%
Aspen Hill	24,430	24,444	15	0%
Derwood	5,775	5,779	4	0%
Grand Total	381,368	422,308	40,940	

*Policy area sums might not match countywide 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: Research & Special Projects Division, Montgomery County Planning Department, *Round 9.1 Cooperative Forecast*

Figure 2.1 Household Growth Projection for 2030 in Montgomery County



2.2 Municipalities

Figure 2.2 depicts a map of Montgomery County and the location of its 19 incorporated areas. Approximately 174,758 residents reside within these incorporated municipalities. Table 2.3 lists municipalities in Montgomery County and their populations. The municipalities do not have separate solid waste plans. Chapter 3 describes their solid waste management practices.

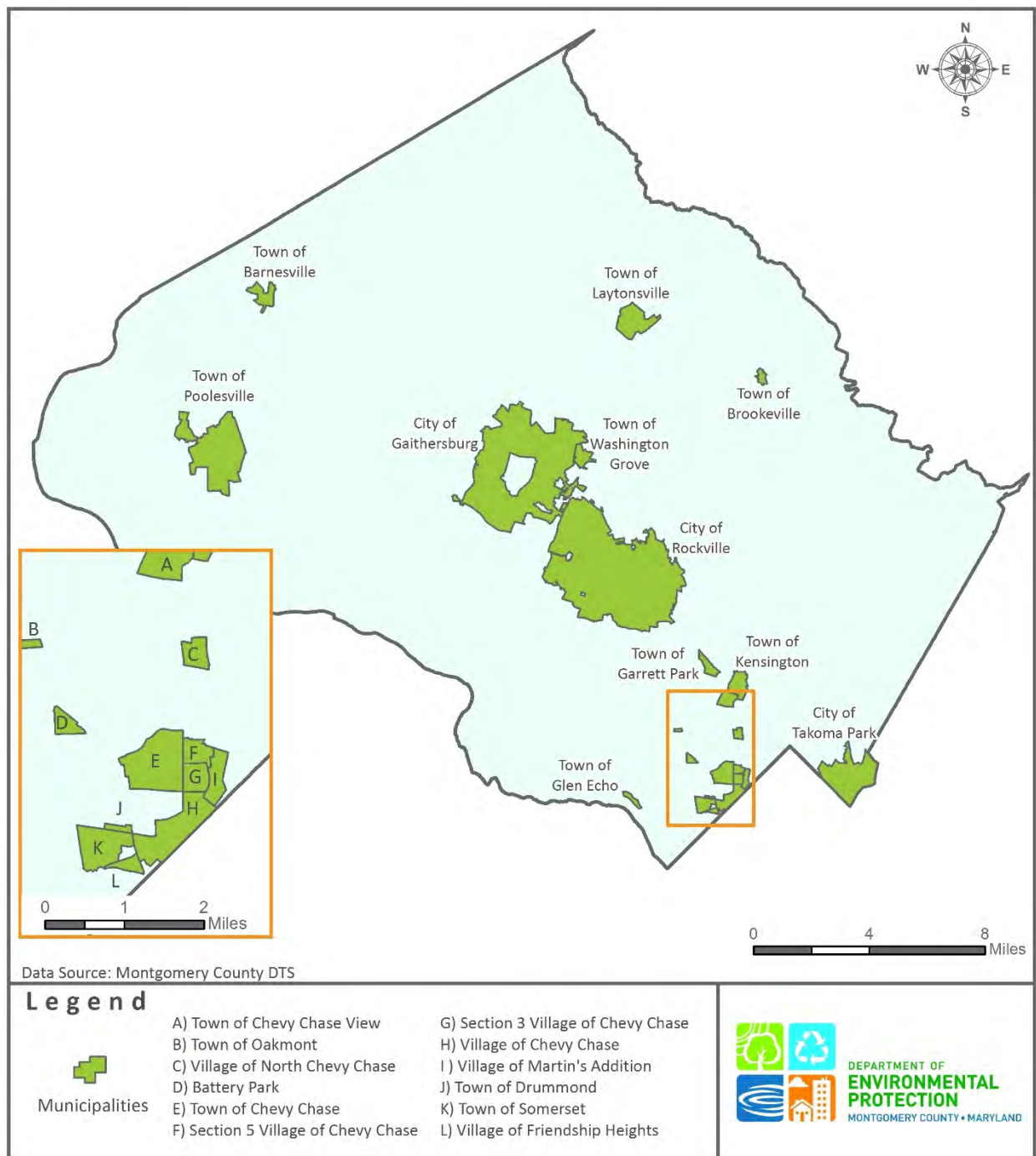
Title 26.03.03.02B of COMAR requires that *"each County plan shall include all or part of the subsidiary plans of the towns, municipal corporations, sanitary districts, privately owned facilities, and local, state and federal agencies having existing, planned or programmed development with the County 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 Plan.

Table 2.3 Population Estimates of Incorporated Municipalities in Montgomery County

Incorporated Municipality	Population
Barnesville town	180
Brookeville town	144
Chevy Chase town	2,992
Chevy Chase Section Five village	711
Chevy Chase Section Three village	791
Chevy Chase View town	986
Chevy Chase Village town	2,060
Gaithersburg city	68,289
Garrett Park town	1,050
Glen Echo town	271
Kensington town	2,374
Laytonsville town	378
Martin's Additions village	996
North Chevy Chase village	597
Poolesville town	5,242
Rockville city	68,268
Somerset town	1,280
Takoma Park city	17,768
Washington Grove town	561

Source: U.S. Census Bureau, Population Division, Population Estimate Program. Release date: May 2019
Research & Special Projects, Montgomery County Planning Department, M-NCPPC (10/31/2019)

Figure 2.2 Map of Montgomery County Including Municipalities



2.3 Employment Trends and Federal Facilities within the County

Montgomery County is the largest suburban employment center in the Metropolitan Washington Statistical Area and is second only to Baltimore City within Maryland. Montgomery County's economy was affected by the Great Recession (2008 – 2011); however, its employment shrank less than other jurisdictions in the MSA during the height of the recession. Employment in the County declined 1.8 percent between 2008 and 2011 compared to 3.9 percent nationwide³. The reason for this mild loss could be attributable to the role played by the federal government in the County's economy. Industries such as finance, construction, retail, and others were supported by federal funding directly through contracts and suppliers, or indirectly through the multiplier effects of County household spending from federal workers.

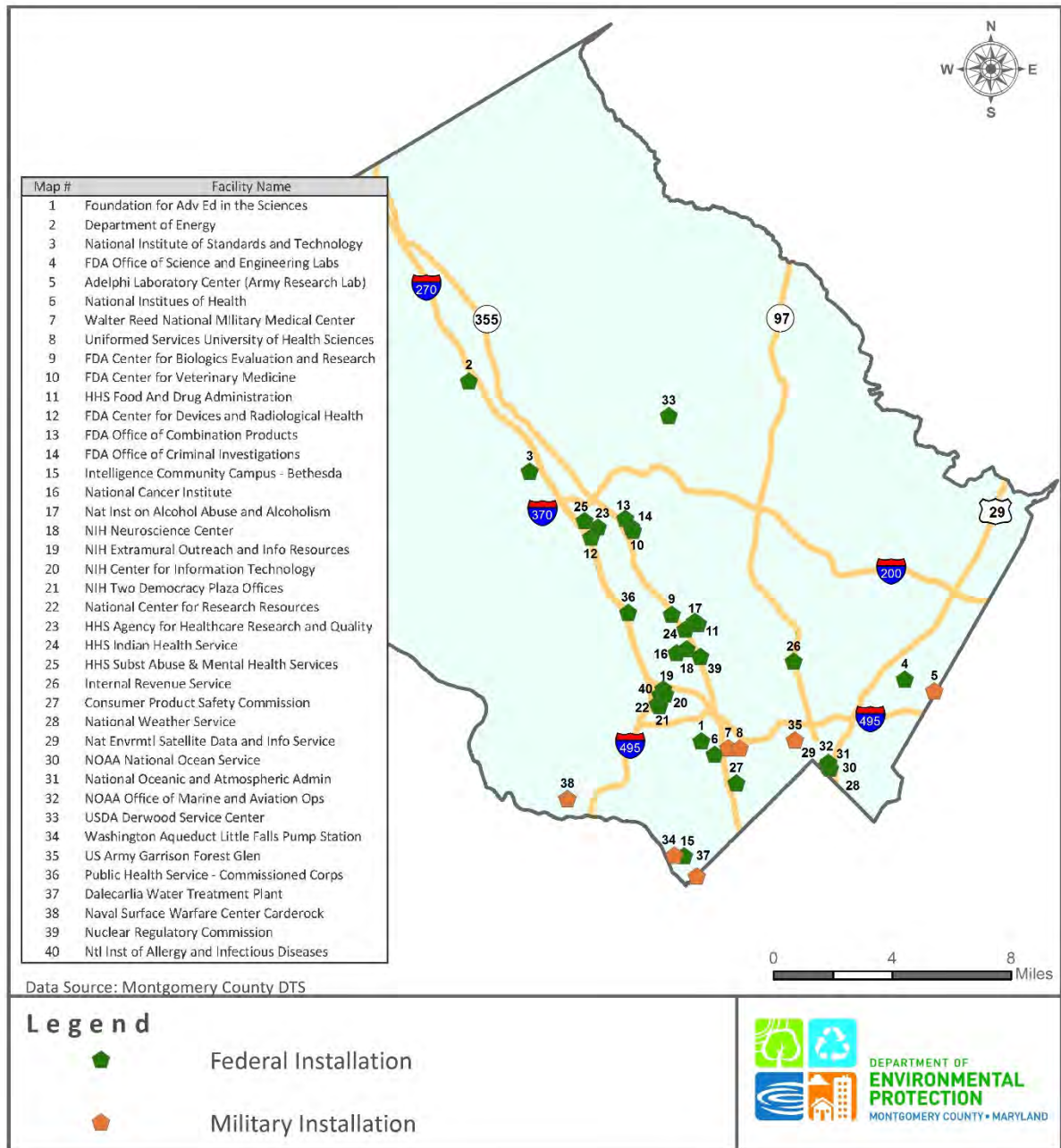
According to the Montgomery County Comprehensive Economic Strategy (CES), 2016, the County is an important contributor to the regional economy. The County represents 17 percent of the MSA total population.

The distribution of employment between the private and public sectors in the County has not changed since the 1990s. The County is both a major federal employment hub and a robust private sector employment center. The federal government is the top employer in Montgomery County with 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.

Within the private sector, the fastest growth has been in education, health and social services, professional management, and scientific services. Montgomery County's private sector industries generate \$75.1 billion in economic output in areas including 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.

³ Montgomery Planning Department Blog. Rick Liu, January 11, 2017

Figure 2.3 Map of Montgomery County Including Federal Installations



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 2019 to 2029, resulting in a projected employment increase of 59,260 in the year 2029. Table 2.4 shows the M-NCPPC "Round 9.1" projections for at-place employment.

Table 2.4 At-Place Employment, Montgomery County, Maryland 2019-2029.

Year	Estimated County Employment
2019	538,840
2020	543,500
2021	549,300
2022	555,100
2023	560,900
2024	566,700
2025	572,500
2026	578,900
2027	585,300
2028	591,700
2029	598,100

Source: M-NCPPC, Cooperative Forecast, Round 9.1, five-year increments 2020, 2025, and 2030. Intermediate years were interpolated.
The above years are calendar years, not fiscal years

2.4 Comprehensive Land Use Plan

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

The County's comprehensive land use plan, *"On Wedges and Corridors: A General Plan for the Maryland-Washington Regional District in Montgomery and Prince George's Counties (the General Plan)"* was adopted in 1964 and updated in December 1993. As a response to the technological, social, environmental, and economic changes that have occurred since the Plan's adoption, the Montgomery County Planning Department has commenced a multi-year planning effort to update the General Plan by June 2021.

Objective 9 in the Environment Chapter of the General Plan states: "Provide an adequate, self-sufficient, well-monitored, and ecologically sound system for the management of Montgomery County's solid wastes." The following strategies are listed to accomplish this objective:

- "Provide appropriate industrially zoned land necessary to support present and future waste management facilities, including local recycling;
- Consider land-use implications when developing a comprehensive solid waste management program;
- Minimize the environmental and other negative impacts of facilities that handle waste products through proper siting and design;
- Explore source reduction of waste through means such as charging collection fees in proportion to the amount of trash produced;
- Increase and promote the public and private use of recycled goods so that the amount of land devoted to landfills is minimized; and
- Cooperate with neighboring jurisdictions in sharing management practices and devising regional waste management strategies so that effective solutions to waste management can be achieved."

2.5 Zoning Requirements Related to Solid Waste Management Activities

Chapter 59⁴ 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 permitted by special exceptions approved on a case-by-case basis by the Board of Appeals. This Board reviews and holds public hearings on applications for special exceptions. The Board of Appeals also considers variance requests relating to deviations from prescribed limitations such as setbacks and height restrictions. A zoning text amendment is a mechanism by which the County Council can modify the Zoning Ordinance and authorize changes, additions, or deletions to zones or standards governing the use of zones. This Plan shall not be used to create or enforce local land use and zoning requirements. Also, subsequent zoning information in the Plan should refer back to this statement.

Section 3.6.9 of the Zoning Ordinance limits a landfill, incinerator, or transfer station as a conditional use in the Industrial zone. The Hearing Examiner may permit a Recycling Collection and Processing structure or land used for the collection and recovery of paper, metals, plastic, glass, lumber, presorted construction or demolition debris as limited use in the Industrial zone.

2.5.1 Agricultural Preservation

The County's diverse agricultural industry's 540 farms and 350 horticultural enterprises produce 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 percent are farmed as a primary occupation⁵.

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.

⁴ [Chapter 59: Zoning Code.pdf](#)

⁵ Montgomery County, Office of Agriculture, Agricultural Fact Sheet May 2016

The County and the State 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." The County also applied the Rural Density Transfer (RDT) zone to most agricultural areas in the northern and western parts of the County. Property owned in the RDT 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 RDT zone is limited to one dwelling per 25 acres. Historically, most landfill candidate sites have been located within RDT zoned areas.

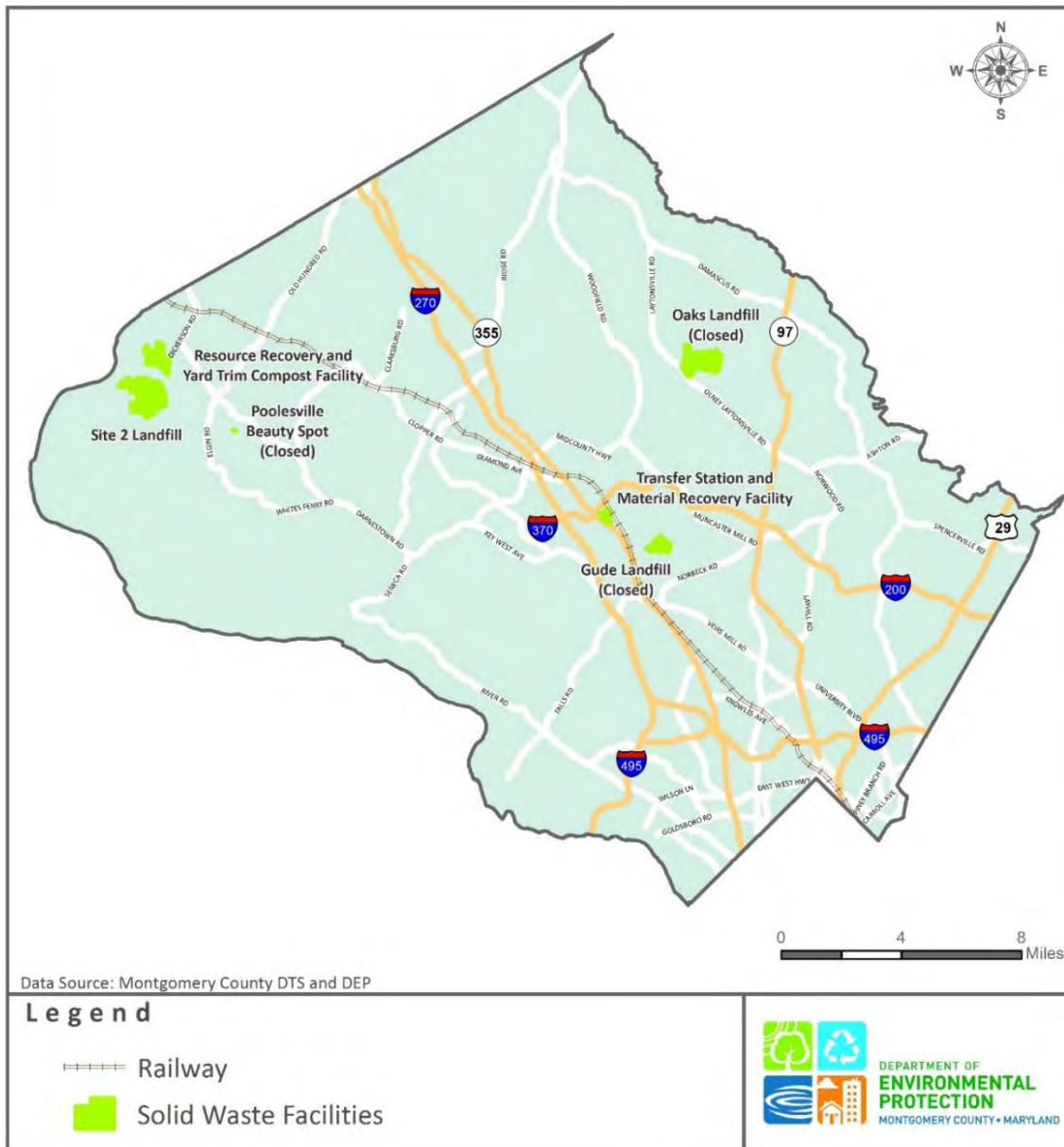
2.5.2 Transportation Considerations for Solid Waste Activities

Solid waste collection vehicles must service all areas of the County. In doing so, solid waste vehicles must safely navigate a wide range of road surfaces and conditions in a manner that minimizes 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 a.m. near residential neighborhoods. State and local transportation laws and regulations impose other safety and would 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 the 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 solid waste truck traffic through communities. "In 2017, the County entered a long-term contract through the NMWDA with Republic Service, Inc. for beneficial reuse of RRF ash. Transportation of the ash from the RRF is accomplished by rail. A small amount of bypass waste and non-processible waste are transported from the transfer station via truck to various disposal locations." A map of solid waste facilities and major roadways in the County appears as Figure 2.4.

Figure 2.4 Map of Solid Waste Facilities and Roadways in Montgomery County



CHAPTER THREE: SOLID WASTE GENERATION, COLLECTION, AND ACCEPTANCE SYSTEMS

This chapter addresses all the solid waste categories contained 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
- 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

Acronyms and solid waste terms used in this chapter and throughout this document are defined in Appendix A.

3.1 Solid Waste Generation

Table 3.1 displays CY17 actual solid waste generation by waste type and solid waste generation projections for the CY2020 to CY2030, 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 Plan 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 Transfer Station (TS) 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 processors reports, Annual Reports from businesses, and the annual effort to document recycling tonnages 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, Maryland (tons/yr) CY 2017 – CY 2030**

Item	Waste Category	2017 (Actual)	2020	2023	2027	2030
A	MSW Residential	310,331	300,953	306,291	312,119	317,016
B	MSW Commercial	208,891	200,902	189,288	187,213	191,198
C	Industrial (solids, liquid, etc.)	13,163	108,836	102,544	101,420	103,578
D	Institutional (schools, hospitals, etc.)	19,829	19,071	17,968	17,771	18,150
E	Land clearing and demolition debris (rubble)	257,324	266,504	265,742	269,112	266,437
F	Controlled hazardous substance (CHS)					
g	Dead animals					
h	Bulky or special wastes					
i	Vehicle tires					
j	Wastewater treatment plant sludges	24,116	24,869	25,572	26,543	27,295
k	Septage					
1	Asbestos	24	25	26	27	28
2	Concrete/Brick					
3	Special medical waste	3,191	3,291	3,384	3,513	3,613
4	Household Hazardous Waste & Eco-Wise	189	195	201	209	215
5	Soil					
6	Wood waste	47	48	49	51	52
7	Paint	151	155	159	164	167
8	Total Waste Disposed (Sum of Above except k)	937,256	924,849	911,224	918,142	927,749
9	Total Recycled (9a+9b)	740,147	795,924	845,771	896,443	927,036
9a	MRA Materials Recycled	616,732	668,653	714,900	760,602	787,346
	Recycled Ash/Back-End Metal (Included In Item 9a)	163,119	168,215	172,973	179,542	184,630
9b	Non-MRA Materials Recycled	123,415	127,271	130,871	135,841	139,690
10	Total Waste Managed (8+9)	1,514,284	1,552,558	1,584,022	1,635,043	1,670,155
11	Total Municipal Solid Waste Generated (see Appendix B for details)	1,103,051	1,137,893	1,170,492	1,215,730	1,250,988

Notes: Items a to k: Items based on COMAR Regulations 26.03.03.03. Items 1 to 8: Items based on MDE Instructions

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

Municipal Solid Waste (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 other 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.D "residential waste," "commercial waste," "industrial waste," and "institutional waste." MDE sent the baseline data (CY 2017) of this table in October 2018.

The total County MSW generation follows the methodology detailed in Appendix B, which yields approximately 1.1 million tons per year (Item 11 in Table 3.1). Generation projections for CY 2020 to CY 2030 are adjusted for increases in County population and employment 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 2017, the residential sector disposed of 310,331 tons of MSW. The data was derived by using a combination of weight reports from 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 consists of refuse and recyclables generated by businesses and non-profit organizations, including offices, bars and restaurants, retail and wholesale establishments, and hotels. Industrial solid waste consists of 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 Plan's content requires the distinction of "commercial," "industrial," and "institutional" MSW generation. Montgomery County estimates non-residential waste generation according to 81 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 61.1 percent, Industrial 33.1 percent, and Institutional 5.8 percent.

As shown in Table 3.1, In CY 2017, approximately 342,000 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 2030 is expected to be less than 300,000 tons.

3.1.3 Controlled Hazardous Substances

Controlled Hazardous Substances (CHS)¹, as defined in COMAR 26.13.01 is a solid waste which, because of its quantity, concentrations, or chemical, or physical characteristics, poses a substantial present or potential hazard to human health or the environment.

The MDE regulates Treatment, Storage, or Disposal (TSD) facilities of hazardous waste and requires the certification of drivers and vehicles that transport 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 COMAR².

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 provides small businesses with the opportunity 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.

1 For regulatory definition, see Section 7-201, the Environment Article of the Annotated Code of Maryland.

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

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

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 TS. All ECOWISE participants pre-register with the County in advance of 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 initial and renewal fees for the permit.

3.1.4 Households Hazardous Waste

Household Hazardous Waste (HHW) is not required to be handled separately as hazardous waste under state and federal law 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 during each year, to construction of the permanent drop-off facility at the TS in 2010. The drop-off facility is open during normal TS operating hours. These extensive

hours encourage greater use of the facility 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 2017, an estimated 189 tons of hazardous wastes were generated in the County. The projected total generation of HHW in 2030 is 214 tons.

3.1.5 Special Medical Waste

Special medical wastes, as defined in COMAR 26.13.11, require separate collection and disposal from MSW. It is generated by veterinary clinics, hospitals, doctors' offices, medical testing, and research laboratories. Special medical wastes include: 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 plan, there are no permitted special medical waste incinerators operating in Montgomery County. All special medical waste generated within the County is transported for disposal at private facilities outside Montgomery County. MDE must license Haulers of special medical waste. Table 3.1 shows that special medical waste reported by MDE for CY2017 was around 3,000 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. At the time of this report, one privately-owned, MDE permitted pet crematorium is operating the County.

3.1.7 Vehicle Scrap Tires

The State of Maryland Scrap Tire Law³ prohibits the disposal of tires in landfills. At the time of this Plan, no permitted scrap tire recycling facilities are located in the County. Many auto

³ Section 9-228, the Environment Article of the Annotated Code of Maryland

service centers and tire dealers in the County recycle their customers' tires at facilities outside of the County.

County residents may recycle up to five (5) scrap tires per year at the TS tire drop-off. CY 2017 TS records show 191 tons of tires (approximately 13,000 tires) were received at the TS and shipped out for recycling. County-wide, 7,200 tons of tires⁴ were recycled in the County.

3.1.8 Wastewater Treatment Biosolids

Under COMAR, biosolids are listed as solid waste and are defined as municipal wastewater solids. Current detailed information on the County management of wastewater is available in the "Ten-Year Comprehensive Water Supply and Sewerage Systems Plan 2018-2027 update⁵."

Biosolids are the nutrient-rich organic materials resulting from the treatment of domestic wastewater treatment facilities. Of all the wastewater generated in Montgomery County, approximately 80 percent is treated at the Blue Plains Wastewater Treatment Plant in Washington DC. The remaining 20 percent is treated in Montgomery County: Seneca Water Resource Recovery Facility (WRRF), Damascus WRRF, and the Town of Poolesville Wastewater Treatment Plant (WWTP). As shown in Table 3.2, these three plants produce at the three wastewater treatment plants an estimated 70 wet tons per day (wtpd) of biosolids. The Hyattstown wastewater treatment plant produces less than one wtpd of biosolids that are transferred to the Damascus WWTP. WSSC is responsible for the management of the biosolids generated from Seneca and Damascus WRRF.

Table 3.2 Approximate Daily Biosolids production 2015

Treatment Service Area	Daily production
Seneca WWTP	62
Damascus WWTP	4
Poolesville WWTP	4

Source: Ten-Year Comprehensive Water Supply and Sewerage Systems Plan 2020 annual update

Currently, most biosolids from the WSSC treatment plants in Montgomery County (Seneca WRRF, Damascus WRRF, and the Town of Poolesville Treatment Plant) are reused through land application programs on farmlands subject to requirements of State-issued sewage sludge utilization permits and nutrient management plans. Since 2015, the Blue Plains WWTP began using anaerobic digestion, converting over half the organic matter in biosolids

⁴Tires that are recycled into new products containing rubber (e.g., trashcans, storage containers, rubberized asphalt, etc.), or whole tires use for playgrounds.

⁵ <https://www.montgomerycountymd.gov/water/supply/county-water-plan.html#waterplan>

into methane to generate electricity to power operations at Blue Plains. Approximately 25 – 30 percent of the total biosolids produced at Blue Plains WWTP come from Montgomery County. Biosolids generated at the Blue Plains WWTP are mostly reused on farmlands through land application programs.

3.1.9 Litter

Maryland Litter Control Law

The Maryland Litter Control Law⁶ 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 50,000 homes in Montgomery County are not connected to the sewer system and use a septic system for wastewater treatment. Around two dozen homes in Montgomery County rely on sewage holding tanks. Septic system and sewage holding tanks are periodically pumped out by haulers permitted by WSSC. Haulers discharge biosolids and sewage into the sanitary sewer system at a controlled entry point located at the WSSC Muddy Branch facility.

Montgomery County estimates annual septage generation of approximately 18,000 wet tons per year. A "Septage Discharge Facility Planning & Implementation" project is included in the WSSC Capital Improvement Plan. If that plan is implemented, it will result in the construction

⁶ Section 10-110, the Criminal Law of the Annotated Code of Maryland (2010).

of three additional discharge facilities: a) The former Rock Creek WWTP, b) The Anacostia Waste Water Pump Station No. 2, and c) The Piscataway WWTP.

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 3.3, RRMD does not provide collection of recyclables or solid waste to multi-family properties or commercial businesses, non-profit organizations, or government facilities. The County (Collection District) is divided into two solid waste collection subdistricts; Subdistrict A and Subdistrict B, as shown in Figure 3.1.

Under the authority of Subsection 48-29 of the County Code, these service subdistricts may be expanded or reduced by Method 2 regulation.

Solid waste collected on behalf of the County by Independent Collection Contractors must be delivered to the TS or a County-designated facility. These contractors are not required to pay a tipping fee at the TS for residential solid waste collected on behalf of the County from single-family residences⁷ in the collection district. 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 trash and recycling collection services through competitively procured contracts with private service providers for single-family homes and townhomes, and residential properties with six or fewer units. Trash is collected curbside once a week and includes five 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.

Sub-district B

Private collectors known as Independent Collection Contractors provide the trash collection services in Sub-district B, with authorization by the County. An Independent

⁷ The County charges the tipping fees applicable to that refuse by means of a pre-paid disposal fee charged to the owners of single-family properties generating that waste.

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.

Table 3.3 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
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
Bulk Trash Collection	Sub-district A (5 scheduled pick-ups annually)	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

Incorporated Municipalities

The 19 incorporated municipalities in the County each have responsibility for collecting trash and recyclables within their jurisdictions. Some municipalities choose to contract with private commercial collectors or allow residents to contract with private commercial collectors. Municipalities may deliver waste to the County's Transfer Station. 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.

Table 3.4 below provides an overview of the trash and recycling services provided by the incorporated municipalities and cities in Montgomery County based on the publicly available information. Table 3.4 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).

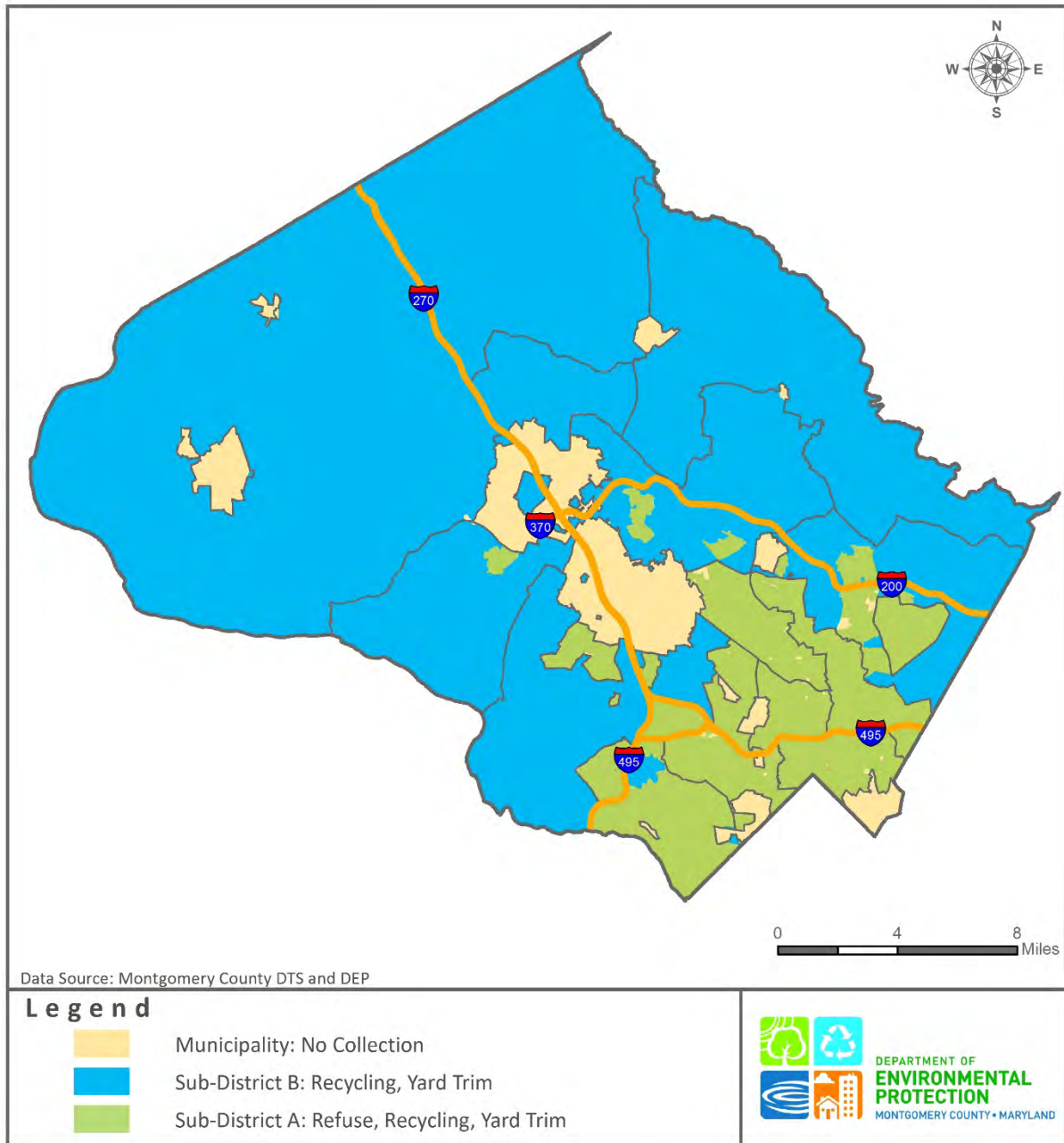
Table 3.4 Materials Management in Incorporated Cities and Municipalities

	Population	No. Hhlds	Trash Collection	Recycling Collection	Yard Trim/ Brush	Bulk Trash	Scrap Metal	Drop -Off	Commercial Collection
Incorporated Cities									
Gaithersburg	68,710	22,000	Private	Contracted	Contracted	Contracted	Public	No	Private
Rockville	68,401	23,686	Public	Public	Public	Public	Public	No	Private
Takoma Park	17,885	6,569	Public	Public	Public	Public	Public	No	Private
Incorporated Municipalities									
Barnesville (Town)	184	67	Not	Not Specified	Not Specified	Not	Not	No	Private
Brookeville (Town)	139	54	Public	Public	Not Specified	Not	Not	No	Private
Chevy Chase (Town)	9,545	3,795	Contracted	Contracted	Contracted	Contracted	Contracted	No	Private
Chevy Chase (Village)		721	Public	Public	Public	Public	Public	No	Private
Chevy Chase, Section 3	797	271	Contracted	Contracted	Contracted	Contracted	Contracted	No	Private
Chevy Chase, Section 5	717	222	Contracted	Contracted	Contracted	Contracted	Contracted	No	Private
Chevy Chase View (Town)	994	298	Contracted	Contracted	Contracted	Contracted	Contracted	No	Private
North Chevy Chase (Village)	593	189	Contracted	Contracted	Contracted	Contracted	Contracted	No	Private
Drummond (Village)		43	Contracted	Not Specified	Public-seasonal	Contracted-2x/yr		No	Private
Friendship Heights (Village)	4,698	3,000	Open	Open	Open	Open	Open	No	Private
Garrett Park (Town)	1,055	380	Contracted	Contracted	Contracted	Contracted	Contracted	No	Private
Glen Echo (Town)	273	96	Contracted	Contracted	Contracted	Contracted	Contracted	No	Private
Kensington (Town)	17,976	6,684	Contracted	Contracted	Contracted	Contracted	Contracted	No	Private
Laytonsville (Town)	380	127	Public	Public	Public-Seasonal	Public-2x/yr	Not	No	Private
Martin's Additions (Village)	1,004	321	Contracted	Contracted	Contracted-Seasonal	Contracted-4x/vr	Contracted	No	Private
Poolesville (Town)	5,269	1,602	Contracted	Contracted	Contracted	Contracted-1x/qtr	Contracted	No	Private
Somerset (Town)	1,285	407	Contracted	Contracted	Contracted	Not Specified	Not Specified	No	Private
Washington Grove (Town)	565	230	Contracted	Contracted	Contracted-Seasonal	Contracted-2x/yr		No	Private

Source: MSW Consultants. US Census, Website Information

Note: Contracted = administered/managed by the City/Town/Village

Figure 3.1 Map of Collection Subdistricts A and B



Multi-family and Non-Residential

Residential properties with seven or more dwelling units are defined as multi-family properties. Commercial, industrial, and institutional properties, including non-profit organizations and government facilities at the federal, state, and local levels, are categorized as non-residential 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 waste acceptance facility.

Bulk Trash

The same private sector collectors under contract with the County collect bulky waste generated by single-family residences in Sub-district A and the regular household waste collection at the curb. Before their collection day, customers must call MC311 or schedule the additional pick-up online. Residents are allowed up to 5 pick-ups 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 5 or more bags or cans of trash, large non-metal items such as furniture, carpets, or mattresses. At least one side of the item must be less than 4 feet wide to fit in the collection vehicle. Construction and Demolition (C&D) waste, propane tanks, hazardous materials are not considered bulk trash but may be taken to the Shady Grove Transfer Station or Poolesville Beauty Spot. There is no charge for disposing of loads less than 500 pounds for County residents showing proof of residency.

Those residents living in Sub-district B or incorporated municipalities must make their arrangements for the collection of bulk trash or take it to the Shady Grove Processing Facility and Transfer Station or the Poolesville Beauty Spot.

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, cardboard, glass containers, aluminum cans, and foil products, bi-metal cans, plastics, grass, 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 or fewer dwelling units.

The County works with homeowner associations, management groups, and other citizens groups to customize, whenever feasible, recycling collection services to meet the special needs of user groups, including townhouse residents, senior citizens, and residents with disabilities. This includes special bins or 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 collection. The County provides 22-gallon blue bins for aluminum products, cans, glass bottles and jars, and plastics bottles and containers. 64-gallon wheeled carts are provided for 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.

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 collectors. The same materials are mandated for recycling as in the single-family residential recycling program. The same materials are banned from the trash as in the single-family residential program. Collectors must formally notify, either electronically or in writing, any generators that place unacceptable materials in the recycling containers. Collectors deliver recyclable material to private facilities both within and outside of the County. The County offers and provides 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 or more dwelling units by property owners or managers of apartment buildings and councils of units owners of condominiums. 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 with a private collector to provide a separate collection of specified recyclable materials. The same spectrum of recyclable materials collected from the single-family sector is stipulated and includes, among other materials, plastic, metal, and glass containers. 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 not acceptable, 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 requirement for public schools. The County's strategy for the collection, processing, marketing, and disposition of recyclable materials from public schools is described in "Montgomery County Public Schools Recycling Action Plan, June 2014⁸" 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, for satisfying 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:

⁸ [Montgomery County Public Schools Action Plan 2014.pdf](#)

- 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 recommends to the event organizers described above that they consider collecting food scraps for recycling and reporting to the County on recycling activities.

Office Building 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 Bill is in Appendix F of this Plan.

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 Household Hazardous Waste (HHW) program for residents and Universal Wastes for a small fee from 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 8:00 p.m. Monday to Friday; 7:00 a.m. to 5:00 p.m. on 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. Businesses can only participate through EcoWise. Clean Harbors processes and separates the glass, metal, and mercury from the bulbs and ships the materials to recycling markets.

Scrap Metal

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

Table 3.5 below presents the number of households served and total annual tons of trash, recycling, scrap metal, and yard trim collected for the thirteen service areas comprising the two Sub-districts.

Table 3.5 Number of Households Served and Tons Managed by District (CY17)

District	Number of Households		Annual Tons (CY2017)				Total
	Trash Collection Service	Recycling & Yard Trim Collection Service	Trash	Recycling ⁽¹⁾	Scrap Metal ⁽²⁾	Yard Trim	
Area 1	20,725	21,303	15,025	4,812	110	4,719	24,666
Area 2	15,346	15,670	10,842	7,790	-	3,629	22,260
Area 3	14,070	14,468	15,466	5,252	56	2,654	23,429
Area 4	18,951	19,738	13,148	11,429	213	5,106	29,896
Area 5	15,757	15,945	12,636	3,071	154	3,770	19,631
Area 6	3,729	22,711	4,288	6,294	13	2,319	12,914
Area 7	-	17,004	-	4,766	-	1,315	6,081
Area 8	2,397	21,830	592	6,532	217	3,516	10,857
Area 9	-	16,004	101	5,959	290	2,167	8,516
Area 10	-	6,258	18	1,992	-	1,015	3,025
Area 11	-	16,681	-	4,752	14	2,136	6,902
Area 12	-	20,522	-	5,433	-	1,454	6,887
Area 13	940	9,739	222	3,452	8	1,054	4,735
TOTAL	91,915	217,873	72,337	71,532	1,075	34,855	179,800

1. Recycling includes commingled material collected (aluminum products, cans, glass bottles and jars, and plastics bottles and containers) in the County provided 22-gallon blue bins and mixed paper products collected in a 64 gallon wheeled cart (or set-out in paper bags, cardboard boxes, or bundled with twine).
2. Scrap metal includes those materials collected at the curb. This service is set up by calling 311.

Source: MSW Consultants, Information provided by Montgomery County (Tonnage information from scale reports for tons managed in 2017 at Shady Grove Transfer Station and Processing Facility)

Yard Trim

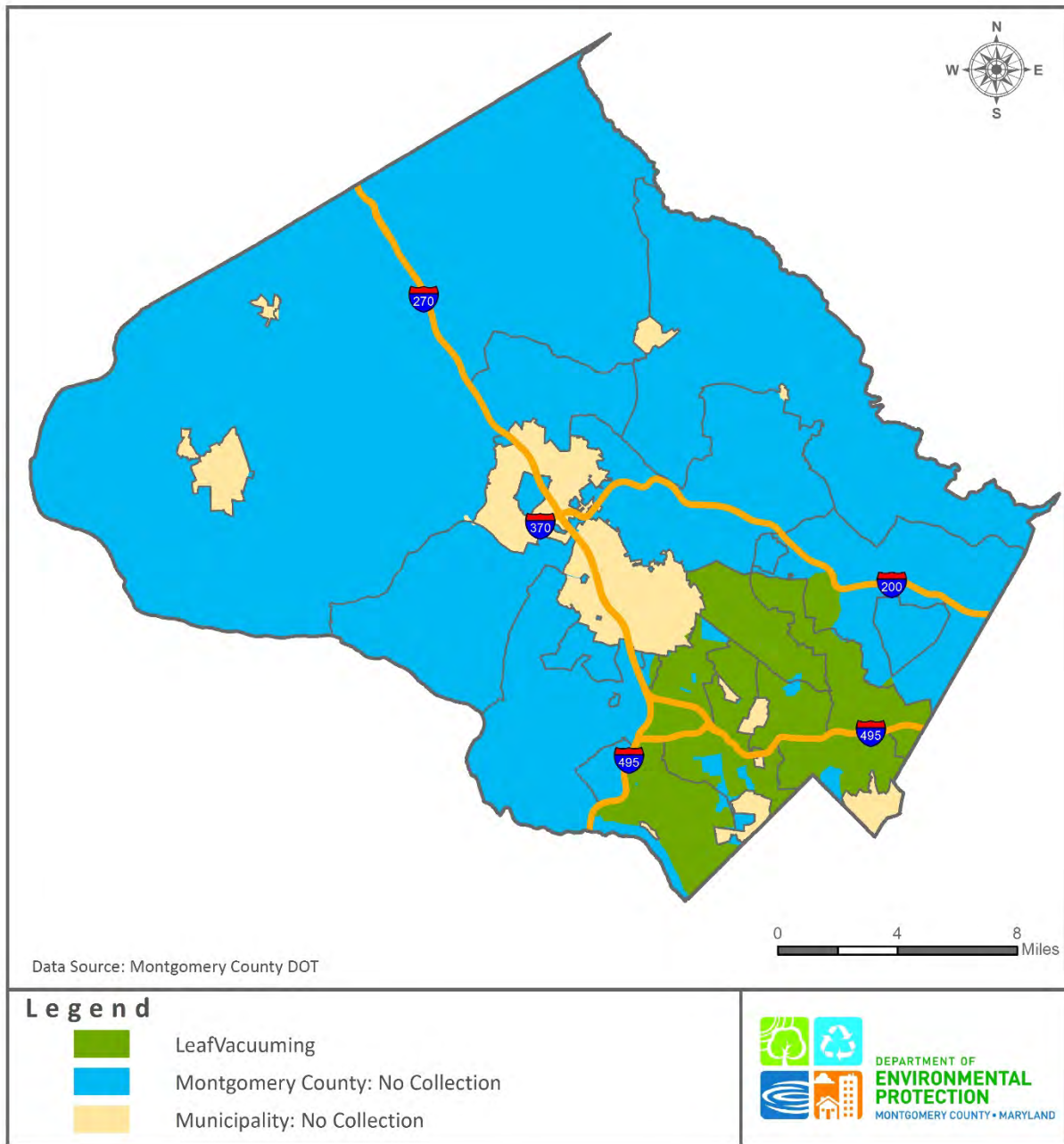
All single-family residences in both Sub-districts are provided yard trim recycling collection once per week year-round, with a maximum of 45 pounds for each container or bundle set-out. Materials must not be set out in plastic bags. Residents can set out yard trimmings in labeled containers or paper yard trim bags. Limbs that are not in labeled containers must be bundled.

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

Montgomery County Department of Transportation (MCDOT) provides seasonal (generally November through January) collection of leaves from within the Leaf Collection District, shown in Figure 3.2. Leaves are vacuumed from public rights-of-way and transported to the Montgomery County Yard Trim Composting Facility for composting. The County has loped a procedure⁹ that requires the support of not less than 80 percent of the households in the neighborhood/area before opting in or out of the Leaf Collection District.

⁹ <https://www.montgomerycountymd.gov/SWS/Resources/Files/store/ER/ER6-99AM.pdf>

Figure 3.2 Map of Leaf Collection District



3.4 In-County Solid Waste Acceptance Facilities

As displayed in Table 3.6, there are several waste management facilities in Montgomery County.

- In Maryland, landfills, transfer stations, processing facilities, resource recovery facilities, and special medical waste incinerators require refuse disposal permit/air permit from MDE.
- Scrap tire collection and recycling facilities require licenses for their operations from MDE.
- Natural wood waste and composting facilities require permits from MDE.
- Solid waste facilities may be subject to other permit requirements (such as stormwater runoff control).

Table 3.6 Solid Waste Acceptance and Major Composting Facilities Located in Montgomery County

Facility Type/Name	Location (Maryland Grid Coordinates)	Acres	Owner	Permit Type	Operating Status	Remain ing Life	Types of Waste	Annual Tons ¹⁰
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	75,849
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	608,309 56,521 ¹¹ 55,480 29,009
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	Solid Waste loaded on the rail (includes some processable and C&D)	575,162
Site 2 Landfill Site (not constructed; held in reserve, see Section 3.3.1.7)	Near Martinsburg Rd & Wasche Rd Dickerson (1183472, 553143)	820	Montgomery County	Refuse Disposal Permit	Land reserved for possible future need	--	--	--
Composting Facilities Montgomery County Yard Trim Compost Facility	21210 Martinsburg Rd Dickerson (1185038, 558347)	49	Montgomery County	Composting	Active	Indefinite	Leaves and grass	55,480
ACME Biomass Reduction, Inc. Composting Facility	21601 New Hampshire Av Brookville	107.5	Robert Turner	Composting Permit	Active	Indefinite	Yard Trimmings	19,000

¹⁰ Annual tons received by County Facilities are based on the materials flow diagram used for the MRA report

¹¹ Non-burnable materials

3.5 County's Solid Waste Acceptance Facilities

Montgomery County owns several solid waste management facilities, as shown in Figure 2.4 in Chapter 2. These include the Materials Recovery Facility (MRF), the Shady Grove Processing Facility and Transfer Station (TS), 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 solid waste generated in the County. 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 3.3, it is located adjacent to the MRF, also known as the Recycling Center, and receives trash and recyclables from permitted solid waste haulers and 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 rail haul of processible (i.e., combustible) waste from the Transfer Station to the Resource Recovery Facility (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.

There are four compactors at the TS that 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 TS campus for shipment to the RRF. Processible waste can also be by-passed 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 TPD of MSW delivered via commercial and residential vehicles. Sixty-five percent of the vehicular traffic is made up of smaller (less than 3-ton payload) vehicles.

The Transfer Station utilizes two entrances, the Shady Grove truck entrance and the Route 355 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, mini-vans carrying less than 500 pounds) per day.

Figure 3.3 Site Plan of Shady Grove Transfer Station and Processing Facility



Source: Google image, the photograph was taken 04/2018

Seven radioactive waste detectors are located at several entrances to safeguard against unacceptable waste. These locations include the entrance to the main tipping floor, the entrance at the PUF area, the three inbound truck scales, the entrance to the annex tipping floor, and the contractor's dedicated scale.

All refuse delivered to the TS in loads over 500 pounds is weighed and recorded, and all refuse leaving the TS is weighed and recorded. Inspectors conduct routine checks of incoming loads for unacceptable materials. Non-processible waste received at the TS is transported to

landfills in the region with most of the material currently going to the Mountain View Reclamation Landfill near Greencastle, Pennsylvania.

Drop-off Areas at the Transfer Station

The TS accepts a wide variety of materials which can be dropped off by the residential and non-residential sector. The TS has locations for the drop-off of various materials to be properly disposed of, recycled, and reused as outlined below and shown in Figure 3.3. Items that may be dropped off at the TS include household hazardous waste (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 Small Quantity Generators (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 Shady Grove Processing Facility and 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 \$60 per ton of trash. There is no charge for dropping off recyclables, nor limitation on the amount of most recyclables delivered.
- The TS provides a drop-off location for recycling materials such as electronics, textiles, bulky rigid plastics, scrap metal, and tires. Reusable textiles and those that are not in a condition to be reused are accepted.
- 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 a partnership with several non-profit organizations for reuse of these materials. Materials that are not considered to be in a reusable condition 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. The majority 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 for no charge and sold to commercial mulch vendors.

3.5.2 Materials Recovery Facility (MRF)

The Materials Recovery Facility (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 Maryland Environmental Service (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, and lids and containers, aluminum cans and foil products, as well as steel and bimetal cans¹². The MRF receives and sorts materials five days a week.

The Commingled Containers Processing area: Mechanical and hand separation is used to sort and bale each of the commingled containers; glass bottles and jars are sorted but 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 (TPD) or 10 tons per hour (TPH) of commingled materials but is currently receiving 130-150 TPD (or 16- 19 TPH) of commingled recyclables per day, resulting in the need to by-pass a large percentage of incoming material. The excess commingled materials are by-passed via transfer trailer to a single-stream MRF in York County, PA. There are 52 workers at the MRF each day, working one shift per day, five days a week, depending on the volume of materials received.

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

¹² More Information about acceptable materials can be found: [Executive Regulation 1-15: Residential and Commercial Recycling](#)

3.5.3 Yard Trim Composting Facility

In 1983, the County purchased the former "Matthews Farm" near Dickerson, Maryland, where WSSC operated a 118-acre sewage sludge composting facility. The County converted the site into the Montgomery County Yard Trim Composting Facility (MCYTCF). The MCYTCF is operated by the Maryland Environmental Service (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. Leaves and grass 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 direct to the MCYTCF.

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

The finished product of the aerobic composting process at the MCYTCF is marketed in bags and bulk under the Leafgro® brand name. Leafgro® is shipped by truck into the commercial bulk and bagged soil amendment market.

The MCYTCF operates under the 1996 Agreement of Settlement and Compromise between the Sugarloaf Citizens Association (SCA) and the County. Under this agreement, yard trim handled and processed at the MCYTCF is capped at 77,000 tons per fiscal year. Production of bagged compost was originally capped at 550,000 per fiscal year. In FY 2017, the cap was amended to 650,000 bags per fiscal year. The agreement includes but is not limited to, stipulations on operating hours, equipment, staffing levels, and various operational parameters to minimize any impact of MCYTCF operations on the surrounding community. Under the agreement, the 77,000 ton cap of material handled and processed may be exceeded only for pilot programs, and only with prior written approval from the SCA.

The County aggressively promotes grasscycling and backyard composting to reduce the amount of yard trim that would require processing and stay under the maximum allowable cap at the MCYTCF. County residents may obtain compost bins at no additional charge to encourage County residents to enjoy the benefits of converting their yard trim materials into a natural soil amendment.

3.5.4 Resource Recovery Facility

The Montgomery County Resource Recovery Facility (MCRRF) is an energy from waste (EfW) facility that employs a mass burn combustion technology to reduce the volume of MSW while generating electricity. Covanta Montgomery, Inc. operates the MCRRF on behalf of the NMWDA and the County.

The MCRRF is located in Dickerson, Maryland, on 34 acres of land adjacent to GenOn's Dickerson generating station. The NMWDA sells electricity generated at the MCRRF and Renewable Energy Credits (REC's) into the regional market as a member of PJM Interconnection.

The MCRRF has three (3), 600 ton per day waterwall furnaces with Martin reverse reciprocating grates. Each boiler generates approximately 171,100 pounds of steam per hour at 865 pounds per square inch (psi) and 830°F. The steam is used to turn a GE turbine with a generation capacity of 63 MW of electricity.

On behalf of the County, NMWDA provided financing for the design and construction of the MCRRF and required transportation improvements. The design and construction loans were paid off in 2016. NMWDA also manages the contract and service agreement with Covanta Montgomery, Inc., a subsidiary of Covanta Energy Corporation, for the operation and maintenance of the MCRRF, 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 MCRRF is currently operating under the second 5-year extension period, which ends in April 2026.

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.

Electricity Sales Agreement – The NMWDA sells the electricity generated at the MCRRF into the PJM energy market. The NMWDA also sells the capacity credits and the Renewable

Energy Credits (REC) generated by the facility into the PJM capacity market and the open REC market, respectively.

Monitoring Program – DEP monitors MCRRF 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 removal of nitrogen oxides (NO_x), 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 MCRRF source emissions."¹³

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 and furans, trace metals, including arsenic, beryllium, chromium, cadmium, nickel, lead, and mercury.

In 2009, the County upgraded the MCRRF air pollution control (APC) system, reducing NO_x emissions by approximately 50 percent. The new NO_x control system eliminated the need for the hazardous material anhydrous ammonia to be used and stored at the MCRRF.

Covanta Montgomery, Inc. participates in the Voluntary Protection Program (VPP) included under the Occupational Safety and Health Act (OSHA). To qualify for and maintain participation in the VPP, Covanta Montgomery, Inc. is rigorously audited and inspected regularly by Maryland Occupational Safety and Health. Audit and inspection results must document Covanta Montgomery, Inc. achieving and maintaining continuous improvement in workplace safety and health.

Through the Service Agreement or Change Orders, DEP, in cooperation with NMWDA and Covanta Montgomery, will require changes or improvements to the MCRRF'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 MCRRF was designed and is operated, to not compete with the County's waste reduction, reuse, and recycling initiatives. To ensure a balance between each

¹³ 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)

component of the County's MSW processing system, the MCRRF 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 MCRRF to 95 percent of capacity. A target of 85 – 95% of capacity is maintained to ensure permit limits are not exceeded. The MCRRF's refuse disposal permit allows a maximum of 689,000 tons of waste per calendar year to be processed at the MCRRF. In CY 2017 the RRF accepted 575,162 tons of waste, which is about 87.5 percent of its capacity.

The County maintains a competitive tip fee to control the amount of processible waste delivered to the facility. Simultaneously, progress toward achieving the 70 percent recycling goal also helps moderate the amount of incoming processible waste.

MSW deliveries to the MCRRF can vary greatly. The annual peak volume is in June, with a winter peak occurring in December. The MCRRF's annual permit limit is based on the nominal design capacity of 1,800 TPD. Because the MCRRF can safely operate above 1,800 TPD, it is the County's practice to process at higher rates during peak periods of delivery to minimize 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 the close of the calendar quarter. The County Executive must identify the actions taken or recommended to reduce demand on the MCRRF. 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 tracks on a semi-annual basis.

MCRRF 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 wastes if the MCRRF cannot accept waste due to a 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 for residents to 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 located 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. Covanta, the current contractor, transports the material 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 is to 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 agriculture purposes. Under the Letter of Understanding with the SCA, the County must give notice at least one year in advance of the anticipated construction start date.

3.6 Waste Transportation System

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

Transfer Station to RRF: Processible Waste and Yard Trim

Processible¹⁴ waste received at the TS is hauled in enclosed forty-foot long intermodal containers, 18 miles by rail to the RRF. Containers are stacked two high on lightweight, special purpose rail cars and travel via an existing railroad right-of-way between a railroad yard adjacent to the existing TS 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 MCYTFC is transported from the TS via rail to the RRF and from there by truck to the MCYTFC.

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

In 2017, NMWDA entered into a contract with Old Dominion Landfill in Henrico County, Virginia, for transportation and recycling of ash residue from the MCRRF. Ash residue delivered to the Old Dominion Landfill is processed to screen the material into two sizes. During the

¹⁴ Processible Waste – waste that enters the County's waste system and is deemed acceptable for processing at the Resource Recovery Facility.

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 has an initial term of seven years, expiring on June 30, 2024, with an additional seven-year renewal term.

Covanta's contract includes the management of non-processible waste received at the Transfer Station. This contract also allows Covanta to utilize other disposal facilities for non-processible wastes.

At the MCRRF, occasionally, small amounts of non-processible waste are loaded with ash into containers and shipped by rail to the landfill. The Service Agreement specifies the conditions and requirements for waste by-pass and whether the County or Covanta pays for the cost of by-pass.

Non-processible waste that can be recycled is sent to various regional reclamation facilities. Under the contract with Covanta, it can transport non-processible waste and by-pass waste for disposal at approved disposal facilities at the discretion of Covanta.

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 located 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 both within the County and in 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 County's Transfer Station scale house records, they provide an important part of the accounting performed by the County for its solid waste system-wide tonnage accounting.

3.7.1 MSW handled by Private Haulers

As shown in Table 3.7, in 2017, Approximately 120,000 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.

Table 3.7 Outside Montgomery County Facilities Utilized by Private Sector to Dispose of Municipal Solid Waste in CY2017

Solid Waste Disposal Facilities Used CY2017	Total Tons
Annapolis Junction	71,803.02
Fort Totten	19,648.71
Ameriwest	6,179.57
Waste Management (Northeast Transfer Station)	5,440.83
Benning Rd Transfer Station	3,851.31
Recycle One	3,580.85
Federal IPC	3,429.79
WMX Manassas Transfer Station	1,868.36
Curtis Bay	1,169.00
Fairfax County 1-95 WTE	800.00
Recycle America Alliance	511.13
Fairfax Covanta	456.39
Small amounts were taken to several other facilities (i.e., King George, Rolloff Express, Alexandria WTE, BRESKO, etc.)	1,403.36
Total MSW disposed at private facilities	120,142.32

Source: Recycling and Resource Management Division based on 2017 MRA Report

Fort Totten and Benning Road are owned by the District of Columbia government. Both facilities were renovated in 2009. Currently, they have a combined annual throughput capacity of one million tons per year (tpy).¹⁵ Annapolis Junction facility is permitted for 3,000 tons per day

¹⁵ Personal communication with Jeffery Dickerson, District of Columbia, 2/5/2013.

(tpd) but typically handles only about 2,000 tpd. The processing capacities of these facilities are not fully utilized.

Private sector collectors have and are expected to continue to utilize facilities outside the County for disposal and to 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

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

In 2017 approximately 275,000 tons of C&D materials were either reported by private haulers and or by scale records at the Transfer Station as generated in the County. Of the C&D generated, 49 percent was managed by Montgomery County, and the private sector handled 51 percent. Historically, the bulk of this type of waste was handled almost exclusively by the private sector, but in recent years, the County's role has increased. The continued use of the TS to dispose of C&D materials create more pressure on the already constrained system. Table 3.8 below shows the breakdown of how C&D generated in the County was managed, recycled, and disposed of in CY17.

Table 3.8 Tons of Construction and Demolition Debris Recycled and Disposed in CY 2017

Management of C&D Debris	Tons	% Managed
Total Tons Received by Montgomery County	133,689	49%
Recycled by County (does not count toward recycling rate) ¹	41,584	15%
Disposed by County via its Out-of-County landfill contract	19,142	7%
Burned by County in RRF (remaining ash also disposed in Out-of-County Landfill)	72,963	27%
Total Tons Handled Entirely by the Private Sector	141,656	51%
Recycled (does not count toward recycling rate) ¹	65,950	24%
Disposed	75,706	27%
Total Tons Managed	275,345	100%

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

As noted in Table 3.9, 95 percent of the C&D collected by private haulers in CY 2017 was managed by twelve facilities. Two of them managed 50 percent of the total C&D: Ritchie Land Rubble Landfill, and C&D Recovery, LLC Processing Facility. The latter is a private C&D processing facility located in Montgomery County. According to the haulers' report, C&D materials were also transported to 25 other facilities in smaller amounts.

Table 3.9 C&D Acceptance Facilities

Facility Name	Disposed	Asphalt Recycled	Concrete Recycled	Gen. Recycled	Total
Ritchie Landfill	26,505	51	11,325	7,015	44,897
C & D Recovery	16,725	2,998	971	4,608	25,302
Honey Go Run	14,339		3,843		18,182
Sun Recycling	3,720			10,733	14,453
Comus Materials		117	12,693		12,810
Recycle One	4,919				4,919
Eyler Rubblefill				4,216	4,216
Ameriwaste	3,261		665	157	4,082
The Recycle Center		1,208		908	2,116
Brandywine Sand & Gravel	1,498				1,498
Reichs Ford Farm	558		594		1,152
Merrifield	493		441		935
a. Subtotal	72,018	4,374	30,532	27,636	134,561
b. Other 25 private facilities	3,688	70	1,729	1,608	7,095
Total tons processed	75,706	4,444	32,261	29,245	141,656

Figure 3.4, below, shows a map of the facilities most commonly used by the private sector noted in Table 3.9. This map shows acceptance facilities in Maryland, Virginia, and DC. The map only shows those reported by private haulers as having been used to process C&D generated within Montgomery County. Therefore, Figure 3.4 does not represent all the facilities available for processing C&D generated in Montgomery County.

Figure 3.4 C&D Acceptance Facilities



CHAPTER FOUR: ASSESSMENT OF SOLID WASTE MANAGEMENT NEEDS

The County balances a variety of 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 provides an assessment of the solid waste facilities' constraints and a description of 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
- 4.2 Special Waste Streams: Management Needs
- 4.3 Assessments and Constraints on Current Acceptance Facilities
- 4.4 Constraints on New Solid Waste Acceptance Facilities

4.1 Municipal Solid Waste: Management Needs

As presented in Chapter 3, approximately 1,103,000 tons of MSW were generated in the County during CY 2017 (see Appendix B); this amount is expected to increase by approximately 1.25 percent by 2030. Ideally, with the enhancements to the current diversion and recycling programs stated in Chapter 5, the amounts of tons disposed will be minimized.

Education, technical assistance, and training programs are an essential component 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 Consumer Education

Current Conditions and Constraints: Montgomery County has conducted public information and outreach activities for many solid waste programs. The County has developed an on-going educational program to inform residents and businesses about waste reduction, reuse, and recycling, as well as other solid waste management initiatives. These efforts include the following:

- Single-family curbside recycling;
- Multi-family waste reduction and recycling (by apartment, condominium and co-op properties);
- Non-residential waste reduction and recycling (by businesses, organizations, both for-profit and non-profit, as well as government facilities);
- Reduction of Yard trim (composting and grasscycling);
- Food scraps recycling;
- Waste reduction;
- Reuse, including donation programs;
- Procurement of recycled and recyclable products; and
- HHW reduction and proper disposal.

Education, technical assistance, and training activities utilize various information dissemination techniques and are 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;
- Brochures, flyers, and fact sheets specific to various programs (including commercial recycling, multi-family recycling, curbside recycling, grasscycling, composting, special materials drop-offs, and HHW);
- Comprehensive guide about waste reduction, reuse, recycling and solid waste services distributed to single-family residents;
- Development and distribution of specialized handbooks and resource guides (including the Business Recycling Handbook, the Multi-Family Property Managers' Recycling Handbook and the Handbook for Businesses Generating Small Quantities of Hazardous Waste);
- Video presentations 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;
- Cable television programs featuring current topics in solid waste management;
- Targeted direct mailings;
- Multi-media educational campaigns to increase recycling awareness;
- Presentations to civic groups, schools, chambers of commerce, business associations, condominium board meetings, tenant/resident association meetings, and at 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;
- Seminars and workshops on varied topics (including business and multi-family recycling and regulations and backyard/on-site composting techniques); and
- Incentives, including backyard compost bins at no additional charge, to promote grasscycling and backyard composting.

Recycling Volunteer Program: This program is intended to increase 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 educates and trains members of the community to perform several functions, including: (1) giving speeches and making presentations to civic associations, service clubs, and other organizations requesting 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) staffing recycling booths and exhibits at special events, such as the Montgomery County Agricultural Fair.

Recycling volunteers augment County resources through grassroots efforts to increase participation in the County's waste reduction, reuse, and recycling programs. From its inception, the dedicated corps of recycling volunteers have contributed tens of thousands of hours of service and directly reached hundreds of thousands of people. The hours served by volunteers from 2008 are listed below.

Calendar Year	Hours Served by Volunteers
2008	1514
2009	1217
2010	1960
2011	1719
2012	1844
2013	1436
2014	1425
2015	1216
2016	1179
2017	1602
2018	1680

SORRT: The SORRT Program (Smart Organizations Reduce and Recycle Tons) serves as an information network that promotes and supports business waste reduction and recycling. Through SORRT, the County provides businesses, non-profit organizations, government agencies, and private institutions with technical support, education 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 provides this direct assistance to the owners, managers, employees, and customers/patrons of businesses and organizations. The SORRT Program reaches thousands of County businesses and organizations annually.

TRRAC: The TRRAC Program (Think Reduce and Recycle at Apartments and Condominiums) serves as an information network that promotes and supports waste reduction, reuse, and recycling at multi-family (apartment and condominium) properties. Through TRRAC, the County provides building owners, managers, on-site staff, and residents with technical support, education 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 Schools: DEP provides waste reduction, reuse, and recycling outreach and education upon request by 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 the public-school system, must comply with all waste reduction and recycling requirements governing County businesses.

The Department 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. The Department's annual submission for the County Executive's annual operating budget includes a summary of findings of participation studies, focus groups, surveys, and other research used to evaluate the effectiveness of the techniques used. The summary describes how these findings justify the specific outreach, education, training, and technical assistance proposed for funding in the upcoming fiscal year.

Needs Assessment and Plan Direction: As indicated in section 4.1.5, the County recycled over 56 percent of its MSW stream in CY 2017. This rate has been achieved by creating recycling programs and by encouraging residents and employees to participate. The County recognizes that on-going outreach and education, technical assistance, and training efforts are a critical element in both 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 percent 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 use of a percentage price preference (up to 10 percent) 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 and 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 take all practicable efforts to promote maximum use of recycled materials by County agencies.

4.1.3 Waste Reduction

Waste reduction is the preferred method 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 projections of future population and employment growth 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 refine its waste generation projections. On-going monitoring and periodic revision of the waste generation rates will assist the County in evaluating solid waste programs and implementing program changes as needed. The County will adjust its baseline per capita and per employee waste generation rate assumptions based on analysis of the multi-year trend data.

Waste Reduction Information and Programs

The County promotes waste reduction through outreach, education, technical assistance, and training using various media. The central elements of this effort are the SORRT Program and the TRRAC Program and public outreach and education to residents of single-family homes and townhomes.

The County will continue to promote waste reduction 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 impact on the environment 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 of supplies, a "First-in First-out" use policy, and establishing inventory control procedures. Date-stamping of incoming materials, routing of printed materials, posting of employee notices, and using durable, reusable items such as cleaning cloths, ceramic mugs, and 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 those involving the Metropolitan Washington Council of Governments (MWCOG), MDE, the Maryland Recyclers' Network, and other regional entities. The MDE County Solid Waste and Recycling Managers groups encourage the coordination of waste reduction efforts across the State. The County monitors and supports appropriate State and national legislative initiatives on waste reduction.

Large scale waste reduction involves modifications in consumer and commercial behavior, 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 and technical assistance to all types of waste generators, emphasizing the economic and environmental benefits of waste reduction and increased recycling for lowering waste disposal costs, preserving natural resources, and making our land, air, and water cleaner.

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 can be assessed 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 to emphasize these fiscal incentives for waste reduction.

4.1.4 Recycling Achievement, Opportunity and Direction

Figure 4.1 shows the County has achieved nearly continuous improvement in increasing waste diversion and recycling. As shown in Tables 3.1 and 4.1, Approximately 616,000 tons of MRA Materials were recycled in Calendar Year 2017. In recent years, an economic downturn resulted in less recyclable packaging associated with consumer purchasing, continued reductions in the mass of recyclables, and declining print media subscriptions, which created challenges for the County to continue to increase its recycling rate.

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

Figure 4.1 Annual Recycling/Diversion Rates in Montgomery County



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 their recycling rates. To assist the County in calculating its recycling rate, MDE developed the "Tonnage System Reporting Guidelines for CY 2017"¹. The State may award an additional source reduction credit of up to 5% for specific source reduction activities that could 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.

Montgomery County adopted the State's accounting method for Recycling and Diversion Rate, through Executive Regulation 7-12, Montgomery County's 70 percent recycling goal

¹ [Maryland Recycling Act \(MRA\) Tonnage Reporting Survey Guidelines for CY 2017](#)

includes the State's 5 percent diversion credit. The County expects that the State will continue to award its full 5 percent Diversion Rate credit due to the County's on-going waste reduction efforts.

The tonnage projections provided in Table 4.1 envision the County reaching approximately 63 percent recycling rate in CY 2030. 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.

Table 4.1 Municipal Solid Waste Recycling and Diversion Rate CY2017 – CY2030

	2017 (Actual)	2020	2023	2027	2030
Total MSW Generated	1,103,051	1,137,893	1,170,492	1,215,730	1,250,988
Total Recycled	616,732	668,653	714,900	760,602	787,346
MRA Materials Recycled	453,613	500,438	541,926	581,060	602,716
Ash Included Above	163,119	168,215	172,973	179,542	184,630
Recycling Rate	55.9%	58.8%	61.1%	62.6%	62.9%
Diversion Rate	60.9%	63.8%	66.1%	67.6%	67.9%

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 this Plan 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 a Six-Year Recommended Operating Budget and 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 future year Council approval. Based on the current budget cycle, the tonnage projections in this Plan may vary slightly from the County's FY17-30 Fiscal Plan.

The County maintains an on-going recycling planning and implementation process. The County regularly publishes a "Recycling Plan Update." The Update details how the County's recycling goals are being pursued and reports on currently approved program achievements. The update may also include additional future programs and initiatives needed for the County to meet its waste diversion and recycling goals. The Recycling Plan Update can be obtained by contacting DEP.

In FY 2017, 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 data from the waste composition study 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. It shows specific 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 high-volume recycling opportunity with approximately 124,000 tons combined from the residential and non-residential sectors.

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

- Glass Bottles and Jars from the Single-Family Sector
 - Seventy-eight percent, or 17,283 tons, were captured for recycling.
 - A 78 percent capture rate is remarkable, considering it was achieved solely through the independent behavior of Montgomery County residents.
- Non-Residential Paper
 - Sixty-two percent was captured in CY 2017.
 - Thirty-eight percent or 44,979 tons of recyclable paper were disposed.
 - This shows a large opportunity to increase recycling for materials the County has banned from disposal.
- Recyclables Banned from Disposal
 - Single-family capture rate of 77 percent (185,383 tons).
 - Twenty-three percent (55,023 tons) is included with refuse for disposal.
 - To increase the capture rate of these materials in the single-family sector, continuing outreach, education, and enforcement is needed.

Table 4.2 Waste Recycling by Material Type: Achievement and Opportunity

Basis: CY17 actual recycled tonnages plus composition of the disposed waste from FY17 "Tip&Sort" applied to CY17 disposed waste tonnages.		CY17 Actuals												Opportunity			
		Single-Family			Multi-Family			Non-Residential			Aggregate Actual CY17			Disposed by Sector (tons)			Currently
		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	Disposed (Tons)
Banned ER1-15	Subtotal, Banned Components	240,405	185,383	77.1%	32,065	7,640	23.8%	314,586	227,065	72.2%	587,056	420,088	71.6%	55,023	24,425	87,521	166,968
	Paper	81,690	52,651	64.5%	15,315	3,760	24.6%	117,497	72,518	61.7%	214,502	128,928	60.1%	29,039	11,555	44,979	85,574
	Glass	22,193	17,283	77.9%	2,529	637	25.2%	12,402	8,070	65.1%	37,125	25,990	70.0%	4,911	1,892	4,332	11,135
	Other Ferrous	11,016	10,199	92.6%	2,834	942	33.2%	94,142	86,701	92.1%	107,992	97,842	90.6%	817	1,892	7,441	10,150
	Yardwaste	104,682	97,701	93.3%	4,484	2,080	46.4%	64,557	57,537	89.1%	173,723	157,318	90.6%	6,981	2,404	7,020	16,405
	Narrow-Neck Plastics	9,699	4,169	43.0%	3,236	47	1.5%	13,090	209	1.6%	26,026	4,426	17.0%	5,530	3,189	12,881	21,600
	Ferrous/Bimetal Containers	4,059	2,648	65.2%	779	157	20.2%	2,125	1,819	85.6%	6,963	4,625	66.4%	1,411	622	306	2,338
	Aluminum Beverage Cans	1,562	582	37.3%	501	15	2.9%	1,082	203	18.7%	3,145	799	25.4%	980	486	879	2,345
	Plastic Tubs/ Lids	4,192	130	3.1%	1,614	1	0.1%	8,399	7	0.1%	14,206	138	1.0%	4,062	1,613	8,393	14,068
	Other Aluminum (Pans/ Foil)	390	20	5.2%	205	0	0.1%	1,257	1	0.1%	1,852	21	1.2%	370	205	1,256	1,830
	Other Non-Ferrous Metal	922	-	-	567	-	-	34	-	-	1,523	-	-	922	567	34	1,523
Potential and Encouraged	Food Waste	40,972	648	1.6%	15,861	11	0.1%	73,065	5,119	7.0%	129,898	5,778	4.4%	40,325	15,850	67,946	124,120
	Non-Recyclable Paper	18,143	-	-	7,169	-	-	26,787	-	-	52,098	-	-	18,143	7,169	26,787	52,098
	Manure	-	-	-	-	-	-	4,996	4,996	100.0%	4,996	4,996	100.0%	-	-	-	-
	Shopping Bags	1,804	-	-	677	-	-	2,327	46	2.0%	4,807	46	1.0%	1,804	677	2,281	4,762
	Other Film Plastic	12,796	-	-	5,331	-	-	24,342	480	2.0%	42,469	480	1.1%	12,796	5,331	23,863	41,990
	Other Rigid Plastic (inc. Flower Pots)	8,891	1,868	21.0%	2,933	248	8.5%	16,707	3,867	23.1%	28,531	5,982	21.0%	7,023	2,685	12,840	22,549
	Textiles/ Leather/ Carpets	11,318	72	0.6%	5,583	93	1.7%	24,574	5,842	23.8%	41,475	6,007	14.5%	11,246	5,489	18,733	35,469
	Wood Waste (inc. Pallets)	4,548	-	-	2,298	15	0.7%	17,042	3,685	21.6%	23,888	3,700	15.5%	4,548	2,283	13,357	20,189
	Whole Tires (as Rubber)	2,889	2,880	99.7%	1,253	720	57.5%	3,625	3,600	99.3%	7,767	7,201	92.7%	9	533	25	567
	Electronics	6,983	1,503	21.5%	2,649	17	0.6%	715	715	100.0%	10,347	2,235	21.6%	5,479	2,632	-	8,112
	Batteries	107	91	85.1%	5	3	60.4%	2,378	2,378	100.0%	2,490	2,472	99.3%	16	2	-	18
	Animal Protein	-	-	-	-	-	-	1,086	1,086	100.0%	1,086	1,086	100.0%	-	-	-	-
No Markets	Other Wood	5,247	-	-	180	-	-	18,711	-	-	24,138	-	-	-	-	-	-
	Other Glass	742	-	-	464	-	-	31	-	-	1,237	-	-	-	-	-	-
	Disposable Diapers	8,470	-	-	2,615	-	-	6,003	-	-	17,088	-	-	-	-	-	-
	Other Waste	46,673	293	-	19,228	3	-	57,776	286	-	123,677	583	-	-	-	-	-
	RRF Ash	-	63,814	-	-	19,468	-	-	72,798	-	-	156,080	-	-	-	-	-
TOTAL		409,989	256,552	62.6%	98,312	28,218	28.7%	594,750	331,962	55.8%	1,103,052	616,733	55.9%	156,411	67,078	253,351	476,840
Notes: Revised: 10/10/2018																	
<u>Banned ER1-15:</u> These materials are required to be recycled under Executive Regulation 1-15, and are banned from disposal in waste from all sectors.																	
<u>Potential and Encouraged:</u> Markets vary for these materials. Although not subject to the disposal ban, recycling is encouraged for all materials for which there are available markets.																	
<u>No Markets:</u> No existing or anticipated markets for these materials.																	

4.1.6 Single-Family Residential Sector Recycling

As mandated by Executive Regulation 1-15, the County provides curbside collection of recyclable materials to approximately 220,000 single-family residences in unincorporated areas of the County. Field surveys have indicated that participation in the curbside recycling program has exceeded 80 percent of eligible households. Approximately 38,000 residents of single-family households located in incorporated municipalities receive arranged recycling service from their 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 flowerpots.
- **2009:** non-hazardous aerosol cans, reusable, durable plastic containers and 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

In CY 2017, the single-family residential sector accounted for 35.7 percent of the total County municipal solid waste generation (MSW). The CY 2017 single-family recycling rate was 62.6 percent, and the Diversion Rate (Recycling rate with Source Reduction Credit) was 64.4 percent.

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: 65-gallon, heavy-duty, wheeled, and lidded carts.
 - Town Homes: The County may offer smaller containers for easier storage.
- Virtually all forms of clean, dry paper are accepted.

- County Executive Regulations 1-15 Appendix C and 18-04² ban the disposal of recyclables mixed in with disposable trash and any kind of paper that could otherwise be recycled if not clean or dry.

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 current recyclables existing materials 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, commingled containers, yard trim, and scrap metal. Source separation allows for more efficient reuse and marketing of recyclables. As the waste composition studies have shown, outreach, education, and enforcement are essential in the single-family sector. The county-wide distribution of large lidded wheeled 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 attempt 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 recycling of aluminum, bi-metal, steel, glass, plastic containers, mixed paper, cardboard, scrap metal, Christmas trees, and yard trim at all apartment and condominium properties. Property owners and managers of multi-family residences provide the collection of recyclables. The County provides technical assistance, education, and training regarding on-site collection alternatives and management of collection contracts to assist multi-family property owners and managers in complying with the mandated recycling. 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 verification, and reports for non-compliance. Investigations of non-compliance issues are performed, and a program of judicious enforcement, progressive actions, and potential fines promote full compliance with County's regulations and increase recycling.

In CY 2017, the multi-family residential sector accounted for 9.5 percent of the total County waste generation with a multi-family Recycling Rate of 28.7 percent, and a Diversion Rate (Recycling Rate with Source Reduction Credit) was 29.1 percent. Waste composition studies

² [Executive Regulation 18-04](#)

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 has been providing on-site technical assistance and conducting training and education to provide specific and tailored guidance to increase recycling participation and capture rates.

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

4.1.8 Non-Residential Sector Recycling

Executive Regulation 1-15, enacted in 2015³, mandates recycling of glass, plastic, aluminum, ferrous containers, mixed paper, cardboard, scrap metal, Christmas trees, and yard trim by more than 33,000 organizations (non-residential sector). While commercial, industrial, and institutional property owners and managers provide for the collection of recyclables for their sites, the County provides technical assistance, education, and training regarding on-site collection alternatives and management of collection contracts. 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 fines for non-compliance.

In CY 2017, the non-residential sector accounted for 54.9 percent of the total County solid waste generation. The CY 2017 non-residential recycling rate was 55.8, and the diversion rate (Recycling rate with Source Reduction Credit) was 58.6 percent. Waste composition studies conducted at the Transfer Station reveal significant quantities of recyclable materials from the non-residential sector discarded as refuse.

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

³ Executive Regulation 1-15 superseded Executive Regulation 15-04 AM which was enacted in 2005

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. Also, DEP has studied the costs of recycling and waste disposal collection experienced by businesses and organizations. DEP also consistently evaluates market conditions in the region and recommends recycling of other materials for which markets are available and favorable, relative to disposal.

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 that they generate. Businesses in more densely developed Central Business Districts (CBDs) regularly face space constraints when it comes to placement of recycling and refuse collection containers outside of their establishments. Small businesses face an often-disproportionate administrative burden when securing and contracting collection services on their own.

Because of these concerns, DEP has been conducting cooperative recycling and refuse collection study projects for small businesses in the Silver Spring CBD. This same scenario has been and is applicable in settings within the Bethesda and Wheaton CBDs. DEP support includes on-site waste analysis of each business' 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 determine the feasibility of collection scenarios, which would successfully reduce the costs of recycling to create economic incentives for increased recycling.

Based upon the data collected, the implementation of cooperative recycling and refuse collection projects have reduced the cost of monthly refuse and recycling collection costs and reduced their required administrative efforts in contracting for recycling and refuse collection services.

Participating businesses have been achieving a recycling rate exceeding the County's 70 percent recycling goal. 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 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 recycling laws by applying the necessary and appropriate enforcement measures.

DEP uses a progressive method of ensuring compliance with the recycling regulation. 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 take 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 within which the violation or deficiency must be rectified. This process begins with DEP outreach and education to ensure awareness and understanding of the requirements. DEP uses technical assistance, training, and hands-on guidance and further 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 their recycling program in compliance with the regulation. In instances where these techniques do not bring about compliance by a multi-family property or business, DEP has the authority, ability, and responsibility to use stronger means of enforcement to bring about compliance.

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

Wasted food and food scraps represent a significant portion of the solid waste disposed in the County. The 2017 Waste Composition Study estimated food waste accounts for approximately 20 percent of the solid waste disposed in the County. Diverting food scraps from the waste stream would significantly increase the recycling rate and preserve processing capacity at the RRF. As the County's annual MSW disposal tonnage continues to grow, implementing a food scraps recycling program will avoid the cost of by-pass if RRF capacity is reached.

Composting food scraps and other source separated organics has many benefits. The composting process converts food scraps and other source separated organics into a stable, hummus-like soil amendment. Using compost in agriculture, landscaping, and environmental remediation completes the recycling loop. Compost suppresses plant diseases and pests, reduces or eliminates the need for chemical fertilizers, promotes higher crop yields, and improves overall soil structure. Soils amended with compost have higher infiltration rates and increased moisture-holding capacity, providing a valuable stormwater management tool by reducing stormwater run-off.

County Council Bill 28-16⁴ required DEP to develop a strategic plan to reduce wasted food, channel food in excess of a generator's needs to others with unmet needs, and increase the amount of food scraps and other acceptable organic materials to be composted. The Bill required DEP to identify legislative changes necessary to reduce food waste and promote food waste composting, models, and best practices used by other jurisdictions, challenges, potential sites for food waste composting operations, environmental and public health benefits, and more. The Bill also called upon DEP to include numerous specific considerations and also required DEP to consult with a large group of various stakeholders, interested organizations, as well as the governing bodies of municipalities within the County.

To develop The Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery County, Maryland, DEP staff created six focus areas to organize the planning process: Reducing Wasted Food/Channeling Food to Others; In-Home, Backyard, and Community-Scale Composting; On-Site Institutional and On-Site Business Composting; On-Farm Composting; Composting in Montgomery County; and Strategies to Maximize Food Scraps Collection at the Curb. DEP staff solicited and gained the perspective and expertise of more than 215 stakeholders that it had contacted to describe the Strategic Plan and requested their participation in the process. In addition, DEP further asked any interested stakeholders to assist in developing the Strategic Plan by becoming members of one of the six working groups DEP established to look more closely into one of the six focus areas. Forty-seven (47) of the 215 stakeholders became members of the six working groups. Chapter 5 provides the Plan of Action of the County on each of the six focus areas of the Strategic Plan:

Reducing Wasted Food/Channeling Food to Others

According to the U.S. Census Bureau's 2018 American Community Survey, Montgomery County, Maryland was ranked #12 of the 50 wealthiest counties in the U.S. According to Feeding America, the nation's largest domestic hunger-relief network, 6.3% of the County's population does not have consistent access to quality, nutritious food. Current practices for channeling quality, nutritious food to those in need can be modified through collaboration and coordination with other established groups to include donations of food that would otherwise be wasted or thrown away. Food labeling, specifically "use by...", "best by..." or other types of expiration dates, can affect food donations by residents, businesses, and multi-family properties in the County. Increasing 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 and the Montgomery County Food Security Plan.

⁴ https://www.montgomerycountymd.gov/SWS/Resources/Files/foodwaste/CB28-16_Signed.pdf

In-Home, Backyard, and Community-Scale Composting

Through outreach, training, education, compost workshops, and demonstrations, and distribution of educational materials, DEP supports, encourages, and promotes residents, multi-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 2017 Waste Composition Study showed yard trim materials accounted for less than 2% of the waste disposed of in the County, documenting the long-term success of the education and training programs. Adding food scraps to in-home, backyard, and community-scale composting programs is an option for the County to consider in diverting food scraps from the waste stream.

On-Site Institutional and On-Site Business Composting

According to the 2017 Waste Composition Study, businesses, organizations, and government facilities (non-residential sector) in the County disposed an estimated 68,000 tons of food scraps in CY2017.

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 scrap recycling collection services to collect source-separated food scraps and transport them to a commercial composting facility for processing.

On-Farm Composting

The U.S. Department of Agriculture's 2012 Ag Census Report estimated 540 farms in Montgomery County, with an average size 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

The commercial sector generates over half of all waste generated in the County and disposes of approximately 68,000 tons of food scraps annually. Therefore, encouraging businesses to set up food scrap composting programs for their workplaces provides the County the opportunity to divert a significant amount of waste from the overall waste stream. According to data from CY2017 Annual Business Waste Reduction and Recycling Reports, thirty (30) businesses reported they source-separated food scraps for recycling collected by a

recycling collection company and transported to processing facilities. Numerous businesses have contacted DEP to express their interest in separating their food scraps for recycling.

DEP developed food scrap recycling collection programs for pre-consumer food scraps generated in cafeterias in three County facilities: The Executive Office Building, the Council Office Building, and the Public Safety Headquarters Building. DEP used these programs to develop educational materials and training and recommended best practices when implementing food scrap recycling programs. The lack of long-term, stable food scrap composting processing facilities to serve the region is a limiting factor in setting up food scrap recycling collection programs.

In 2020, DEP secured 4,000 tons annually of food scrap composting capacity, with an ability to negotiate for additional capacity at the Prince George's County Organics Compost Facility in Upper Marlboro, Maryland. DEP can now offer stable food scrap recycling capacity to large generators of food scraps in the County.

Strategies to Maximize Food Scraps Collection at the Curb

DEP collects yard trim as part of its weekly curbside recycling collection service to approximately 220,000 single-family households in the County. Yard trim is transported to the County's Shady Grove Processing Facility and Transfer Station, where the yard trim is sorted, processed, and loaded for transport to the Montgomery County Yard Trim Composting Facility. According to the 2017 Waste Composition Study estimates, the single-family sector disposes approximately of 40,000 tons of food scraps each year. Diverting food scraps and other acceptable organic materials from the single-family sector would help the County achieve its ambitious waste diversion and recycling goals.

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. In recent years, the incoming volume of land clearing and demolition waste at the County's Transfer Station has increased. In addition to the Transfer Station, in CY 2017, more than 37 other facilities accepted land clearing and demolition waste generated in Montgomery 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 20% of the waste stream, DEP does not believe additional County-owned disposal or recycling capacity is currently required.

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 Municipal Solid Waste (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 5.6.5.

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 for change to the existing County asbestos disposal policy.

4.2.3 Controlled Hazardous Substances

Controlled Hazardous Substances (CHS)⁵, as defined in COMAR 26.13.01 is a solid waste which, because of its quantity, concentrations, or chemical, or physical characteristics, poses a substantial present or potential hazard to human health or the environment.

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

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, and 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 to provide specific guidance dealing with releases of hazardous material. Items such as sewage releases are also included in the manual. When outside assistance is required, are reported through calls made 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 spills of oil and other hazardous substances. Larger spills may require assistance from the MDE spill team and/or a private clean-up contractor. MCFRS is responsible for on-site materials containment and stabilization. Once MCFRS has rendered the incident site safe, the Division of Environmental Policy and Compliance (DEPC) coordinates for the removal of the hazardous materials.

³ For regulatory definition, see Section 7-201, the Environment Article of the Annotated Code of Maryland.

Under the County's Water Quality Protection Charge Ordinance (Montgomery County Code, Chapter 19, Section 19-35), DEP can issue fines for illegal dumping on County roads, rights-of-way, streams, and storm drains. Through the County's Water Quality Protection Charge Ordinance, DEP established specific procedural guidelines to address any 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 the clean-up of any spilled material and requiring a legal means of discharge. Enforcement of illegal connections is the responsibility of DEPC and the WSSC.

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, 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) that has been 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 permitted special medical waste incinerators 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 about any incinerator which 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 located outside of the County.

4.2.6 Animal Carcass Waste (Dead Animals)

Current Conditions and Constraints: There are no animal carcass waste rendering facilities in the County. 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 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 Montgomery County. Over the next ten years, County animal waste generators likely will remain dependent on out-of-County rendering facilities.

4.2.7 Bulky Wastes

Current Conditions and Constraints: Bulky wastes include furniture, large household appliances (also 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. Reusable building materials dropped off at the Transfer Station are picked up by non-profit organizations. Other bulky items that are 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. The frequency and availability of County provided curbside bulk material pick-up may be revised.

4.2.8 Automobiles

Current Conditions and Constraints: Two automobile parts salvage companies operate in Montgomery County. However, no full-scale automobile recycling facilities exist within the County. Retired automobiles generally are 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 the management of scrap tires in Maryland. Many auto service centers in the County arrange for private recycling of their customers' tires at facilities outside of the County. County residents may drop five or fewer scrap tires per year 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: As explained in Chapter 3, the four wastewater treatment plants located in the County generate approximately 20 dry tons per day of biosolids.

Current practice in managing biosolids generated in Montgomery County's wastewater treatment plants includes land applications on farmlands. Biosolids that are land applied are subject to requirements of MDE sewage sludge utilization permits and nutrient management plans. Historically, these sites have been on the Maryland Eastern Shore, Frederick, Howard, and Prince George's, and Montgomery counties, or in Virginia. Currently, there are two active permitted land application sites for biosolids in Montgomery County located in the areas near Poolesville and Dickerson.

Needs Assessment and Plan Direction: The latest adopted Montgomery County's Ten-Year Comprehensive Water Supply and Sewerage Systems Plan (2018-2027 update) states that the Washington Suburban Sanitary Commission (WSSC) has recently completed a significant facility planning study to explore and determine the best alternative in managing its future biosolids produced from all of its wastewater treatment plants within both Montgomery and Prince George's counties. The focus of this facility plan was to examine and develop a comprehensive program providing for the best alternative to process biosolids in a manner that is environmentally beneficial and is also economically feasible.

The recommended and approved alternative included the design and construction of a central bio-energy project comprised of Thermal Hydrolysis, Mesophilic Anaerobic Digestion, and Combined Heat and Power facilities. The project is currently under design and early construction, and the expected completion date for this project has been scheduled for the year 2023. When complete, some of the expected environmental and economic benefits would include:

- Significant reduction in biosolids quantity.
- Production of digester gas as 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.

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, septic systems are periodically pumped out by private haulers 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 service area.

Currently, the Muddy Branch Road Disposal Site is the only location in Montgomery 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 Wastewater Treatment Plant in Washington DC for treatment.

Needs Assessment and Plan Direction: In response to concerns about community safety, environmental protection, and security concerns at Muddy Branch Road Disposal Site, WSSC, with coordination with DEP, recently completed an extensive septage management study to evaluate alternatives to relocate the Muddy Branch Road Disposal Site.

Based on this evaluation, the current abandoned Rock Creek WWTP was carefully chosen as the best location for constructing a new septage receiving station facility. The construction of a new septage receiving station at the abandoned Rock Creek WWTP is currently under the final design phase. All the wastewater discharged into the new septage receiving station would also be conveyed to the Blue Plains Wastewater Treatment Plant in

Washington DC for treatment. The completed facility would be capable of receiving septage from about 100 to 120 vehicles per day.

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 coming 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 the management of 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 this Plan.

4.3 Assessments of Constrains of Current Solid Waste Acceptance Facilities

The assessment carried out by RRMD in 2019 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 this Plan:

- Resource Recovery Facility (RRF)
- Yard Trim Composting Facility

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

- Shady Grove Processing Facility (TS)
- Materials Recovery Facility (MRF)
- Paper Processing Facility (PPF)

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

- Food Waste 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 Montgomery County Yard Trim Composting Facility is sited.

4.3.1 Shady Grove Processing Facility and Transfer Station

There has been an increase in Construction and Demolition (C&D) material (shingles, roofing, and sheetrock). This material has increased at a rapid rate. It is not processible at the RRF without first screening out dirt, asphalt, and concrete hauled to a permitted disposal facility. The transfer station typically receives about 15,000 tons of shingles and sheetrock C&D material annually; however, in 2018, 40,000 tons were received. It is believed that the increase can be attributed to an increase in County waste as well as local roof replacement projects and a windstorm in March 2018.

Residential collection and commercial vehicles containing solid waste or yard trim and natural wood materials enter the Transfer Station at the same commercial vehicle entrance on Shady Grove Road. During the fiscal year 2019, MES reported 157,942 commercial and residential vehicles delivering yard trim.

To reduce the risk of accident or injury, the County's contract 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.

4.3.2 Materials Recovery Facility (MRF)

The current facility was built 28 years ago. The most recent retrofit was completed 17 years ago as part of a system-wide upgrade. As a result, most of the processing equipment at the MRF has exceeded its useful life. Due to their age, much of the MRF equipment is obsolete, and many replacement parts are no longer available. Repair parts often must be reverse-engineered and fabricated in-house. The current processing lines lack redundancy. If one component of a processing line fails, the entire processing line is down.

At current volumes, the MRF needs to be able to process a minimum of 170 TPD of commingled material. The existing facility is not capable of handling this throughput requirement. To reliably process at least 170 TPD of comingled material, a complete retrofit of the comingled processing equipment is required and improvements to the building and the site. The current layout, age of equipment, and advancements in sorting methods and technology make replacement or upgrades of specific components of the comingled line not practical.

DEP is considering a complete retrofit of both the commingled and paper lines at the MRF due to the age of the equipment, lack of redundancy, and the inability to process the current quantity of inbound material. As explained in Chapter 5, if the land would be available, the County would relocate its MRF.

4.3.3 Paper Processing Facility (PPF)

Although the PPF equipment is new, it was designed to process up to 25 tons per hour. It cannot handle the volume of incoming mixed paper material received on peak days due to on-going system limitations addressed with the vendor. There are several processing limitations: The Paper Receiving Building is undersized to accommodate the current 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. As part of the paper processing upgrade, the building was again repurposed for incoming paper material storage when the new PPF was constructed in 2017.

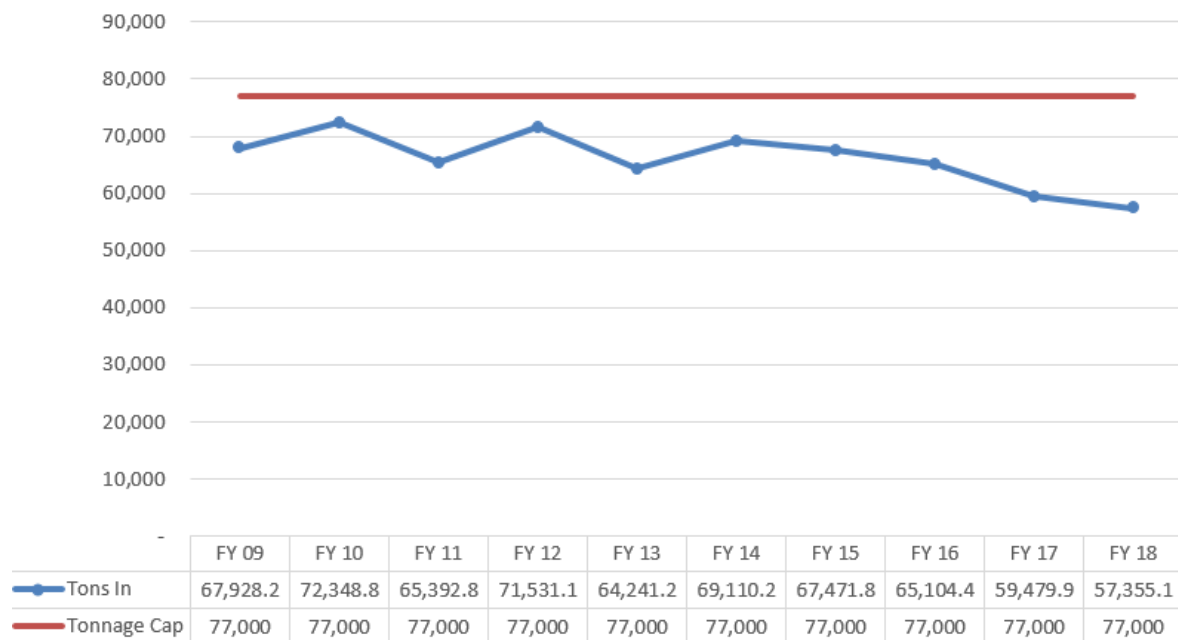
4.3.4 Yard Trim Composting Facility

Figure 4.2, below, illustrates the resulting slightly downward trend in the amount of material received for processing at the County's Composting Facility. 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 in any year, more than might be expected. Therefore, as a good management practice, the County requires the yard trim hauler to maintain a back-up contract for composting capacity.

The 2019 Facility Evaluation study states that *"it would be expected that the Yard Trim Compost Facility should be capable of continuing to process materials beyond the 10-year planning period"*.

As required by Section 9-1703(b)(7) of the Environmental Article, the RRMD evaluated the feasibility of solid waste composting and determined the County has no plan to include a solid waste composting facility during the planning period.

Figure 4.2 Tonnages of Leaves and Grass Received for Composting FY09 - 18



4.3.5 Resource Recovery Facility (RRF)

The RRF processes waste at a nominal 1,800 TPD 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 none 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 receipt of by-pass and non-processible waste and of all waste if the RRF is unavailable for any reason. 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 has 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 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 footprint of the landfill would consist of approximately 125 acres.

The County continues to allow Site 2 to be used for agriculture purposes until a landfill is needed. The County has an MDE permit to build and operate a landfill at Site 2. The County could commence construction of the landfill by giving a notice to proceed at least one year in advance of the anticipated construction start date by the terms and conditions of *Letter of Understanding* signed by the County and SCA.

4.3.7 Composting Facilities Accepting Food Waste in MD and VA

The lack of food waste processing capacity is the major obstacle in expanding food scraps recycling. As shown in Table 3.7, the lack of nearby food scraps processing facilities limits immediate expectations for vastly increased food scraps recycling. There is limited capacity at reliable processing facilities within a 50-mile radius from the Transfer Station. Chapter 5 describes the County’s strategy to obtain access to a food scrap processing capacity.

As required by Section 9-1703(b)(7) of the Environmental Article, the RRMD evaluated the feasibility of solid waste composting and determined the County has no plan to include a solid waste composting facility during the planning period.

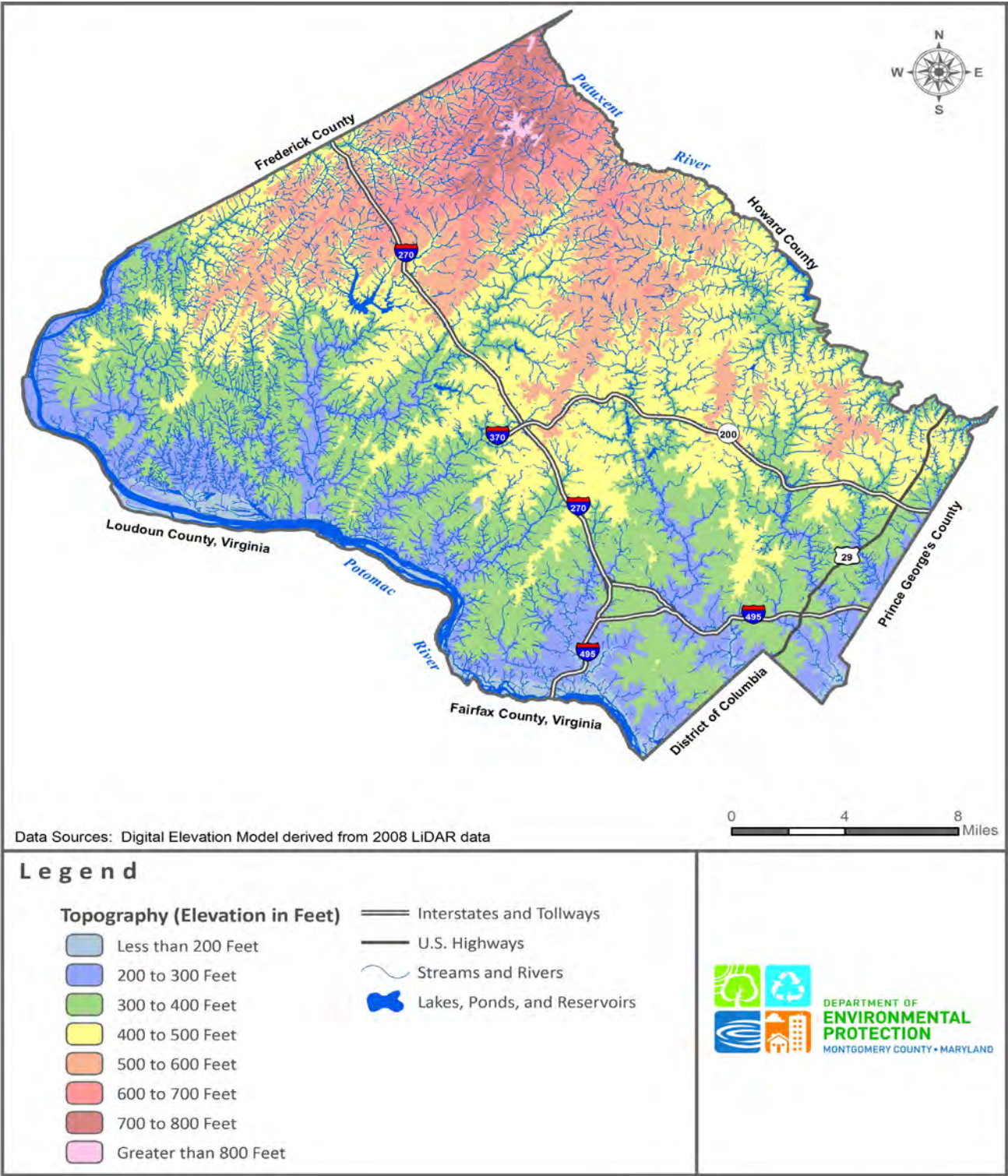
4.4 Constraints on New Solid Waste Acceptance Facilities

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 4.3. 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. In general, the effort and costs of site preparation for most solid waste facilities increase as the topographic variation increases.

Figure 4.3 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 4.4.

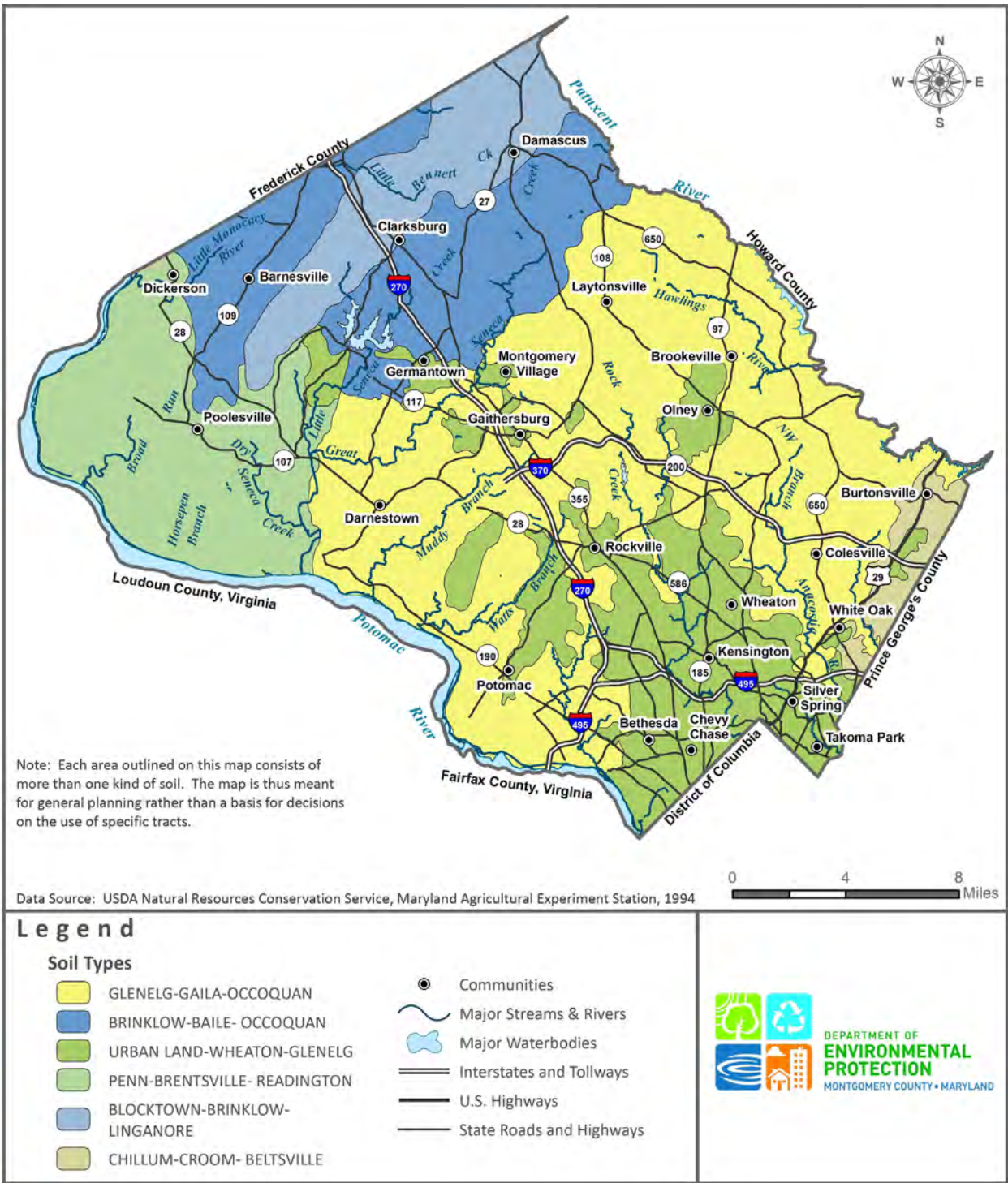
Table 4.3 County Generalized Soils Descriptions

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 in 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: <https://www.montgomerycountymd.gov/DEP/Resources/Files/Downloads/WS/2017-chapter2-draft.pdf>

Figure 4.4 County General Soil Map



C. Geologic Conditions⁶ – 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 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 4.5).

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 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.

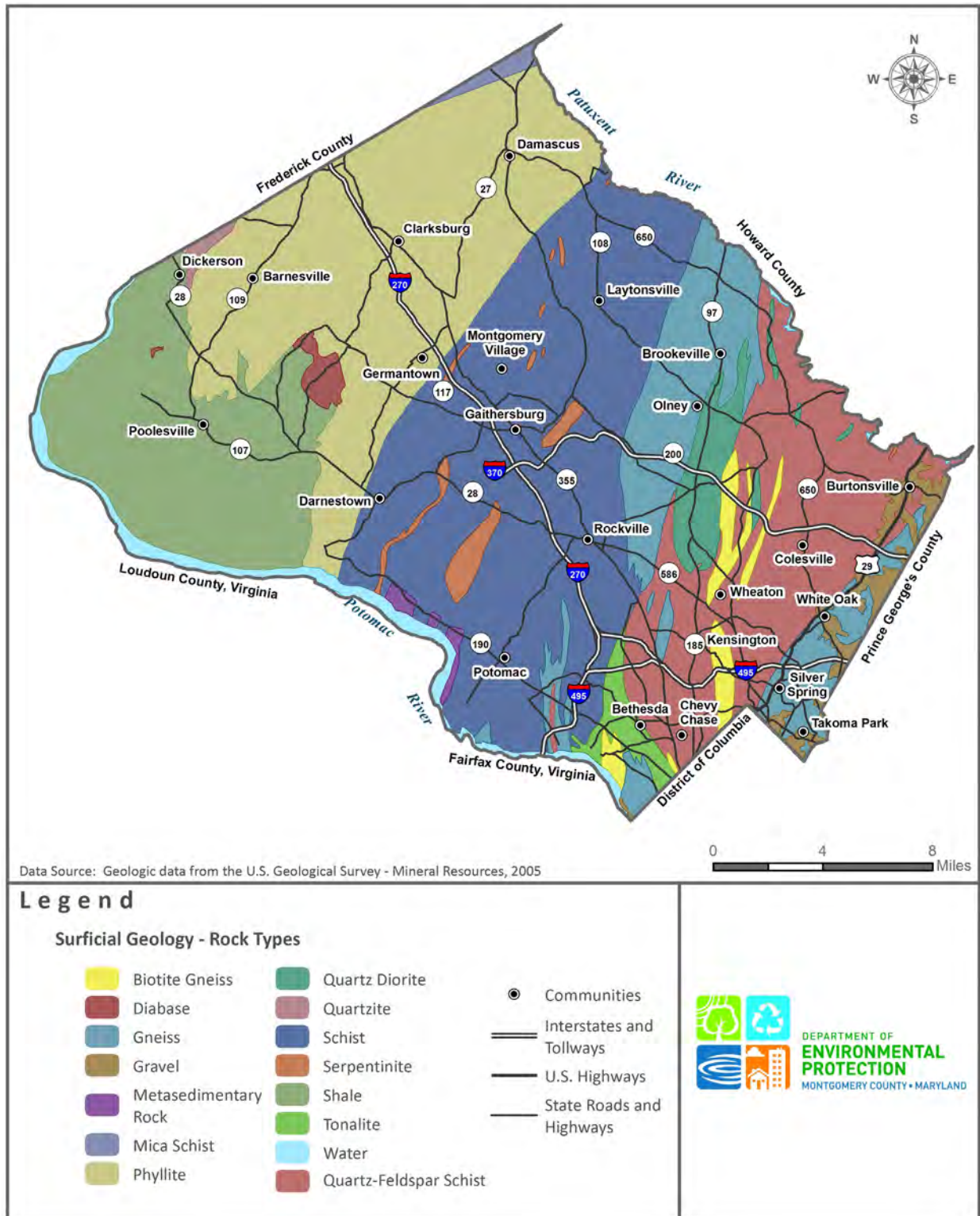
The general trend of the bedrock units across Montgomery County and the strike of the foliation and cleavage are northeast-southwest. Still, no one particular lithology appears to have had significant control over the topography.

Alluvial deposits consisting of gravel, sand, silt, and clay of recent age are present along the Potomac River, particularly in the wide bottomlands in the area of Triassic rocks west of Seneca. This alluvial fill is much less developed where the river channel has been cut into hard metamorphic rocks such as 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 are 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.

⁶Source: "Bedrock Geology of Montgomery County," compiled by Jonathan Edwards, Jr., Maryland Geological Survey, Baltimore, MD. December 1992.

Figure 4.5 County Geologic Conditions Map



D. Ground Water and Aquifers⁷ – The major hydrogeologic units in the County are shown in Figure 4.6. 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 wastewater treatment plants. 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.

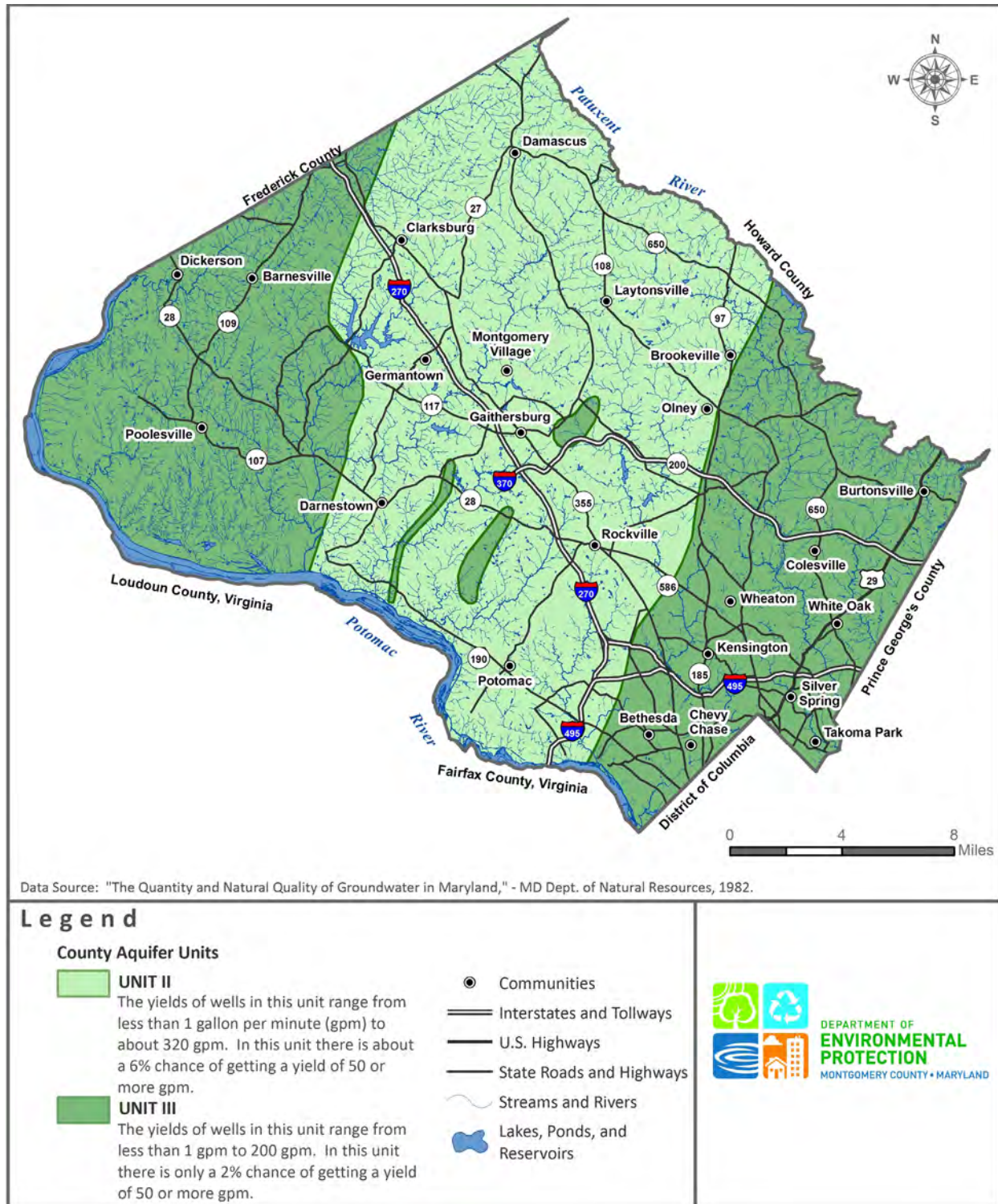
The average annual depth of the groundwater table in Montgomery County varies considerably from place to place depending on the type of rock, and the topographic situation as well as the annual rainfall. At an observation-well at Fairland, in the Wissahickon schist of the eastern part of the County, average annual depth to ground water 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 between 30-45 feet.

In the Manassas (New Oxford) siltstones and sandstones, the water table, as shown in scattered wells, lies at 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. It is noteworthy that 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 crystalline igneous and metamorphic rocks of the Piedmont. However, small areas of Triassic sedimentary rocks are also included along the lower reach of Little Seneca Creek and near Dickerson.

⁷ 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 4.6 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, and allowable impacts to, 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 the use of these maps, exact wetland boundaries and locations must be field determined using the guidance that is provided by the Federal Government. Any new solid waste facility must address current federal and state wetlands requirements.

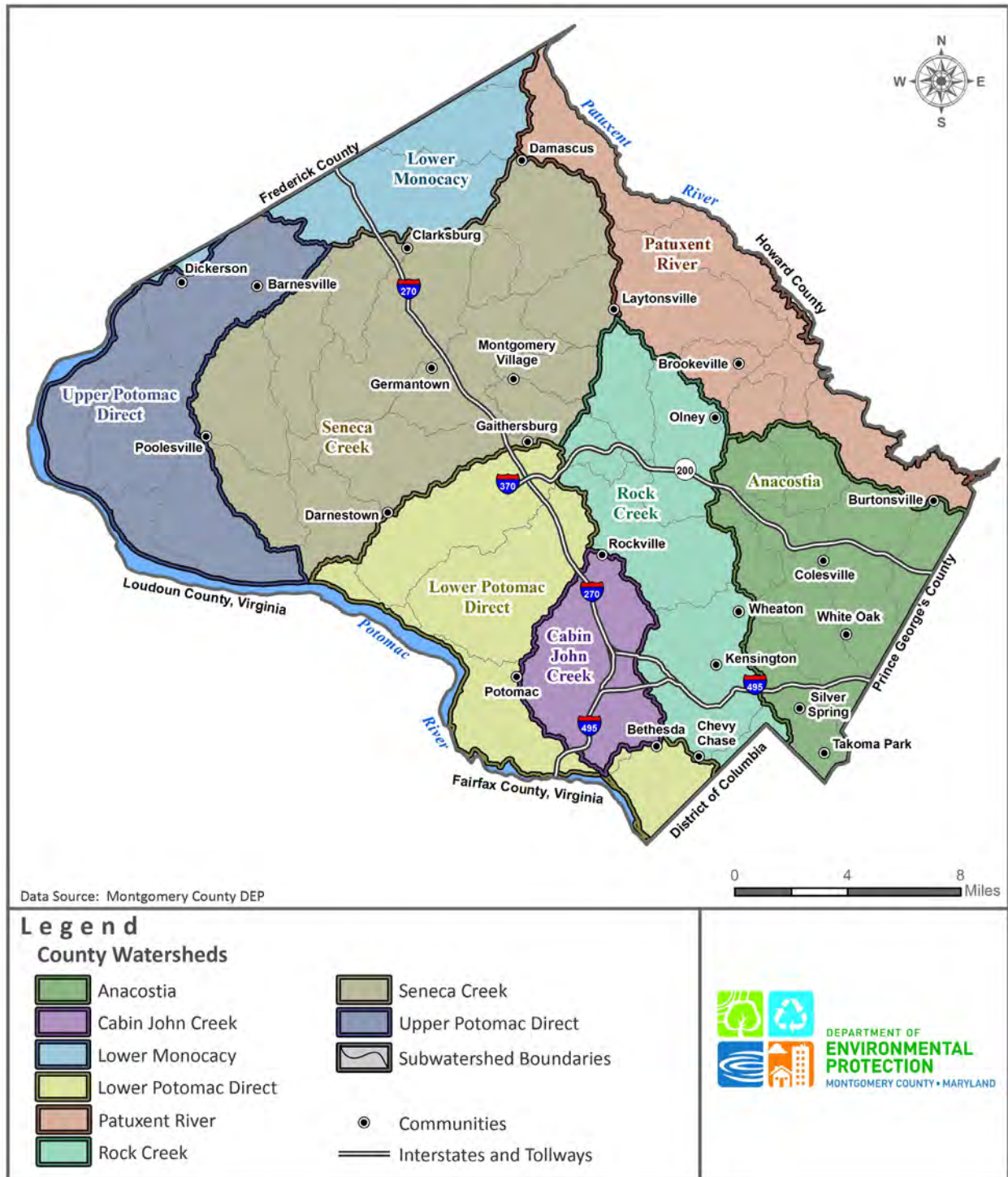
F. Surface Waters, Floodplains, and Watersheds – The County’s rivers, lakes, and streams provide drinking water, recreational opportunities, and wildlife habitat. Most of this surface water comes from naturally occurring run-off from rain and snow. All of the lakes in the County are human-made. The larger lakes were built for flood and sediment control and water supply. Some County waters also are used to 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 4.7.

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 on to 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 flood plain 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 4.7 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 4.8.

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 water supply; 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 that are suitable for the growth and propagation of trout, and which can support self-sustaining trout populations and their associated food organisms.

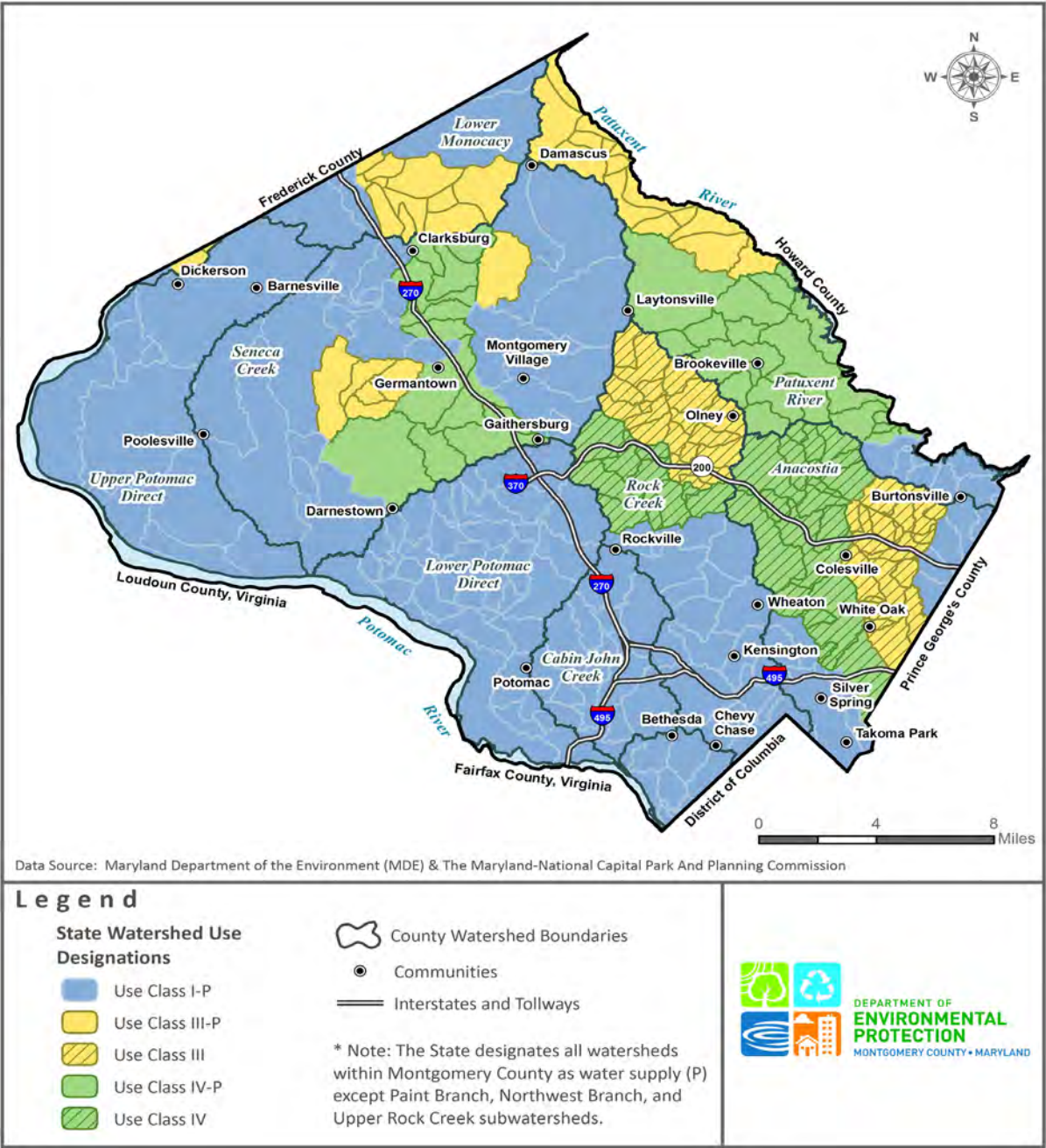
Use III-P Natural trout waters and public water supply: Waters which include all uses identified for Use III waters and are used as a public water supply.

Use IV Recreational trout waters: Waters which can hold or supporting adult trout for put and take fishing, and which 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 which include all uses identified for Use IV waters and are used as a public water supply.

Needs Assessment and Plan Direction: Limited sites remain in the County with physical characteristics suitable for the development of large new solid waste facilities, particularly landfills. As described in the next section, both the physical characteristics of the land 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 4.8 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 this Plan, the County Code (primarily Chapter 48), and the Zoning Ordinance.

The County Zoning Ordinance includes standards for solid waste facilities.⁸ The Zoning Ordinance restricts privately owned transfer stations, landfills, incinerators, and recycling facilities to select industrial zones. The County Zoning Ordinance expressly prohibits privately owned and operated incinerators in industrial zones.⁹ Privately owned incinerators are allowed in industrial zones only if publicly operated.

The Zoning Ordinance limits privately owned transfer stations, landfills, and incinerators to the IH heavy industrial zone. Moreover, 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. 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. No more than seven vacant or re-developable (i.e., parcels where the value of the land exceeds the value of existing improvements) I-2 parcels of five acres or more exist in the County. The creation of new I-2 land seems unlikely during the life of this Plan given existing land use patterns as well as County and State land development policies.

The Zoning Ordinance allows a construction debris recycling facility in a Rural Service Zone if the facility meets certain development standards outlined in Section 59-3.6.9 of the County Zoning Ordinance. These requirements set minimum standards for lot size, road frontage, distance to an interstate interchange, building set back, and on-site screening and landscaping. The facility also requires a construction debris recycling permit that satisfies the materials handling and reporting requirements of the County Zoning Ordinance.

Most of the southern and central portions of the County are unavailable for solid waste management uses given current development and land use patterns. 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 for the preservation of 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 are

⁸ This plan shall not be used to create or enforce local land use and zoning requirements.

⁹ See Section 59-3.6.9 of the County Zoning Ordinance.

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 standard of environmental and public health protection.

CHAPTER FIVE: SOLID WASTE MANAGEMENT SYSTEM PLAN OF ACTION

The Montgomery County Solid Waste Management Plan is a dynamic planning document that may be amended by the County government 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 Solid Waste Management Plan 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.

In early 2018, DEP asked MDE for an extension to the submission schedule for the County's revised Solid Waste Management Plan, chiefly because the County was undertaking two main initiatives:

- 1) The County Council Bill 28-16 required DEP to develop a strategic plan (the "Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery County, Maryland," published in April 2018) for reducing food generation, reusing food that would otherwise be wasted, and increasing the amount of food and other organic materials that can be composted, and advancing the use of compost; and
- 2) The Development of the *"Aiming for Zero Waste Plan," A Vision for Sustainable Materials Management in Montgomery County.*

The Solid Waste Management Plan 2020 -2029 is based on the results of the initiatives mentioned above. DEP staff developed the recommendations of the Strategic Plan¹ to reduce the amount of food waste generated at the source, channel excess food to those with unmet needs, and recycle/compost food waste into useful and usable material, and encourage the use of the material to ensure that there is sufficient demand for recycling food scraps in conjunction with over 215 stakeholders and six working groups established by DEP staff for which stakeholders were invited to serve on. The recommendations are incorporated in Section 5.6.4 of Chapter 5 of the Plan.

The *Aiming for Zero Waste* planning process involved the evaluation of the current solid waste system, benchmarking the County with other jurisdictions, identification of options to increase reuse, recycling, and diversion, assessment of the County's existing waste management facilities, and an analysis of the management options for "What's Left" after the expected increase in recycling. Throughout the *Aiming for Zero Waste* planning process, input and feedback were requested from the Task Force on County's Integrated Waste System, residents, and other stakeholders.

¹[Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion. Montgomery County, MD](#)

The Task Force provided advice and guidance on how best to maximize waste reduction, reuse, recycling, and sustainable management of all materials across the entire integrated waste management system. Their recommendations were key inputs to this Plan of Action. The full set of recommendations can be found in the Aiming for Zero Waste website²

The options to increase reuse, recycling, and diversion were selected for their ability to increase diversion of more materials from disposal, provide sustainable materials management, and increase the recovery of materials. Combined, these options present a comprehensive waste management strategy that supports the County's effort to reach a carbon-neutral operation. The County is still reviewing all options to identify the best course of action. Chapter 5 of this Ten-Year Plan will be subject to revision as options are selected.

As the County makes decisions and the implementation phase begins, the County will notify MDE and update this Ten-Year Plan as needed. The County will also communicate with stakeholders to keep them informed of changes and additions to the County's Solid Waste operations. To develop an efficient and effective Action Plan, the County will:

- Undertake studies, pilot programs, cost analyses, and review procurement options to select the options to provide the best results.
- Conduct feasibility studies, including extending trash collection services to Subdistrict B.
- Develop specific project and program timelines, staff assignments, and budgets.
- Secure food waste processing capacity while the County develops its organics processing infrastructure.
- Identify low-cost, low-effort options for waste reduction and reuse initiatives. Review and propose modifications to regulations.
- Develop and present an implementation plan.

Chapter 5 - Plan of Action has eight subsections:

- 5.1 General Solid Waste Management Policies
- 5.2 County-Owned Solid Waste Infrastructure
- 5.3 Potential New County-Owned Infrastructure
- 5.4 Potential New Private Facilities
- 5.5 Current Plan of Action for Reduction of Solid Waste Generation and to Maximize Recycling
- 5.6 Enhanced Plan of Action for Reduction of Solid Waste Generation and to Maximize Recycling
- 5.7 Impacts of Recommended Options to Reduce Waste and Increase Recycling
- 5.8 Financial Management System

² <https://www.montgomerycountymd.gov/SWS/Resources/Files/master-plan/task-force-recommendations.pdf>

5.1 General Solid Waste Management Policies

The principles of sustainability shall guide the County's solid waste management preferences and practices. That is, actions taken today should be those judged least likely to make life more difficult for future generations. In keeping with this principle, the County adopted the solid waste hierarchy (Figure 1.1), where waste reduction is the most preferred solid waste management technique, followed by reuse and recycling (including composting), then controlled combustion with energy recovery, and least preferred, landfilling.

The County builds and maintains 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.

5.1.1 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 district is divided into Subdistrict A, and Subdistrict B, services provided vary for each Subdistrict. The Recycling and Resource Management Division collects recyclables from all Single-Family Homes in the non-municipal portions of the County. Solid waste is collected from a subset of the Single-Family Homes. (see Section 3.2.1 of this Plan for details).

5.1.2 Biosolids Management

Since 2015, biosolids generated at the Blue Plains Wastewater Treatment Plant began using anaerobic digestion to convert over half the organic matter in biosolids into methane to generate electricity to provide power for operations at Blue Plains. Approximately 25 – 30 percent of the total biosolids produced at Blue Plains WWTP come from Montgomery County.

WSSC has recently completed a major facility planning study to examine and develop a comprehensive program providing for the best alternative to process biosolids in a manner that is environmentally beneficial and is also economically feasible. The recommended and approved alternative included the design and construction of a central bio-energy project comprised of Thermal Hydrolysis, Mesophilic Anaerobic Digestion, and Combined Heat and Power facilities. The project is currently at the design stage, and the expected completion date has been scheduled for the year 2023. When complete, some of the expected environmental and economic benefits would include:

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

5.1.3 Hazardous Wastes

The State of Maryland regulates the transportation, treatment, storage, and disposal of hazardous wastes. 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 a small quantity of hazardous waste.

5.1.4 Administration of the Plan

The Plan of Action is developed and administered by the Director of DEP under the direction of the County Executive. The Recycling and Resource Management Division (RRM) of DEP assists the Director in the development of the Plan and is responsible for its implementation and management. The RRM conducts on-going 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:

- a. Formulates the County Solid Waste Management Plan. As needed, revisions and amendments to the Plan are developed with recommendations for the County Executive.
- b. Conducts research and extensive planning functions to develop and recommend capital improvements and operating budgets to the County Executive.
- c. 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.

- d. Analyzes, reviews, and identifies potential sites for solid waste management facilities and prepares and submits requests for appropriate permits, permit updates, revisions, and modifications.
- e. Reviews and comments on state solid waste refuse disposal permit applications, modifications, revisions, and amendments for solid waste facilities.
- f. 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.

5.1.5 Coordination

- a. M-NCPPC provides requested information regarding population, growth forecasts, planning factors, and other developmental criteria specified by the County Council or County Executive.
- b. MDE implements and enforces State laws in the County and regulates solid waste acceptance and certain recycling/composting facilities.
- c. WSSC provides requested information regarding engineering, design, present and future capacities, and fiscal elements of biosolids management facilities and programs.
- d. 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 Plan.

5.1.6 Public Participation

DEP coordinates public participation in solid waste management planning and provides administrative support and information to SWAC, DAFIG, and other solid waste advisory committees created by the County Council or by the County Executive.

- a. Solid Waste Advisory Committee – SWAC is a legislatively created citizen advisory and oversight committee that consists of 15 members appointed by the County Executive and approved by the County Council. 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. Chapter 48, Section 48-40 of the Montgomery County Code, specifies the organization, membership, and activities of the committee.
- b. Dickerson Area Facilities Implementation Group – DAFIG is a legislatively created citizen advisory group by Council Resolution 13-1498, consisting of 12 voting members appointed by the County Executive and approved by the County Council. DAFIG advises the County on issues of concern to the community that is affected by County solid waste operations in the Dickerson area. The facilities under the purview of the DAFIG include the RRF, the Yard Trim Composting Facility, properties originally purchased for the Site 2 Landfill, and properties associated with the original Matthews Farm. It is intended that the DAFIG will function in an advisory capacity to the County for the life of the facilities at Dickerson.
- c. Ad Hoc Committees – From time to time, the County Executive appoints ad hoc committees to address special problems related to solid waste. Such committees serve at the pleasure of the County Executive. These committees are established to represent special community interests as the need arises. The former County Executive Isiah Leggett formed a Task Force on the County's Integrated Waste System Strategic Plan, and this Task Force continued its work under the current County Executive Marc Elrich. In May 2020, the Task Force finalized his advisory mandate producing a set of recommendations to the County Executive.
- d. Public Hearings – The County Council holds a public hearing on the proposed Comprehensive Solid Waste Management Plan and any revision thereof. Fourteen days notice of the hearing date must be provided by publication in a newspaper or newspapers of general circulation in Montgomery County.
- e. Stakeholders' involvement – In 2018, DEP engaged key stakeholders and the public through an online survey to measure the use of solid waste programs and services, gauge interest, and gather ideas on additional strategies to reduce waste and increase

recycling. The County also hosted Open House meetings to solicit feedback on strategy options under consideration for further study.

5.1.7 Legal Matters

- a. 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.
- b. Executive Regulations – The Director of DEP, in coordination with the OCA, prepares Executive Regulations appropriate to implement County solid waste programs and policies.
- c. Legislative Awareness – The Director of DEP maintains awareness of legislation under consideration by the Legislature of the State of Maryland that is related to solid waste management and provides testimony to legislative committees as may be appropriate.
- d. Legal Support – The OCA provides legal advice and assistance in all legal matters related to solid waste management.
- e. 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).

5.1.8 Solid Waste Data Management and Reporting

The County gathers solid waste data from a variety of sources that are used to determine disposal rates, recycling rates, waste reduction activity, and other key measures. Certain solid waste data are readily attainable from in-County 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 tonnages of 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. Specialized studies are used to monitor some minor waste streams not reported by the preceding means. Periodically the DEP conducts an

analysis of 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 5.8.2).

DEP Reports to the County Council

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:

- a. 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;
- b. 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 Plan, which may be included in the Recycling Plan Update.

In addition to annual reports, DEP will brief the County Council, as requested, regarding the implementation of this Plan and the operation of the County's solid waste management system.

DEP will continue to maintain 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 related to refuse and recyclables processed at non-County facilities.

Each calendar year, per County Council Resolution 17-566, DEP will calculate its recycling and waste diversion rates according to the Maryland Recycling Act methodology and guidelines.

5.2 County-Owned Solid Waste Infrastructure

The County will need to make improvements to existing facilities and to develop new facilities to transfer or process materials. This section described the upgrades required for county-owned facilities and potential new facilities.

5.2.1 Shady Grove Processing Facility and Transfer Station

The County's Review of Existing Processing Facilities Report³ includes a list of recommended Capital Improvement Projects (CIP). The CIP projects include making tipping floor and roof repairs; upgrading scale house and fire protection; replacing compactors, HVAC systems, underground piping, rail containers, and rail cars; implementing new scale systems; purchasing rolling stock and replacement of rail cars and rail containers.

- 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 concept of a Resource Recovery Park (RRP), the County will continue to provide receptacles at the Shady Grove Processing Facility and Transfer Station for generators to unload self-hauled recyclables.
- 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 5.8.2.
- Evaluate the relocation of yard trimmings grinding operation.

5.2.2 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 reliably process the quantity of material the County intends to receive. The refurbishment projects include:

- Installation of new scales.
- Upgrade and increase electrical service.
- Improvements to sewer service and stormwater system.

³ [Task 8: Review of Existing Processing Facilities](#)

- Expansion of paper receiving building.
- Upgrades to scanning and screening systems.

The Capital Refurbishment projects will help to improve operations and increase the throughput capacity of the existing facility. Still, the existing site will continue to be undersized for the current and future projected tonnages.

5.2.3 Yard Trim Composting Facility

An on-going structural maintenance program will continue at the Montgomery County Composting Facility, including scheduled replacement of portions of the paved pad and regular inspections and preventative maintenance to its on-site stormwater management system. To assure the on-going ability of the County to recycle its end products at the lowest net cost to the County, DEP will strive to increase the market share of finished compost products produced at the facility. For the immediate future, DEP will:

- Monitor annual tonnages of yard trim processed at the Composting Facility and sources of that tonnage.
- Continue aggressive promotion, education, and training for grasscycling and backyard or on-site composting.
- Maintain back-up 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 assure that there is no lapse in contingency coverage. Contingency contract tonnage provided for any fiscal year should provide for no less than a seven percent surge as compared to the most recently completed fiscal year.

5.2.4 Resource Recovery Facility

As mentioned in Chapter 4, a physical assessment of County-owned facilities, including the RRF, was carried out in 2019; the recommendations of that assessment constitute the Plan of Action for the RRF to ensure it is reliable while in operation.

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 the sale of electricity and recovered metals.
- The recycling and beneficial reuse of ash as alternate daily cover, road base 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.

The current disposal path for waste is through the County's Resource Recovery Facility. That facility is expected to remain open through April 2026. Given the County Executive's goal of closing the facility, the County is evaluating necessary changes to meet those goals. The additional analysis includes the costs and benefits of changing the County's primary waste disposal facility as well as the environmental impact of continued use of the RRF and other forms of disposal as well as the health and social justice issues related to potential alternatives to the RRF. This analysis will include a modified transportation system to ship County waste to an alternative disposal site.

5.2.5 Out-of-County Landfill Contract / Ash Recycling

DEP will continue utilizing the existing contract for beneficial recycling and reuse of ash, while it continues to seek better options for the reduction of the waste stream. The ash contract has a term through June 30, 2024, with a seven-year renewal term at DEP's option. As described in Chapter 3, the DEP will also continue to utilize the Covanta contract for disposal of C&D material while the DEP seeks diversion and recycling options for the C&D material.

The DEP will consider:

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

5.2.6 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 to 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.

5.2.7 Land Reserved for Potential Future In-County Landfill

The County currently owns 820 acres of land in Dickerson, Maryland, to serve as a potential future in-County landfill as an alternative to the RRF and/or a contingency in the event economic conditions change. This location is along Wasche Road and is known as "Site 2"

and has an MDE permit, No. 2019-WMF-0237. The County continues to allow this site to be used for agriculture purposes until a landfill is needed.

The County may commence construction, after receiving final MDE permits, of the landfill at any point in time as it determines that such action is in the interest of public health, safety, and welfare, by 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 the evaluation of 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. Part of the order was the stipulation that, if and when the County provides notice of its intent to initiate construction of a sanitary landfill at Site 2, petitioners shall have 30 days leave from the date of the County's notice, to file a new judicial review of the permit.

As part of a letter of understanding in 1998, the County agreed to give notice of its desire to proceed at least one year in advance of the anticipated construction start date.

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

To implement recommended recycling options, the County needs to invest in new facilities to process materials such as commingled materials and organics. The County is considering a Resource Recovery Park which could house these types of facilities and take advantage of efficiencies and economies of scale.

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

The County is evaluating the possibility to expand the Shady Grove Transfer Station footprint to accommodate increased public needs. The expanded footprint could be used to develop a new MRF that could process approximately 120,000 tons per year (TPY) of the County's recyclable stream, as a long-term solution for the County's needs. The County is currently evaluating improvements to the existing MRF facility that will provide short term efficiency gains and a sufficient life extension to allow time for a new MRF to be sited, designed, and built. Once the new MRF is operational, the existing facility could be repurposed to support some of the current operations being performed on the Transfer Station site. These could include the relocation of the residential recycling and household hazardous waste receiving areas, the relocation of the yard waste grinding operation, among other possibilities.

5.3.2 Organics Processing Facility

The County has developed an Organics Management Strategy, but the lack of organics processing capacity in the region has hampered its implementation. With insufficient regional processing capacity, the County will move forward with plans to process 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 and non-recyclable paper, along with the required amendment (e.g., leaf and yard waste), were examined. Based on this evaluation, covered aerated static pile technology was recommended. The County will continue to monitor the feasibility of AD, which could be developed in the future in conjunction with a composting facility to manage digestate. The viability of AD may depend on markets for renewable energy.

The County is evaluating the following options to acquire food waste processing capacity:

- Modifying operations at the County's existing Yard Trim Composting Facility to manage higher volumes of yard trim and SSO;
- Collaborate with nearby municipalities to investigate the feasibility of developing a Regional Organics Facility; and
- Issue a Request for Proposal for a private-sector project developer who could develop an organics facility in private land or County-owned land. This could be done through a procurement process such as a Design/Build/Operate (DBO) or Design/Build/Operate/Maintain (DBOM) or some variation thereof.

A facility could be developed at county-owned properties such as MCTYCF or Site 2. The County could opt to purchase land for an organics processing facility. Until the County develops its capacity, the County is considering issuing a Request for Proposal for adequate organics processing capacity at one or more out-of-county facilities for 2020-2025.

Benefits of developing a County-owned Organics Processing Facility include:

- Provides County control of processing and operations;
- Reduced risk and ensures adequate capacity;
- Potential to develop as a Regional facility;
- Combine with anaerobic digestion technology;
- Revenue from compost and electricity sales;
- Reduced hauling distances;
- Lower GHG emissions compared to landfill disposal.

5.3.3 Resource Recovery Park

In essence, the County's Shady Grove site is a resource recovery park. The facility provides several functions within a very constrained space. It will be more difficult for this facility to operate efficiently with a growing population and more waste to manage. As the County moves forward with plans to develop new infrastructure, it may be possible to site these facilities at one location and develop a new resource recovery park. This park could include another drop-off location to relieve the strain on the Shady Grove Transfer Station site, as well as include a reuse area.

The County is evaluating siting multiple facilities in 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 and processing;
- Would minimize nuisance impacts as facilities are consolidated;
- 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.

5.4 Potential New Private Facilities

5.4.1 In-County Infrastructure

Private persons who wish to operate solid waste disposal facilities in Montgomery County may not do so without a State solid waste disposal permit. The State will not issue a permit unless the site is consistent with the Comprehensive Solid Waste Management Plan. With respect to private sites:

1. The County will review and comment on state solid waste disposal permit applications; the site and any facility on the site must comply with all County laws and with relevant parts of this Plan.
2. The County, as part of its review of permit applications, will designate materials that private facilities are permitted to 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. At the time that 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 conformity of the proposed private facility 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 set back, 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 interest and roadblocks to the private sector development of nearby recycling facilities for such special wastes as yard waste and food waste. DEP will continue to review and possibly modify existing regulations to promote the expansion of private recycling infrastructure within the County.

6. In 2017, C&D Recovery, located in 24120 Frederick Rd, Clarksburg, MD 20871, handled approximately 18 percent of the C&D managed by the private sector. The facility is currently under re-construction with plans to reopen later 2020. The County is monitoring its status.

5.4.2 Out-of-County Infrastructure

Private facilities handled 51 percent of the rubble, land clearing, and C&D generated in the County in 2017, as well as managed more than 141,000 tons of MSW generated in the County. As detailed in Chapter Three, there are many other options located outside the County where collectors may choose to take C&D and MSW. Other privately-owned facilities located outside of Montgomery County accept land clearing, hazardous wastes, medical wastes, dead animals, automobiles, and tires.

5.5 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 55.9 percent and a waste diversion rate of 60.9 percent in 2017. Sections 5.5 and 5.6 describe in detail the mechanisms for managing each of the waste streams identified in COMAR 26.03.03.03 §D(1). Table 5.1 summarizes whether or not there are changes and, if so, the section 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	5.5 and 5.6
MSW Commercial	5.5 and 5.6
Industrial (solids, liquid, etc.)	5.5 and 5.6
Institutional (schools, hospitals, etc.)	5.5 and 5.6
Land clearing and demolition debris (rubble)	5.6
Controlled hazardous substance (CHS)	No changes
Dead animals	No changes
Bulky or special wastes	5.5 and 5.6
Vehicle tires	No changes
Wastewater treatment plant sludges	No changes
Septage	No changes
Asbestos	No changes
Concrete/Brick	5.6
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 Plan:

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 service providers, and refuse and recycling collection companies to further increase participation in recycling, reuse, waste reduction and buying recycled programs.
2. Continue to provide a comprehensive level of outreach, education, training, technical assistance, and site-specific recommendations to businesses and multi-family properties to implement, improve, or expand on-site recycling programs using on-site visits by County staff.
3. Continue dedicated enforcement of the County's recycling regulation, County Executive Regulation 1- 15, as it pertains to businesses and multi-family properties by thoroughly investigating cases of non-compliance and judicious use of progressively stronger enforcement techniques.
4. Continue dedicated enforcement of the County's companion recycling regulation, ER 18-04 about haulers and collectors of solid waste, together with ER 1-15, implements the County's ban on disposal of targeted recyclables.
5. 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 together with one collection service provider and share a common set of recycling and refuse collection containers, the businesses increased the number of materials they recycle. Most participating businesses experienced a decrease in their monthly recycling and refuse collection service costs due to collection efficiencies.
6. 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 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 support of legislative initiatives about waste reduction.

7. **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.
8. DEP will monitor potential technological advances in food waste composting and anaerobic digestion to determine if these activities may be suitable for implementation in the County. This can include programs that target specific types of food waste generators, e.g., institutions, grocery stores, and restaurants.
9. Almost all types of plastics, except film plastics and polystyrene, are now included in the County's recycling program. Markets for film plastics continue to require purities beyond the practicable capability of the County's curbside recycling collection program. However, film markets have demonstrated tolerance for the grocery store type bags returned to some of those stores. Many grocery stores and some retail stores in the County take plastic bags and plastic shrink/stretch wrap and other plastic films for recycling. The County will continue to work with grocery stores and other retailers to promote film plastic recycling via this route.
10. **New Education Methods:** DEP will appraise the effectiveness of alternative education and outreach strategies and will focus its efforts on initiatives quantifiably demonstrated to have a measurable positive effect on recycling performance. The County Executive's annual operating budget submission must include summary findings of participation studies, focus groups, surveys, and other means used to evaluate the effectiveness of alternative techniques and must describe how these findings justify the specific outreach, education, training, and technical assistance proposed for funding in the upcoming fiscal year.
11. **Incorporated Municipalities:** The County has provided access to the MRF to all County municipalities providing curbside recycling collection services, including commingled materials and source-separated residential, mixed paper. Some County recycling program resources, particularly in support of multi-family and non-residential recycling, have been made available to the municipalities.
12. **Purchase of Goods Containing Recycled Materials:** Section 11B-56 of the Montgomery County Code establishes that recycled paper and paper products should constitute at least 50 percent 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 use of a

percentage price preference (up to 10 percent) 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 and municipalities to encourage them to use these materials.

13. Continue working with agencies that issue event permits for special events, as described in section 3.3 of this Plan.
14. Continue providing support to the Montgomery County Public Schools SERT team to implement and improve recycling in Public Schools, according to 3.3 of this Plan.
15. The State "Recycling- Apartment Buildings and Condominiums (2012) Act". To comply with this Act, Montgomery County intends to continue its current multi-family recycling program, as described in Section 3.3 of this Plan.
16. Consistent with State Bill SB370, Environment – Recycling – Office Buildings, requires the Counties to address the collection and recycling of recyclable materials from buildings that have 150,000 square feet or greater of office space. The County implements the Recycling Plan for Office Buildings, as described in Appendix F of this Plan.
17. DEP will provide input related to the solid waste management to the Climate Workgroup currently working on the Climate Action and Resilience Plan (CARP). Once the CARP is finished, it will help make some of the decisions in this Plan of Action.

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

As shown in Figure 5.1, a comprehensive suite of options was developed and vetted through DEP staff and the Task Force⁴. Input received as part of the public meetings was considered in the selection of the recommended options. The options took into consideration environmental, technical, social, and financial factors as well as their potential to reduce waste and improve recycling assisting the County with its goal of aiming for zero waste.

The options will build on and enhance the County's already successful recycling program described in Chapter 4 and Section 5.5 of this Chapter.

Figure 5.1 Options to Reduce Waste and Increase Recycling



The recommended options are presented in the order of the waste hierarchy adopted by the County, which is based on EPA's waste management hierarchy. Some of them are fairly straightforward to implement with current resources. In contrast, others such as source-separated organics will require further planning, additional budget development, and new infrastructure and processing facility. As DEP moves into the implementation phase, it will consult internally and with stakeholders to make the best decisions for people living and working in Montgomery County.

The following table presents the estimated tons of materials diverted and disposed by all sectors in the County with the implementation of the recommended options. In this table, the materials diverted include:

- Recycling - those materials accepted in the County's curbside recycling program (commingled materials and mixed paper products);

⁴ <https://www.montgomerycountymd.gov/SWS/Resources/Files/master-plan/task-force-recommendations.pdf>

- Yard trim - leaves, grass, and brush;
- Organics - food scraps and non-recyclable paper; and
- Other materials diverted - ferrous and non-ferrous metals, textiles, leather, carpets, wood waste, tires, electronics, batteries, and manure.

Recycling rates were calculated based on the estimates of tons of diverted, as shown in Table 5.2 below. In the table, the Recycling Rate represents the diversion of tons from the recommended options only, without any recovered material from the RRF. The MRA Recycling Rate represents the tons diverted from the options as well as material recovered from the RRF. The Diversion Rate represents the MRA Recycling Rate plus the 5% Source Reduction Credit.

These estimates represent realistic, achievable capture and participation rates based on experiences in other jurisdictions. Achieving higher diversion rates would require greater levels of enforcement with fines for non-compliance. The Diversion Rate estimates assume that the maximum five percent Source Reduction Credit would continue to be earned.

Table 5.2 - Recycling, MRA, and Diversion Rates

	Recycling Rate (Recommended Options Only)	MRA Recycling Rate (Includes Ash)	Diversion Rate (Includes Source Reduction Credit)
2017	41.8%	55.9%	60.9%
2021	43.3%	56.9%	61.9%
2026	49.8%	61.5%	66.5%
2030	52.2%	63.2%	68.2%
2035	52.6%	63.5%	68.5%
2040	52.4%	63.4%	68.4%

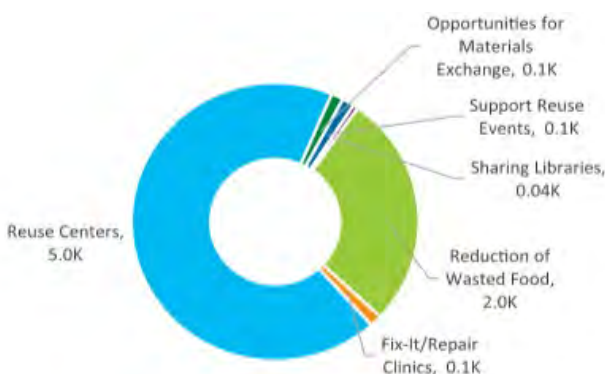
5.6.1 Reduction and Reuse

At the top of the waste management hierarchy are source reduction and reuse, which are critical to impact behavioral change. The following tables present options intended to encourage reduction and reuse through new programs and regulatory options.

Jurisdictions are recognizing that encouraging reduction and reuse have numerous benefits, including;

- Reducing the need for extraction of virgin materials,
- Changing attitudes and perceptions of single-use and disposable materials, and
- Reducing the volume and tons of materials requiring management.

There are many opportunities to encourage reduction and reuse, which can be delivered through partnership-based initiatives with non-profit organizations. This could include food waste reduction campaigns and donations of food by businesses. On-going education and outreach are a critical element of effecting change in waste reduction and reuse.



Reduction and Reuse

CHALLENGES/OPPORTUNITIES

- The County has little control over consumer decisions or actions but can continue to provide information about reducing waste to encourage changes in behavior.
- Reducing waste is key to moving towards zero waste.
- Consumers are becoming more aware of issues impacting the environment, such as single-use items, over- packaging, fast fashion, and food waste. They are making changes, as well as advocating for change to reduce waste.
- On-going education and outreach about minimizing waste generation is required and is an integral component of all options part of this Plan.
- All residents in the County can participate in programs.
- While most options do not divert significant tons, they are essential to change societal behavior.

RECOMMENDED OPTIONS TO INCREASE WASTE REDUCTION AND USE

- Food waste reduction campaigns
- Fix-it/repair clinics
- Sharing libraries
- Reuse events
- Reuse centers
- Community/neighborhood exchanges
- On-line portal for material exchange
- On-going education, outreach, and enforcement and targeted campaigns

DIVERSION POTENTIAL: Approximately 7,000 tpy with all options fully implemented.

ANNUAL GHG REDUCTION POTENTIAL: -39,000 MTCO₂E

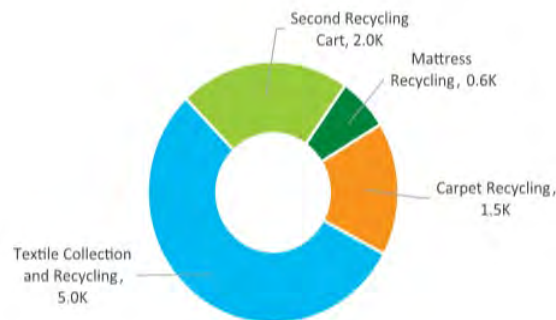
TIME FRAME: Implement in the short-term, maintain over the mid- to long-term.

5.6.2 Regulatory Options to Encourage Waste Reduction and Reuse

CHALLENGES/OPPORTUNITIES
• County has already implemented bans on some materials. These can be enhanced and/or expanded. • County has the opportunity to show leadership in waste reduction through additional waste reduction initiatives in County facilities. • Many options do not divert significant quantities of waste but are important components of zero waste programs and changing behavior. • People are more aware of issues regarding single-use materials through recent media attention and are more supportive of waste reduction measures.
RECOMMENDED REGULATORY OPTIONS TO REDUCE WASTE
• Ban single-use plastic shopping bags and increase the fee for paper bags. • Reduce single-use plastic water bottles in County facilities and install water refill stations. • Revisit ordinances to explore how to expand and include more materials (e.g., single-use food ware, Styrofoam®, etc.). • Advocate for EPR of other materials and container deposit legislation. • On-going education, outreach, and enforcement and targeted campaigns.
DIVERSION POTENTIAL: Approximately 3,000 tpy with all options fully implemented. Extended Producer Responsibility and container deposit programs could divert more materials.
ANNUAL GHG REDUCTION POTENTIAL: -9,000 MTCO ₂ E
TIME FRAME: Implement in the short-term, maintain over the mid- to long-term.

5.6.3 Recycling Other Materials

Recommended options to increase recycling and reduce the volume of waste that needs disposal include: providing a second recycling cart with more capacity for residents to manage recyclables at home and recycling more materials such as textiles. Other materials such as mattresses and carpets are more difficult to recycle due to limited options for recycling currently available. EPR programs for mattresses and carpets are expanding, and with advocacy, could be a state program in the future. In the meantime, the County could enter into partnerships to deliver the recycling programs for these additional materials.



CHALLENGES/OPPORTUNITIES - Residents of Sub-districts A&B should have two recycling carts to capture more materials (currently, residents have one recycling bin for commingled materials and one recycling cart for mixed paper and cardboard items). - Textiles are an easily diverted material. Opportunities currently exist at the Shady Grove site to recycle textiles, but the program could be expanded. There are existing recycling programs delivered by organizations that collect and recycle textiles from residents (at the curb and in multi-family buildings). Curbside collection programs may negatively impact existing thrift stores and charitable organizations by competing for textiles in a good quality condition that are, in fact, reusable. The County should focus its textiles recycling program on those textiles that, due to poor condition or other factors, can no longer be reused by others, and instead should be processed into fibers and then recycled into new items. Ample reuse opportunities, which fulfill the more desired material management method in the waste management hierarchy, are provided by the many charitable organizations in the County already. - Mattresses and carpets are difficult to recycle materials with limited options for recycling. EPR or state grants would assist with developing markets and make collecting these materials more feasible. - Porcelain and ceramics are low tonnages, difficult to recycle items. Current markets are not conducive to collecting these materials for recycling. The County should continue to monitor opportunities to recycle these materials in the future.
RECOMMENDED OPTIONS TO INCREASE RECYCLING - Provide a second recycling cart to single-family residents in Sub-districts A&B. - Textile diversion awareness campaign and collection strategy. - Mattress collection. - Carpet collection. - On-going education, outreach, and enforcement, and targeted campaigns.
DIVERSION POTENTIAL: Approximately 9,000 tpy with all options fully implemented.
ANNUAL GHG REDUCTION POTENTIAL: -27,000 MTCO₂E.
TIMEFRAME: Short, mid, and long-term implementation, mid- to long-term operation.

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

Reducing or eliminating the amount of food being wasted is the most effective waste management tool. The Strategic Plan provides a framework for each of the six focus areas described below. Future implementation plans will be developed for each focus area. They will include timelines and cost estimates and assessments to mitigate potential impacts on the County's overall waste management system. Additional research may be required to identify revisions to existing regulations, policies, or standard practices for managing food scraps. Accurate data and metrics are needed to assess current efforts and identify additional sources of food scraps and secure the processing capacity required to develop and maintain a successful food scrap reduction and recycling program.

1. **Reducing Wasted Food/Channeling Food to Others:** Expanded and targeted education of donors to understand what is "acceptable" in terms of donation of foods to others can reduce the amount of food that is wasted and disposed of as trash. The County can work to decrease the amount of food thrown away and decrease food insecurity through efforts such as:
 - Educating food producers, wholesalers, and retailers on how to manage food to reduce the amount of leftover food waste created. The Strategic Plan provides the direction, framework, and strategies for reducing the amount of food wasted to balance food production with food demand.
 - Providing food that would otherwise be wasted to organizations that serve people in need; and
 - Expanding education of donors to understand what is "acceptable" in terms of donation of foods to others.
2. **In-Home, Backyard, and Community-Scale Composting:** The County will evaluate the feasibility for reducing the volume of food scraps currently disposed through increasing at-home, backyard, and community-scale composting programs.
3. **On-Site Institutional and On-Site Business Composting:** DEP has identified a few businesses with on-site composting programs for food scraps and/or other organic materials recycled on-site. DEP will support expanding on-site composting at businesses and commercial properties to minimize the amount of food scraps entering the County's solid waste stream.
4. **On-Farm Composting:** DEP will 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:** More recently, there has been an increasing availability of processing facilities in the regional market to accept and process food scraps for recycling. DEP has recently secured a limited amount of capacity at a food scraps composting facility, the Prince George's County Organics Compost Facility in Upper Marlboro, Maryland. DEP can now offer stable food scraps recycling capacity to large generators of food scraps in Montgomery County. DEP is providing financial incentives to expand the number of County businesses that source separate food scraps and have contracts for food scrap recycling collection services. 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 is currently considering the feasibility of conducting a pilot program to provide single-family residential curbside recycling collection of food scraps and other organic material, leveraging existing collection services and available capacity at its facilities for operational and cost efficiencies.

Organics Diversion

CHALLENGES/OPPORTUNITIES
• Backyard composting is typically used by municipalities as a low cost, complementary activity to a curbside collection program. A high degree of municipal encouragement and involvement is needed to maintain regular participation and use of backyard composting units. • Community composting for garden or food scraps can utilize low-tech methods such as composting bins or vermicomposters. These initiatives create opportunities for community engagement and education on the value of composting and can divert some organic waste. It relies heavily on volunteers. • Diversion of food scraps in schools provides opportunities to educate students and cultivate positive environmental attitudes. • Curbside collection of food scraps and non-recyclable paper for single-family homes in Sub-districts A&B is critical to diverting organics from disposal and increasing the County's recycling rate. • Organics (food scraps and non-recyclable paper) collection in multi-family buildings is more complex and should only be introduced once the single-family residential program is established. • Diversion of food scraps from the non-residential sector can be phased in according to generation rates and availability of processing capacity. Responsible management through the waste hierarchy should be encouraged, prioritizing source reduction and/or donation. • All sectors require on-going education, outreach, and enforcement. • The greatest challenge facing the implementation of an organics program is the availability of processing capacity, particularly for food scraps.
RECOMMENDED OPTIONS TO DIVERT ORGANICS
• Mandatory diversion of food scraps for businesses. • Pilot and full-scale organics collection for single-family residents in Sub-districts A&B. • Pilot and full-scale organics collection for multi-family residents. • Community composting. • Backyard composting. • Diversion of food scraps in schools. • On-going education, outreach, and enforcement and targeted campaigns.
DIVERSION POTENTIAL: Estimated 60,000 tpy with all options fully implemented.
ANNUAL GHG REDUCTION POTENTIAL: -2,200 MTCO ₂ E
TIME FRAME: Short to mid-term implementation, on-going operation.

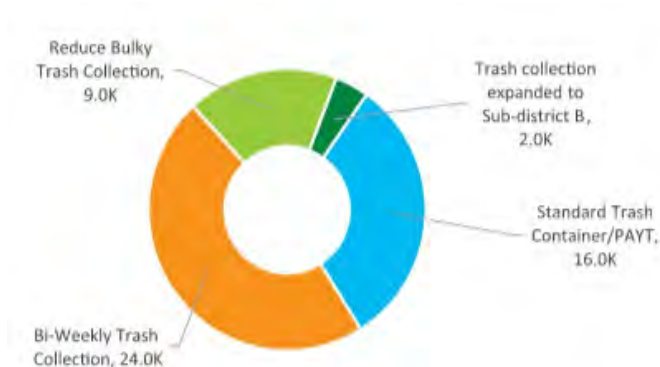
5.6.5 C&D Materials Management

The Shady Grove site could provide a convenient and economical location for managing C&D materials if additional space is available. The County has adopted the IGCC (International Green Construction Code), which requires not less than 50 percent of non-hazardous construction waste to be diverted from disposal. Additional regulations would divert waste from the Transfer Station and increase the recycling of C&D materials.

CHALLENGES/OPPORTUNITIES
• County has implemented IGCC requirements to ensure C&D materials are being diverted properly. Additional enforcement would increase diversion. • Deposit programs for developers to show proof of recycling can increase diversion. • There are several private C&D recycling/disposal facilities in and around Montgomery County, many of which have higher tipping fees than at the Shady Grove site. • Higher tipping fees at the Transfer Station would reduce the number of problematic materials (e.g., shingles) received. • Since there are a number of alternate recycling/disposal facilities in the area, the County could stop accepting C&D materials and not have to manage these materials at the transfer station or RRF. • The county could support the development of new markets for C&D materials such as wood or glass.
RECOMMENDED OPTIONS TO MANAGE C&D MATERIALS
• Increase tipping fees for C&D materials at the Transfer Station. • Increase enforcement of IGCC requirements. • Develop a new diversion ordinance or update existing ordinances to include deposit programs. • Stop accepting some or all C&D materials at the Shady Grove site. • Encourage the development of new markets for C&D materials if/when a Resource Recovery Park is established. • On-going education, outreach and enforcement, and targeted campaigns.
DIVERSION POTENTIAL: ~46,000 tpy with all options fully implemented. Additional materials could be diverted with the development of new markets/products. Diversion of C&D materials does not count towards MRA recycling, but it will free processing capacity at the Transfer Station and RRF and potentially reduce bypass tons.
ANNUAL GHG REDUCTION POTENTIAL: -9,000 MTCO ₂ e
TIMEFRAME: Short to mid-term implementation, on-going operation.

5.6.6 Trash Disincentives to Increase Recycling

Trash disincentives are program elements with significant potential to reduce waste disposal and encourage participation in diversion programs. The proposed capacity for the standard trash container should be sufficient to manage typical residential waste quantities from households that are participating in diversion programs. This will encourage waste reduction and use of the County's recycling and organics collection services and diversion programs.



CHALLENGES/OPPORTUNITIES

- County has very generous allowances for curbside collection of trash, bulky collection, and drop-off at the Shady Grove site.
- Restricting trash will encourage reduction, reuse, and recycling.
- The use of a standard trash container is easy to enforce.
- A standard trash container could reduce the ability of rodents/vermin to get into the trash by replacing existing damaged containers and placement of bagged materials at the curb.
- Standard trash containers, in addition to encouraging participation in diversion programs, can also result in increased worker safety.
- The size of a standard trash container will need to be considered carefully - allowing for a transition from the current system while providing flexibility for future changes such as every other week collection.

RECOMMENDED OPTIONS TO DISINCENTIVIZE TRASH

- Standard trash container with allowance for excess trash (tags or specially marked bags as partial PAYT system or clear bags).
- Reduce the number of items collected for in the bulk trash curbside service.
- Reduce the amount accepted at the Shady Grove site at no charge or implement a minimum fee.
- Every other week trash collection once organics program is in place (or implement at the same time).
- On-going education, outreach and enforcement, and targeted campaigns.

DIVERSION POTENTIAL: ~49,000 tpy with all options fully implemented.

ANNUAL GHG REDUCTION POTENTIAL: -81,000 MTCO_{2e}

TIMEFRAME: Mid-term implementation, on-going operation.

5.6.7 Responsible Management of Materials - Collection Enhancements

The following sections discuss how materials can be collected to divert more materials and disposed of in a fiscally and environmentally sound manner. These recommendations are intended to enhance the County's collection system as it changes with the implementation of new programs and services. There are opportunities for a more efficient collection of materials through changes to how and where materials are collected. Some of these changes will also encourage participation in diversion programs. The extension of the trash collection services to Subdistrict B is core to the success of other programs. Office of Legislative Oversight published a report on Trash and Recycling Collection⁵ with a detailed analysis of the services and possible alternatives.

CHALLENGES/ OPPORTUNITIES

- The County currently only provides trash collection services to Sub-district A; extending this service to Sub-district B will give more control to the County to implement additional diversion programs and incentivize residents to participate. This is a critical element of a successful implementation of new diversion programs and changes to other programs.
- The County currently has 13 service areas with several collection contracts. Reducing service areas and contracts will reduce the administrative burden and allow the County more flexibility in making changes to programs.
- Franchising would reduce the number of collection vehicles in the County, collecting waste from the multi-family and non-residential sectors and would provide more control to the County. This is a contentious issue and would require more analysis and consultation.
- County only collects HHW and electronics at the Shady Grove site. Mobile collection of these materials could be considered to increase diversion.
- Separate collection of organics and yard trim will be more expensive with new containers and collection vehicles but is anticipated to result in higher participation and more flexibility/control of processing.
- Once a curbside organics program is in place, there is an opportunity to move to every other week collection of trash, and potentially recycling, which would encourage participation in the diversion programs offered by the County

⁵[Trash and Recycling Collection: An Evaluation of Current Policies Report Number 2019-17. November 12, 2019](#)

RECOMMENDED OPTIONS TO ENHANCE COLLECTION

- Provide trash collection services to Sub-district B.
- Convert to every other week collection of trash and recycling, alternating with organics collection.
- Reduce the number of collection areas and contracts.
- Consider franchising if the County requires more control over the waste collection from the multi-family and non- residential sectors.
- Mobile collection of HHW and electronics.
- On-going education, outreach and enforcement, and targeted campaigns.

DIVERSION POTENTIAL: ~2,000 tpy (for expansion of trash collection to Sub-district B). Diversion potential for every other week collection is already accounted for in the estimates of organics and recyclables diverted.

ANNUAL GHG REDUCTION POTENTIAL: -4,700 MTCO₂e

TIMEFRAME: Implement in the short-term, maintain over the mid- to long-term.

5.6.8 Supporting Mechanisms

There are several supporting mechanisms to increase diversion, create opportunities for new markets supporting the circular economy, and create some efficiencies in service delivery.

Supporting Waste Reduction, Reuse, and Recycling

CHALLENGES/OPPORTUNITIES

- Recognition programs for recycling or sustainability efforts made by businesses can encourage residents to shop local and support these businesses.
- Continue to work with businesses to support efforts to reduce or recycle waste and provide grants/incentives to support programs.
- The County could support businesses/individuals waste reduction, reuse, or recycling efforts through provision of space, materials, or resources for pilots.
- Most neighboring jurisdictions are facing the same waste management issues as the County and are working individually to find solutions.
- Markets need to be developed to encourage the recycling of materials.

RECOMMENDED OPTIONS TO SUPPORT WASTE REDUCTION, REUSE, AND RECYCLING

- Enhanced recognition program to feature businesses that are implementing waste reduction or recycling initiatives.
- Provide incentives such as grants to businesses for bins/carts to increase recycling.
- Develop inter-municipal partnerships or working groups to facilitate knowledge sharing, explore collaborative procurement opportunities, and harmonize programs so that residents who work/play and live in the area all have access to similar programs.
- Continue to identify opportunities to enhance green procurement and support a circular economy.

DIVERSION POTENTIAL: no direct diversion potential. Benefits are indirect.

ANNUAL GHG REDUCTION POTENTIAL: No direct GHG reduction potential.

TIMEFRAME: On-going.

Supporting Education, Technical Assistance, Outreach, Training, and Enforcement

Most, if not all, options will require on-going education and enforcement for successful implementation.

CHALLENGES/OPPORTUNITIES

- The direct impacts of Education, Outreach, and Enforcement are difficult to measure but critical to successful waste management programs and services.
- The DEP is proactive in conducting education, outreach, training, and enforcement across all sectors in the County.
- The introduction of new programs will require targeted outreach, education, and training as well as enforcement.
- Achieving high levels of participation and higher capture rates will require delivering education and outreach programs on an on-going basis, updated regularly to keep content fresh.
- Enforcement will be required to ensure residents and businesses participate properly in programs.
- Communicating progress updates on program implementation and success can motivate residents and businesses.
- Results of the County's 2018 survey showed that the majority of respondents want more education in recycling and environmentally-related topics.

RECOMMENDED OPTIONS TO SUPPORT WASTE REDUCTION, REUSE, AND RECYCLING

- Continue outreach, education, and training and reinforce with enforcement as necessary.
- Document the number of enforcement activities (e.g., fines, oops stickers) as a measure of the effectiveness of education, outreach, and enforcement activities.
- Develop targeted campaigns for new programs, materials with low capture rates, and look for new opportunities to provide information to residents/businesses about waste reduction, reuse, and recycling.
- Develop realistic and achievable performance metrics (e.g., waste disposal or generation rates) to monitor the success and performance of programs and identify areas for improvement.
- Review the County DEP website for clarity, ease of use, and navigability on both computers and mobile devices, including tablets and cell phones.
- Support the development of an app for cell phones to provide further information on County waste management programs, and as well, opportunities/locations to reuse or recycle materials.
- Conduct regular waste audits as well as pre/post-program implementation to monitor the effectiveness of education and outreach, particularly if there are targeted campaigns, and to identify issues.
- Enforce regulatory requirements of collectors and others delivering loads of waste to the Transfer Station, which contain mandated recyclable materials.
- Utilize more workers in the Recycling Investigations Unit, specifically to investigate the sources of generated loads that are delivered to the Transfer Station, which contain recyclable materials mandated for recycling.
- Enforce recycling through citations for single-family homes by incorporating a program similar to the one currently used for multi-family and commercial properties to teach residents the importance of recycling.
- Develop policies to address trucks arriving at the MRF with contaminated material.

DIVERSION POTENTIAL: no direct diversion potential. Benefits are indirect.

ANNUAL GHG REDUCTION POTENTIAL: No direct GHG reduction potential.

TIMEFRAME: On-going.

5.7 Impacts of Recommended Options to Reduce Waste and Increase Recycling

The recommended options will have financial, environmental, and social impacts on the residents and businesses of Montgomery County. Highlights of the findings are presented in this section.

5.7.1 Financial Impacts

Implementation of the options recommended for the Plan of Action will have a significant financial impact on the County. Some of the options (e.g., waste reduction and reuse) are low cost and require predominantly time and materials related to education and outreach. Other, more sophisticated options, such as the curbside SSO program, will require significant expenditures in terms of targeted outreach and education programs, containers, collection, and processing of materials. As explained in the next section of this chapter, under County law, the charges set by the County for solid waste services must equal expenses (i.e., revenue-neutral).

Waste management programs and services are like other services provided by the County, whether they are related to water, transportation, housing, medical services, etc., in that, in general, they are not generating significant amounts of revenue. Committing to sustainability goals sends a clear message to residents and businesses that the County embraces a social purpose and places a high value on the environment. Investments in the County for waste programs, services, and infrastructure would be an investment in the future of waste diversion for County residents.

5.7.2 Environmental Impacts

Many of the recommended options result in source reduction, which provides the most significant reduction in GHG emissions. Recycling and composting more materials also result in reductions in GHG emissions. The County has already implemented measures that reduce emissions from transportation with the use of rail haul to the RRF. The implementation of the recommended options will contribute towards the County's goal of carbon neutrality.

5.7.3 Social Impacts

Montgomery County has developed a proactive and forward-thinking waste management system and is continually striving to manage materials cost-effectively and responsibly. For the most part, the County manages materials within its borders with its infrastructure. Social impacts related to the system would include:

- Potential employment opportunities associated with new facilities and programs, as well as maintaining employment opportunities with continued use of existing facilities.

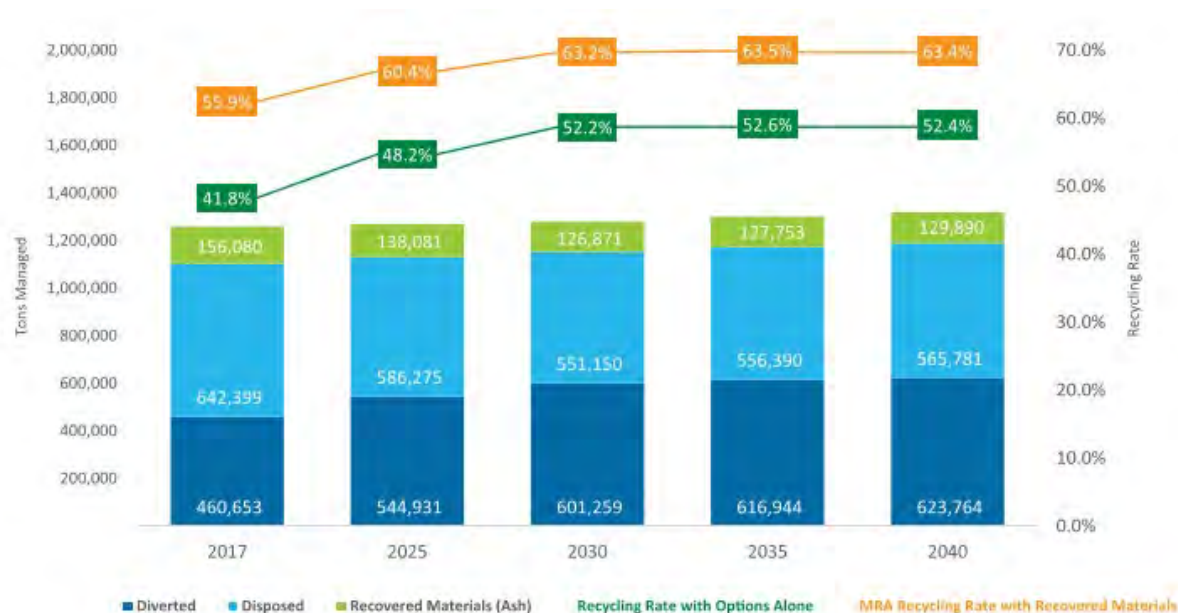
- Assisting residents in reducing their costs of consumption by providing more guidance on good choices that both avoid waste generation and household expenditures (e.g., food waste reduction).
- Focusing on sustainable, in-County solutions to the extent possible – which will allow for a more resilient waste system. Investments in the County for waste programs, services, and infrastructure would be an investment in the future of waste diversion for County residents.

5.7.4 Diversion Potential

In 2017, the County reported an MRA recycling rate of 55.9 percent (includes diversion from ash/metal recovered from the RRF) and a waste diversion rate of 60.9 percent (with the 5 percent source reduction credit). Without counting ash sent to recycling, the recycling rate is 41.1 percent. By 2040, it is estimated that the County's recycling rate would increase by 11 percent with the implementation of new programs (from the options alone) to approximately 52 percent.

Figure 5.2 presents the estimated recycling and diversion rates for MSW with the implementation of the recommended options. The green line figures highlighted in green represent the recycling and diversion rates from the options themselves. These recycling rates represent capture and participation rates that are achievable by the County. To achieve higher rates, it will be necessary to undertake more enforcement, possibly with fines and/or zero tolerance, and for the County to have more control over waste management in the municipalities, multi-family, and non-residential sectors.

Figure 5.2 Estimated Recycling and Diversion Rates with Options Implemented



5.8 Financial Management System

The general expense and revenue information that shapes the County's fiscal policy for this Plan may be found in the Public Services Program (PSP)/Operating Budget and Capital Improvements Program (CIP)/Capital Budget. In conjunction with the annual preparation of the budget, 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 that will be necessary to support the program(s). DEP may calculate the average and/or marginal cost of other solid waste programs proposed by the County Executive. These documents will be available at County public libraries and at the offices of DEP. The Solid Waste Enterprise Fund is self-supporting through user fees and receives no financial support from the County's General Fund.

5.8.1 Budgeting

Budget Preparation

The County Executive is responsible for the preparation of 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 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 the budget requests of WSSC, which are related to the County's activities in solid waste management, and makes appropriate recommendations to the County Executive.

5.8.2 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 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) and according to the provisions outlined in (Article II, Section 2.1). The MA is essentially a contract between the County and 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 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 methane, recyclables, and compost and electricity.

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

Tip Fees

The County charges separate per-ton fees (\$/ton "refuse tipping fees") for accepting MSW and for accepting Construction and Demolition (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 are calculated to assure full recovery of County solid waste system costs, together with all other revenue sources. Within these constraints, the tipping fees can also be set to influence behavior by incentive. 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 was designed to recognize the impact of both MSW and C&D material delivered to the County's facilities and to 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, such that MSW delivered by private haulers to the Transfer Station during the forthcoming year will match, as nearly possible, a target of 85 percent to 95 percent 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 TS in open-top roll-off boxes is identified as C&D and charged the higher fee. Finally, the refuse and C&D tipping fees shall be no lower than to reasonably assure that combined deliveries to

the County do not exceed the 821,500 TPY 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 comprised of 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, together with refuse tip fees 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 residential, multi-family residential, 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 a variety of 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 generators to high generators. 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 a variety of sources that includes but is not limited to 1. The sale of recyclable materials recovered at MRF in Derwood, Maryland; 2. The revenue from the sale of electricity generated by methane extracted from the closed Oaks Landfill; 3. The interest earned on any reserves held by County Finance on behalf of the Solid Waste Enterprise Funds; and 4. Small amounts of revenues from miscellaneous sources such as license fees 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, as a result of from the revenue received from the sale of electricity and ferrous metals at from the RRF, and the sales of compost products produced at the Yard Trim

Composting Facility, and also from mulch produced from grinding brush and natural wood waste at the Shady Grove Processing Facility and 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 and yet fully fund operating budgets following the Rate Covenants of the Master Authorization and Chapter 48 of the County Code.

5.8.3 Biosolids Management Revenue Sources

WSSC funds the management of biosolids through wastewater treatment and water supply user fees.

5.8.4 Plan of Action: Financial Management System

Annually, the systems benefit charges are calculated and reviewed to ensure equitable allocation of costs amongst the different categories of ratepayers. Refuse collection and leaf vacuuming charges are 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 to mitigate financial risk to the Solid Waste Enterprise Funds.

The County will continually monitor revenue generation methods to assure 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 tipping fees that remain competitive. Tip fees 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 assure 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) Financial Advisor, (2) County Finance, (3) Office of the County Attorney, (4) Bond Counsel, and (5) 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.

Aiming for Zero Waste Plan – a master planning study conducted by HDR Engineering, Inc., an on-call consultant of the Northeast Maryland Waste Disposal Authority, on behalf of Montgomery County, Maryland (County). The plan will guide the future of responsible solid waste management in the County.

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 material 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 which 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. Usually consist of items such as furniture, mattresses, etc. Also known as Bulky 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 a 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 – 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 which 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 the disposal of solid waste in Maryland through management, education, and regulation. The MRA requires that:

Each of Maryland's jurisdictions develops and implement 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 the manner in which materials are to be separated and processed.

State agencies participate in recycling programs.

Newsprint and telephone directories distributed in the state must have recycled content, by weight, of 30% in 2001, increasing to 40% by 2005.

MRA Waste and Non-MRA Waste – the list of materials that are considered MRA materials and Non-MRA materials is constantly evolving. 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 in 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., 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 for the eight participating jurisdictions in the state. The goal of the NMWDA 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 that are 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 – a system where users are charged a rate based on how much waste they set out for collection.

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 to be further recycled.

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, dead 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 disfunction, unless the item is 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. 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 solid waste is collected by the County or its contractor.

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 consisting of trash, recyclables, food scraps, yard trim, source-separated organics, scrap metal, electronics, household hazardous waste, and bulk trash.

Waste Generation Rate – the amount of waste created by residents or businesses over a certain amount of time.

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

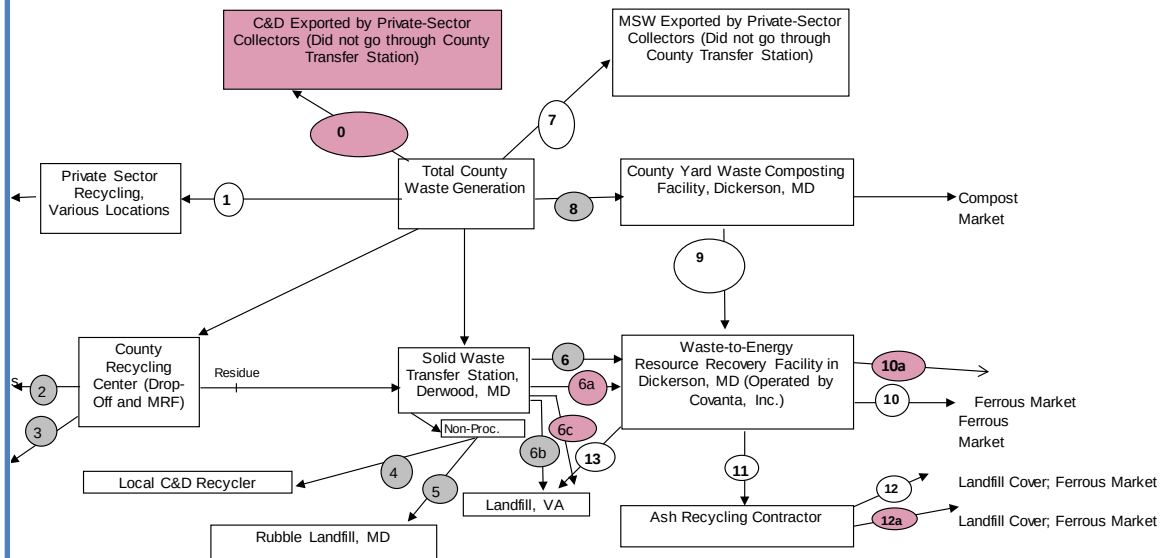
ICI	Industrial, Commercial, and Institutional
IgCC	International Green Construction Code
ILA	Inter Local Agreement
L	Liter
Lb	Pound
LEED	Leadership in Energy and Environmental Design
LF	Landfill
LFGE	Landfill Gas to Energy
MCDOT	Montgomery County Department of Transportation
MCYTCF	Montgomery County Yard Trim Composting Facility
MD	Maryland
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
US	United States
USDA	United States Department of Agriculture
VPP	Voluntary Protection Program
WARM	Waste Reduction Model
WEEE	Waste Electronics and Electrical Equipment
WRF	Waste Recovery Facility
WTE	Waste to Energy

APPENDIX B

MATERIAL FLOW DIAGRAM AND RECYCLING CALCULATION: CALENDAR YEAR 2017

MATERIAL FLOW DIAGRAM **Calendar Year 2017**



1, 7	Audited or otherwise documented. Often based on truck scales of others.
	Data is from State-certified County truck scales Owned by County.
	Data is from State-certified truck scales, privately operated under contract to County.
	This color indicates C&D waste, which is not MSW, not eligible for recycling and is not to be included in recycling rate calculation.*

Total Waste Generation, Including C&D Exported by Private Sector	1,378,396
County-Managed Waste (CMW) = 1 + 2 + 3 + 4 + 5 + 6a + 6b + 6c + 7 + 8	1,236,740
MSW Generated (above less streams 4, 5 and 6a)	1,103,051

Material Description	Sources of Data	Total (tons/yr)	Comments
Construction & Demo Debris Private Export* (Recycled via non-County Facilities)	Licensed Collector Reports under ER 5-13AM	141,656	Not County-managed, includes both disposed and recycled C&D
County Recycling Facility Material Sales	Collector, Processor, Business & Self-Hauler Rpts	290,633	Filtered to avoid double-counting
Mulch Loaded Out From TS	County TS & MRF Scales, Outbound	78,492	Outgoing to market from County Recycling Center & Penn Was
Non-Processibles Recycled**	County Transfer Station (TS) Scale Records	29,009	Scaled out as taken to County Mulch Contractor & Preserve Lo
Non-Processibles Landfilled**	County TS Scale Out Records	41,584	Not included in MRA recycling calculation
Loaded on Rail to RRF (MSW burned)	County Trans. Stat'n. & Covanta Scale Records	14,937	Not included in MRA recycling calculation
Loaded on Rail to RRF (C&D Burned)	Covanta Scales as Loaded	502,199	Total tons loaded on rail to RRF Net of 6a
By-pass (Accepted Processible Landfilled)	County Transfer Station (TS) Scale Records	72,963	In-Bound C&D less Outbound Non-Processibles Landfilled
By-pass (Accepted Processible Landfilled) C&D	County TS Scale Out Records	28,942	MSW shipped to landfill
Refuse Disposed Out of County	County Transfer Station (TS) Scale Records	4,205	In-Bound C&D less Outbound Non-Processibles Landfilled
All Incoming Leaves and Grass	Audited 6-Mo. Hauler Reports	118,296	Private Sector MSW Collection not delivered to County TS
Composting Residue to RRF	Compost Facility & TS Scale Records	55,480	Includes 0 to Backup Composters
Ferrous recovered at RRF	MES Scale Records	-	Reported by Compost Facility Manager
Ferrous recovered at RRF (C&D Residue)	Covanta Scale Records	7,039	Recovered from ash at County Facility
Ash Loaded to Ash Recycling Contractor	Internal Calculation	1,023	Not included in MRA recycling calculation
Ash outgoing from Ash Recycler	Republic Monthly Report	178,756	Total ash (includes 12, 12a, and 13)
Ash outgoing from Ash Recycler (C&D Residue)	Republic Monthly Report	156,080	Included in MRA recycling calculation
All Ash not recycled	Internal Calculation	22,676	Not included in MRA recycling calculation
	Covanta Scale Records	-	

Montgomery County Recycling Rate and Waste Diversion Rate Calculations (MRA Method)		Numerator	Denominator	Rate
Recycling Rate	$(1 + 2 + 3 + 8 - 9 + 10 + 12) / (CMW - 4 - 5 - 6a - 6c)$	616,733	1,103,051	55.91%
Diversion Rate ***	$((1 + 2 + 3 + 8 - 9 + 10 + 12) / (CMW - 4 - 5 - 6a - 6c)) + 5.0\%$	616,733	1,103,051	60.91%

- * 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

Abbreviations: "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

APPENDIX C

County Executive Regulation 1-15 Residential and Commercial Recycling



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive, 101 Monroe Street, Rockville, Maryland 20850

Subject: Residential and Commercial Recycling	Number: 1-15
Originating Department: DEPARTMENT OF ENVIRONMENTAL PROTECTION	Effective Date: April 26, 2016

Montgomery County Regulation on:

SOLID WASTE AND RECYCLING
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Issued by: County Executive
Regulation No. 1-15
COMCOR 48.00.03, Solid Waste and Recycling, Chapter 48

Authority: Montgomery County Code, 2014, Chapter 48, Section: 48-47
Supersedes: Executive Regulation 15-04AM
Council Review: Method (1) under Code Section 2A-15
Register Vol. 32, Issue 11

Effective Date: April 26, 2016
Comment Deadline: January 15, 2016

Summary: The proposed regulation describes the residential recycling requirements for single-family and multi-family dwellings (including reporting requirements for multi-family properties), nonresidential recycling and reporting requirements, and recycling requirements for collectors of solid waste and recyclable materials.

Address for comments: Department of Environmental Protection
Division of Solid Waste Services
Executive Office Building
101 Monroe Street, 6th Floor
Rockville, Maryland 20850

Staff contact: Eileen Kao, Chief, Waste Reduction and Recycling Section
240-777-6406



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive, 101 Monroe Street, Rockville, Maryland 20850

Subject:

Residential and Commercial Recycling

Number:

1-15

Originating Department:

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Effective Date:

April 26, 2016

Background: Executive Regulation 15-04AM Solid Waste and Recycling, was adopted on February 8, 2005 to further implement the provisions of Montgomery County Code, Chapter 48, Article V. The County's Comprehensive Solid Waste Management Plan for the years 2012 – 2023 was adopted by Council Resolution 18-86, on March 31, 2015. This regulation is to further update the provisions of Executive Regulation 15-04AM and implement the Solid Waste Management Plan.

48.00.03.01 Definitions. Terms defined herein are for purposes of this Regulation only. The terms used are as defined in Chapter 48 of the Montgomery County Code or as defined in this section:

- (a) **"Acceptable"** means items which conform to prevailing and customary standards of existing recycling markets.
- (b) **"Business"** means any enterprise, individual, corporation, partnership (limited or general), sole proprietorship or other entity or person, including institutions, health care facilities, construction sites, the Federal Government and other government agencies, to the extent authorized by law.
- (c) **"Commingled materials"** means acceptable items such as aluminum cans and foil products, steel or tin cans, bi-metal cans, glass bottles, jars and jugs, plastic bottles, tubs, lids, and containers, which are not separated by type, but are mixed (mingled) together in one container.
- (d) **"Department"** means Montgomery County Department of Environmental Protection.
- (e) **"Director"** means Director of the Montgomery County Department of Environmental Protection or the Director's designee.
- (f) **"Disposal facility"** means the Montgomery County Shady Grove Processing Facility and Transfer Station or any other location operated by the County where solid waste is taken for disposal.
- (g) **"Employee"** means any person working on-site 20 or more hours per week directly for the business or for an entity affiliated with the business; and any person working on-site for the business or an entity affiliated with the business as an agent or independent contractor for more than six months in any calendar year.
- (h) **"Generator"** means the owner or occupant of any dwelling unit where solid waste is generated, and the owner or occupant of any business, entity, or institution at, from, or by which solid waste is generated.



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive, 101 Monroe Street, Rockville, Maryland 20850

Subject: Residential and Commercial Recycling	Number: 1-15
Originating Department: DEPARTMENT OF ENVIRONMENTAL PROTECTION	Effective Date: April 26, 2016

- (i) **"Licensed Collector"** means a collection company that has a license to collect and transport recyclable solid waste in the County.
- (j) **"Market"** means any business that receives processed or unprocessed source separated or commingled recyclable solid waste and utilizes the material as a finished product or as a raw material for a manufacturing process.
- (k) **"Mixed paper"** means acceptable paper items which are not separated by type, but are mingled and collected together. These items include white paper, colored paper, coated paper items, corrugated cardboard, boxboard, newspapers and inserts, magazines, catalogs, telephone directories, books, unwanted mail, and other clean, dry paper.
- (l) **"Recyclables"** means those materials in the solid waste stream which are collected, separated, processed, and returned to the economic mainstream in the form of raw materials or product for reuse.
- (m) **"Recycling"** means any process by which materials are diverted from the solid waste stream and are collected, separated, processed, and returned to the economic mainstream in the form of raw materials or product for reuse.
- (n) **"Recycling plan"** means a plan describing a program for source reduction and recycling.
- (o) **"Scrap metal"** means acceptable items consisting of metal and/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.
- (p) **"Solid waste stream"** means solid waste as defined in Section 48-1 of the Montgomery County Code from the point of generation to disposal.
- (q) **"Sorted"** means a category of recyclable materials which are further separated into sub-categories or groupings in preparation for recycling. For example, generators may separate paper by grade or type.
- (r) **"Source separation"** means the process of separating recyclables from the solid waste stream at the point of generation and placing them into containers or arranging them in a manner specified by the County for reuse or recycling.



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- (s) **"Unavailable"** means non-existent.
- (t) **"Unit"** means individual housing unit or business unit.
- (u) **"Waste reduction/source reduction"** means reducing the amount of waste generated at the source or point of generation.
- (v) **"Yard trim"** means leaves, grass, garden trimmings, and brush.

48.00.03.02 Waiver from these Regulations, subject to the requirements of Section 48-3(c) of the Montgomery County Code

- (a) The Director may grant temporary or permanent waivers from participation in the recycling program to individuals who are physically impaired and who are not reasonably able to undertake the activities required by this regulation.
- (b) The Director may also grant a temporary partial waiver for all generator categories for particular materials which would otherwise have to be recycled where markets for these materials are unavailable.
- (c) Persons or entities for whom compliance with Section 3 subsection (b) and subsection (c) herein would be an unreasonable hardship may apply to the Director for a temporary or permanent waiver in a manner prescribed by the Director.
- (d) For entities subject to recycling plan or report requirements, a request for a waiver must be submitted with the recycling plan and/or annual report. If the plan/report has already been filed, the request must accompany an amended plan/report. If the request for a waiver is denied, the plan and/or annual report must be resubmitted within 30 days from the date of denial, to include the materials for which a waiver was sought unless a plan and/or annual report on file already addresses those materials. Those persons or entities requesting a waiver must specify the materials requested to be waived from recycling requirements, the duration of the requested waiver, reason(s) for the request at the time they submit it, and include any documentation necessary to justify a waiver.
 - (1) The Director must consider the following criteria in granting a waiver:
 - (A) The unavailability of markets for the material identified;



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- (B) Extreme financial hardship due to significant disparity between the costs of recycling an identified material and the costs of disposal of that material; or
- (C) The unavailability of an on-site or proximate off-site location to prepare and store materials for recycling.

48.00.03.03 Solid Waste, Waste Reduction and Recycling Program

- (a) Single-family residential recycling program, including dwellings having 6 or fewer dwelling units.

- (1) Recycling services areas.

- (A) The entire County is a recycling service area for the collection of recyclable materials, including: mixed paper; commingled materials; yard trim; Christmas trees; scrap metals; and other materials designated by the Department through means including, but not limited to, posting on the Departmental website.
- (B) Recycling service sub areas are designated on a map maintained by the Department and available upon request. All residents provided County recycling service must recycle in accordance with these regulations, Chapter 48 of the Montgomery County Code (2014), as amended, and the schedule for their recycling service sub area maintained and publicized by the Division of Solid Waste Services.

- (2) Preparation of material for recycling collection.

- (A) Mixed paper. Mixed paper must be separated from other solid waste and placed in wheeled carts provided by the County, in paper bags, in small cardboard boxes or tied with string strong enough to support the weight of the bundle and prevent dispersion. The total weight of each bag, box or bundle must not exceed 45 gallons in volume and 60 pounds in weight. A County supplied wheeled cart does not have a weight limit and can have up to a 100 gallon capacity. Mixed paper contaminated by garbage or other putrescible material must not be included for recycling.
- (B) Commingled materials. All commingled materials must be separated from other solid waste and placed in a County approved container. Lids and tops which are acceptable for recycling must be separated from containers before being placed into an approved recycling container. Any loose food or liquid must be removed.



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- (C) Yard trim. Grass and leaves must be placed in containers or large paper bags labeled "yard trim". Containers or bags must not exceed 45 gallons in volume and 60 pounds by weight. Brush must not exceed 4 inches in diameter and 6 feet in length, and must be placed in labeled containers or paper bags or tied in bundles no greater than 36 inches in diameter. Plastic bags must not be used to contain any yard trim or Christmas trees. Christmas trees must have all ornaments and metal objects removed.
- (3) Solid Waste and Recycling Collection requirements.
- (A) Location. Materials for solid waste and recycling collection must be placed within 10 feet of the publicly maintained right-of-way closest to the dwelling. Materials must not be placed in a manner that interferes with parking or vehicular and pedestrian traffic.
- (B) Alternate location. Residents for whom placement in accordance with paragraph (A) would be a hardship may apply to the Director for permission to use an alternate location. The Director may set a time limit on any permission granted. Any container used at an approved alternate location must be identified, as provided by the Director, and must be visible from the publicly maintained right-of-way.
- (C) Time limit. Solid waste and recyclables prepared for disposal or recycling must be set out for collection no earlier than 5:00 p.m. before the designated day of collection, and no later than 7:00 a.m. on the designated day of collection. Recycling and solid waste containers must be removed from the collection location no later than 5:00 p.m. the day after that designated for collection.
- (D) Litter. Owners and occupants are responsible for keeping the area around all containers litter free.
- (b) Multi-family residential recycling program - Buildings with 7 or more dwelling units.
- (1) Applicability. This section is applicable to all generators, property owners, property managers, whether individuals or entities, and common ownership associations, including boards of condominium associations and cooperative housing projects (as those terms are defined in state law) of multi-family dwelling units that have 7 or more units ("multi-family entities"). This section is not applicable to facilities receiving collection as described in (a) or to businesses covered under (c).



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- (2) Multi-family entities and residents must recycle. Materials which are required to be recycled are: cardboard; mixed paper; commingled materials; yard trim; Christmas trees; scrap metal items; and other materials designated by the Department through means including, but not limited to, posting on the Departmental website. Persons or entities covered by this section are encouraged to recycle any other materials for which there is a viable market.
- (3) Plan and report requirements.
 - (A) Designation of responsible agent. Multi-family entities subject to this section must designate an agent responsible for carrying out the plan and report requirements of this section. In the case of multi-family dwelling units covered by a common ownership association, the association representative, as listed in the Office of Common Ownership Communities, is responsible. In the case of leased units or facilities, the property owner or representative, as listed with the Montgomery County Office of Landlord and Tenant Affairs or as confirmed through other sources, is responsible.
 - (B) Waste reduction and recycling plan.
 1. Who must submit. Multi-family entities having 101 or more units must submit a waste reduction and recycling plan demonstrating how the entity will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight, for each facility. Multi-family entities having 100 or fewer units must submit a waste reduction and recycling plan demonstrating how the entity will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight, within 60 days from receipt of a written request for a plan from the Department.
 2. Contents of plan. The plan must be submitted electronically or on forms provided by the Department and must include, at a minimum: a description of the facility by type; name, address, and telephone number of contact person responsible for on-site recycling program; list of materials to be recycled; name and address of person/collection company providing recycling collection service; sites where materials are delivered; and description of waste reduction activities.
 - (C) Annual report on waste reduction and recycling activities.
 1. Who must submit. All multi-family entities having 101 or more units must prepare and submit to the Department, on or before February 1 of each year, an annual waste



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reduction and recycling report for each facility covering the previous calendar year. Multi-family entities having 100 or fewer units must prepare and begin submission of initial annual waste reduction and recycling reports within 60 days from receipt of a written request for reports from the Department. From that time forward, each year, all of these entities must prepare and submit to the Department on or before February 1 annual waste reduction and recycling reports covering the previous calendar year.

2. **Contents of report.** The annual report must be submitted electronically or on a form provided by the Department and must include tonnages of materials collected for recycling and for solid waste disposal, a description of the multi-family entity's efforts to educate residents about its recycling program, and any changes from the approved recycling plan required under Section 3(b)(3)B(2) of this regulation. If recyclable materials are self-hauled to a recycling facility, the multi-family entity must obtain scale house tickets and provide these as documentation of quantity recycled for reporting requirements. In the event that scale house tickets are not obtainable, receipts or other proof of quantity recycled may be substituted. The annual report must also include a description of the multi-family entity's efforts to educate tenants, residents and/or employees about its recycling program.
3. **Review Process.** Annual reports will be reviewed, field verified, and audited by the Department through on-site evaluation.
- (4) **Certification.** All reports and plans must be signed by a person authorized to bind the multi-family entity, and must certify that the information is correct to the best of his or her knowledge. Examples of authorized persons include the property owner or responsible agent.
- (5) **Verification of information.** Multi-family entities must maintain and make available, upon request, to the Department for inspection and copying during normal business hours, any contracts and invoices for collection and disposition of materials to be recycled for a period covering the most recent five (5) years. Contract prices and other such financial information may be deleted from the materials provided.
- (6) **Containers.** Containers for all required recyclable materials in adequate sizes and quantities must be placed in each location where trash containers/trash chutes are located, and must be clearly labeled to indicate the appropriate material(s) to be placed inside for recycling. All solid waste and recycling containers for the collection of solid waste and recyclable materials must be located within reasonable and convenient proximity to all dwelling units, and to any offices,



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clubhouses, recreation facilities, and other uses on-site as recommended by the Department. In addition, wherever vending machines dispensing products in recyclable packaging are located, recycling containers for those materials must be located in close and convenient proximity.

- (7) Property Owner of Multi-family Properties. Property owners of multi-family entities must make recycling collection service and storage space for recyclable solid waste available to tenants in compliance with these regulations and Section 48-24 of the Montgomery County Code.
- (8) Collectors Servicing Multi-Family Entities.
 - (A) Collectors must collect separate from waste 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 not acceptable, then the collector must inform the generator or responsible agent either electronically or in writing using a form designated by the County, keep a copy on file, and send a copy to the Department. The collector must indicate the name of the property, name of the responsible agent notified, date, time, address, nature of the problem, and suggested remedy and specify a collector contact name and telephone number for additional information.
 - (B) Collectors must provide a copy of their current Montgomery County Collector's License to each customer at least once annually, and must keep a copy of such notice and the date provided to its customer in their business records. If a copy has not yet been provided and a customer requests one, the collector must provide the customer with a copy of its license within 3 business days.
- (9) Contract Services.
 - (A) A multi-family entity, when contracting for collection service of recyclable materials must use Licensed Collector with a valid and current license.
 - (B) A multi-family entity contracting for collection services with a Licensed Collector must maintain for inspection a copy of the Licensed Collector's license. A property manager or responsible agent must produce a copy of the license upon request by the Department within 3 business days.



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(c) Commercial recycling and waste reduction program – Generators/Businesses.

- (1) Business Size. For the purposes of this subsection (c), businesses are classified into the following size categories: Large businesses. All businesses with 250 or more employees. Medium-sized businesses. All businesses with 100-249 employees. Small businesses. Businesses with fewer than 100 employees.
- (2) Applicability. This section applies to all generators and businesses, including property owners, property managers, whether individuals or entities, and common ownership associations, including boards of commercial condominium associations, which must recycle the materials described in Section 3(c)(3) herein. All businesses in Montgomery County must comply with these recycling regulations within 30 days of operating within the County.
- (3) Businesses and employees must recycle. Materials required to be recycled by businesses are: cardboard; mixed paper or sorted paper; commingled materials (which may be sorted); yard trim; Christmas trees; scrap metal items; and any other materials designated by the Department through means including, but not limited to, posting on the Departmental website. Businesses are encouraged to recycle any other materials for which there is a viable market.
- (4) Verification of information. Businesses must maintain, and make available to the Department for inspection and copying during normal business hours and upon request, any contracts and invoices for collection and disposition of materials to be recycled for a period covering the most recent five (5) years. Contract prices and other such financial information may be deleted from the materials provided.
- (5) Requirement for a waste reduction and recycling plan.

(A) Applicability.

1. Large and medium-sized businesses. All large and medium-sized businesses must prepare a waste reduction and recycling plan demonstrating how the business will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight.
2. Small businesses. Small businesses must prepare a waste reduction and recycling plan demonstrating how the business will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight, within 60 days from receipt of a written request for a plan from the Department.



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3. Property owner of multi-tenant facilities. Owners of multi-tenant facilities must file a waste reduction and recycling plan covering facilities in their entirety, and including information for all tenants, demonstrating how the businesses will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight.
 4. Multiple Business Locations. Each business required to submit a plan and/or report for multiple locations in the County may submit a single plan and/or report to cover multiple locations, or may submit an individual plan and/or report for each separate location demonstrating how the business will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight, in compliance with these regulations. Any plan and/or report covering multiple locations must list each property address subject to it, and each location covered by the plan and/or report must maintain a copy of the plan and/or report on the premise.
 5. Common ownership commercial properties. The governing body representing owners of a common ownership commercial property must submit a single plan which covers all businesses within that common ownership commercial property that are served by a commonly managed waste and recycling collection system. Any business served by a separate collection system must submit an individual plan covering that business. A plan must demonstrate how the business(es) will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight. Each business covered by the plan must maintain a copy of the plan on the premises.
- (B) Plan updates. A business must update its plan if there are changes to the waste reduction and recycling activities of the business or if required as a result of revisions to these regulations.
- (C) Contents of plan. The waste reduction and recycling plan must be submitted electronically or on forms provided by the Department and must include the following:
1. A description of the business, including:
 - a. Name and address of the property owner and the reporting business.
 - b. Name of all entities affiliated with the business, including any parent and subsidiary business.



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- c. Number of full-time and part-time employees.
 - d. Number of square feet occupied by the business.
 - e. The activities conducted by the business.
 2. A description of the business' current solid waste generation, including:
 - a. Estimated tonnage of all solid waste produced.
 - b. Identification of recyclable solid waste defined in subsection (c)(3) above.
 3. A description of the business' waste reduction and recycling methods.
 4. Name(s) of the person(s) responsible for coordinating recycling and waste reduction activities, preparing the annual report, and for responding to the Department on actions concerning implementation and enforcement of these regulations.
 5. Name and telephone number of the licensed collector responsible for collecting the materials to be recycled and sites where materials are delivered.
- (6) Requirement for an annual report on waste reduction and recycling activities.
- (A) Applicability.
1. Large businesses. Each year all large-sized businesses must prepare and submit to the Department, on or before February 1, annual waste reduction and recycling reports covering the previous calendar year.
 2. Medium-sized businesses. Each year, all medium-sized businesses must prepare and submit to the Department, on or before March 1, annual waste reduction and recycling reports covering the previous calendar year.
 3. Small businesses. Small-sized businesses must prepare and begin submission of initial annual waste reduction and recycling reports within 60 days from receipt of a written request for reports from the Department. From that time forward, each year, all of these small businesses must prepare and submit to the Department, on or before March 1, annual waste reduction and recycling reports covering the previous calendar year.



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4. Property owner of multi-tenant facilities. Owners of multi-tenant facilities must file annual waste reduction and recycling reports covering facilities in their entirety, and including information for all tenants. Each year, owners must prepare and submit to the Department, on or before March 1, annual waste reduction and recycling reports covering the previous calendar year.
 5. Property owners in common ownership commercial properties. The governing body representing owners of a common ownership commercial property must submit a single waste reduction and recycling report which covers all businesses within that common ownership commercial property that are served by a commonly managed waste and recycling collection system. Any business within a common ownership commercial property served by a separate collection system must submit an individual report covering that business. Each year, the governing body and owners must prepare and submit to the Department, on or before March 1, annual waste reduction and recycling reports covering the previous calendar year.
- (B) Review Process. Annual reports will be reviewed, field verified and audited by the Department through on-site evaluation.
- (C) Contents of the report. The annual report must include the following information on waste reduction and recycling activities conducted between January 1 and December 31 of the previous calendar year:
1. Any change in the description of the business as submitted in the waste reduction and recycling plan or most recent annual report, including:
 - a. The purpose of, and activities conducted by, the business.
 - b. The number of full-time and part-time employees associated with the business.
 - c. The number of square feet occupied by the business.
 2. Identification of the total annual tonnage of solid waste generated and the annual tonnage of each type of material being reduced or recycled.
 3. Name and telephone number of the licensed collector responsible for collecting the materials to be recycled and sites where materials are delivered.



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4. If recyclable materials are self-hauled to a recycling facility, the business must obtain scale house tickets and provide these as documentation of quantity recycled for reporting requirements. In the event that scale house tickets are not obtainable, receipts or other proof of quantity recycled may be substituted.
 5. A description of the progress in waste reduction and reuse efforts undertaken by the business.
 6. A description of the property owner's, property management's, business condominium association's or business' efforts to educate tenants and/or employees about its recycling program.
- (D) Certification. All reports and plans must be signed by a person authorized to bind the business, and must certify that the information is correct to the best of his/her knowledge. Examples of authorized persons include a corporate officer (President, Vice-President, Chief Administrative Officer, Chief Operating Officer or their designee) or owner of the business.
- (7) Containers. The owner or operator of each business must place containers for all required recyclable materials in adequate sizes and quantities in each location where trash containers are located, and must clearly label each container to indicate the appropriate material(s) to be placed inside for recycling. All solid waste and recycling containers for the collection of solid waste and recyclable materials must be located within reasonable and convenient proximity to all buildings and other uses on-site as recommended by the Department. In addition, any business that sells or provides food or beverages in recyclable containers for on-site consumption must provide an adequate size and number of recycling containers for use by consumers, and wherever vending machines dispensing products in recyclable packaging are located, recycling containers for those materials must be located in close and convenient proximity.
- (8) Property owner of commercial properties and business condominium associations. Property owners must make recycling collection service and storage space for recyclable solid waste available to tenants in compliance with these regulations and Section 48-24 of the Montgomery County Code.
- (9) Collectors servicing commercial properties.
- (A) Collectors must collect, separate from waste 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 not



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acceptable then the collector must inform the generator or responsible agent either electronically or in writing using a form designated by the County, keep a copy on file, and send a copy to the Department. The collector must indicate the name of the business, name of the responsible agent notified, date, time, address, nature of the problem and suggested remedy and specify a collector contact name and telephone number for additional information.

- (B) Collectors must provide a copy of their current Montgomery County Collector's License to each customer at least once annually, and must keep a copy of such notice and the date provided in their business records. If a copy has not yet been provided, and a customer requests one the collector must provide the customer with a copy of its license within 3 business days.
- (10) Contract Services. Businesses that contract for recycling collection service are required to use a Licensed Collector.
 - (A) A business, regardless of employee size or type, when contracting for collection service of recyclable materials must use a Licensed Collector with a valid and current license.
 - (B) A business contracting for collection services with a Licensed Collector must maintain for inspection a copy of the Licensed Collector's license. A property manager or responsible agent must produce a copy of the license upon request by the Department within 3 business days.

48.00.03.04 Administration

(a) Responsibilities of the Department.

- (1) Forms. The Department must provide any forms or electronic filing systems, as appropriate, that assist multi-family dwellings with 7 or more units and businesses in meeting the requirements of these regulations.
- (2) Confidentiality. Subject to applicable law, the Department must maintain the confidentiality of any information required to be provided in these regulations that identifies markets or customers. The Department must not, unless required by law to do so, disclose this information



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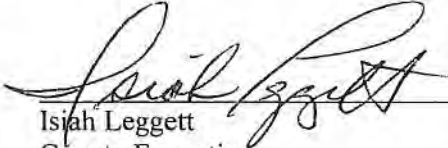
to third parties other than in nonspecific summary form in general recycling and solid waste analyses. This requirement does not prohibit the Department from using this information in preparing a summary analysis of waste reduction and recycling activities in the County.

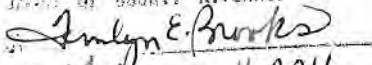
48.00.03.05 Enforcement

These regulations may be enforced in accordance with Montgomery County Code (2014), as amended, Section 48-49.

48.00.03.06 Construction

This regulation must be construed liberally to permit the Department to effectuate the purposes of Article V (recycling) of Chapter 48 of the Montgomery County Code (2014), as amended, and the policies of the County's Comprehensive Solid Waste Management Plan.


Isiah Leggett
County Executive

APPROVED AS TO FORM AND LEGALITY.
OFFICE OF COUNTY ATTORNEY

DATE February 11, 2016

APPENDIX D

County Council Bill 28 - 16, Strategic Plan to Advance Composting, Compost Use, and Food Waste Diversion”.

Bill No. 28-16
Concerning: Solid Waste (Trash) –
Strategic Plan to Advance
Composting, Compost Use and Food
Waste Diversion
Revised: 11/15/2016 Draft No. 9
Introduced: June 28, 2016
Enacted: November 15, 2016
Executive: November 28, 2016
Effective: February 27, 2017
Sunset Date: None
Ch. 33, Laws of Mont. Co. 2016

COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND

Lead Sponsor: Vice President Berliner
Co-Sponsors: Councilmembers Katz, Hucker, Elrich, Riemer and Navarro

AN ACT to:

- (1) require the Director of the Department of Environmental Protection to develop a Strategic Plan to Advance Composting, Compost Use and Food Waste Diversion in Montgomery County
- (2) generally amend County laws related to Solid Waste (Trash).

By adding

Montgomery County Code
Chapter 48, Solid Waste (Trash)
Section 48-17B

Boldface	<i>Heading or defined term.</i>
<u>Underlining</u>	<i>Added to existing law by original bill.</i>
[Single boldface brackets]	<i>Deleted from existing law by original bill.</i>
<u>Double underlining</u>	<i>Added by amendment.</i>
[[Double boldface brackets]]	<i>Deleted from existing law or the bill by amendment.</i>
* * *	<i>Existing law unaffected by bill.</i>

The County Council for Montgomery County, Maryland approves the following Act:

Sec. 1. Section 48-17B is added as follows:

48-17B. Strategic Plan to Advance Composting, Compost Use and Food Waste Diversion in Montgomery County.

(a) Legislative findings. The County Council finds that:

- (1) the County's general goal of solid waste management establishes waste reduction as the most preferred management technique, followed by reuse, composting and recycling, then incineration with energy recovery, and, least preferred, landfilling;
- (2) food waste represents a significant percentage of the County's solid waste stream;
- (3) educating food producers can reduce the generation of excess food that would enter the solid waste stream;
- (4) giving food that would otherwise be wasted to organizations that serve people in need is a means to reuse excess food;
- (5) composting, a means promoting the biological decomposition of organic material such as food waste into a stable, humus-like product, is a first step in the recycling of food waste;
- (6) the use of compost has been demonstrated to benefit soil health by:
 - (A) suppressing plant diseases and pests;
 - (B) reducing or eliminating the need for chemical fertilizers;
 - (C) Promoting higher yields of agricultural crops; and
 - (D) Improving soil structure;
- (7) compost use is a valuable tool in stormwater management that can lower runoff volume due to improved water holding capacity, healthy vegetation/biomass, and increased infiltration; and
- (8) reducing excess food generation, reusing food that would otherwise be wasted, and increasing the amount of food and other

compostable waste that is composted will help the County meet its goal of recycling 70% of the solid waste stream generated in the County.

(b) Strategic Plan required. The Director must develop a Strategic Plan to Advance Composting, Compost Use and Food Waste Diversion in Montgomery County by ~~[[July]]~~ [[October 1, 2017]] January 1, 2018. The Strategic Plan must identify:

- (1) legislative changes, including but not limited to amendments to this Chapter, necessary to reduce food waste and promote composting;
- (2) County policies and initiatives to reduce food waste and promote and support composting in the county;
- (3) models and best practices used by other jurisdictions
- (4) metrics for assessing and increasing food waste diversion, composting, and compost use;
- (5) goals for achieving certain levels of food waste diversion and dates for achieving those goals;
- (6) challenges to achieving the goals and means of overcoming these challenges;
- (7) potential sites for food waste composting operations;
- (8) environmental and public health benefits of composting and food waste diversion; and
- (9) cost estimates and potential economic and environmental benefits of implementing the Strategic Plan

(c) Considerations. The Strategic Plan must consider the following areas in its legislative, policy, metrics, and cost recommendations:

- (1) home composting;
- (2) community-scale composting;

- (3) on-site institutional and commercial composting;
- (4) on-farm composting;
- (5) small-scale commercial composting facilities;
- (6) support for existing and new composting businesses in the form of grants, loans, and land;
- (7) models and best practices, including methods and materials, used by other jurisdictions;
- (8) use of incentives to encourage private food waste diversion and composting; and
- (9) diversion and composting of non-food waste compostables;
- (10) local use of compost to support soil health and the County stormwater management program;
- (11) education and outreach to reduce food waste and promote composting; and
- (12) [[the environmental impact of residential trash hauling by private haulers in upcounty solid waste service districts.]] strategies for maximizing the volume of compostables collected in a curbside collection program.

(d) Consultation with stakeholders. In developing the Strategic Plan, the Director must consult with:

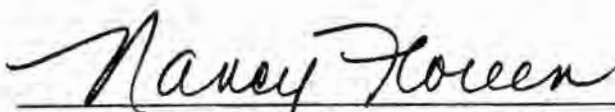
- (1) the County Division of Solid Waste Services;
- (2) the County Department of Permitting Services, including the Land Development and Zoning and Site Plan Enforcement Divisions;
- (3) the County Department of Health and Human Services;
- (4) the County Department of General Services;
- (5) Montgomery County Public Schools;
- (6) the County Planning Department;

- (7) the County Parks Department;
- (8) the County Office of Agriculture;
- (9) the County Revenue Authority;
- (10) the Montgomery County Food Council;
- (11) the Montgomery Countryside Alliance;
- (12) the County Solid Waste Advisory Committee;
- (13) the University of Maryland Extension;
- (14) Community Food Rescue; [[and]]
- (15) the Maryland Horse Council;
- (16) the governing bodies of all County municipalities; and
- (17) organizations and individuals in the County involved in compost production and use and food waste diversion.

(e) Annual report. By July 1 each year, the Director must submit a report to the County Executive and County Council. The annual report must:

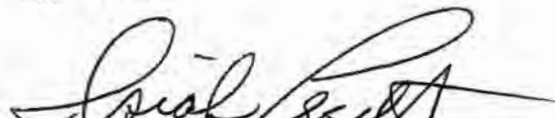
- (1) update the food waste diversion metrics; and
- (2) document the progress towards achieving the goals of the Strategic Plan.

Approved:


Nancy Floreen, President, County Council

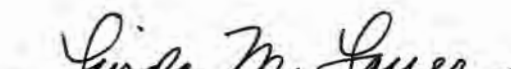
November 16, 2016
Date

Approved:


Isiah Leggett, County Executive

November 28, 2016
Date

This is a correct copy of Council action.


Linda M. Lauer, Clerk of the Council

November 28, 2016
Date

APPENDIX E

County Council Bill 41-14 , Food Service Products – Packing Materials – Requirements

Bill No. 41-14
Concerning: Solid Waste (Trash) – Food
Service Products – Packaging
Materials – Requirements
Revised: October 30, 2014 Draft No. 6
Introduced: September 9, 2014
Enacted: January 20, 2015
Executive: January 28, 2015
Effective: January 1, 2016
§ 48-54(c) January 1, 2017
Sunset Date: None
Ch. 1, Laws of Mont. Co. 2015

COUNTY COUNCIL FOR MONTGOMERY COUNTY, MARYLAND

By: Councilmember Riemer, Council Vice President Leventhal and Councilmember Elrich

AN ACT to:

- (1) prohibit the use of certain expanded polystyrene food service products by food service businesses;
- (2) require the use of compostable or recyclable food service ware by the County, County contractors or lessees, and food service businesses;
- (3) prohibit the sale of certain expanded polystyrene food service products and polystyrene loose fill packaging;
- (4) provide for enforcement; and
- (5) generally amend County law regarding environmentally acceptable food service products and packaging materials.

By adding

Montgomery County Code
Chapter 48, Solid Waste (Trash)
Article VI, Disposable Food Service Products and Packaging Materials
Sections 48-52, 48-53, 48-54, 48-55, 48-56, 48-57, and 48-58

Boldface

Underlining

[Single boldface brackets]

Double underlining

[[Double boldface brackets]]

* * *

Heading or defined term.

Added to existing law by original bill.

Deleted from existing law by original bill.

Added by amendment.

Deleted from existing law or the bill by amendment.

Existing law unaffected by bill.

The County Council for Montgomery County, Maryland approves the following Act:

1 Sec. 1. Article VI (Sections 48-52, 48-53, 48-54, 48-55, 48-56, 48-57, and
2 48-58) of Chapter 48 is added as follows:

3 **ARTICLE VI. Disposable Food Service Products and Packaging Materials.**

4 **48-52. Definitions.**

5 In this Article, the following terms have the meanings indicated:

6 ASTM standard means the American Society for Testing and Materials
7 (ASTM) International Standards D6400 or D6868 for biodegradable and
8 compostable plastics.

9 ASTM standard bioplastic means a plastic like product that meets the ASTM
10 standard.

11 Compostable means material that will break down into, or otherwise become
12 part of, usable compost (e.g., soil-conditioning material, mulch) in a safe and
13 timely manner in an appropriate composting program or facility, or in a home
14 compost pile or device. Compostable disposable food service ware includes
15 ASTM standard bioplastics that are clearly labeled, preferably with a color
16 symbol, such that any compost collector and processor can easily distinguish
17 the compostable ASTM standard bioplastic from non-ASTM standard plastic.

18 Disposable food service ware means containers, bowls, plates, trays, cartons,
19 cups, lids, straws, forks, spoons, knives, napkins, and other items that are
20 designed for one-time use for beverages, prepared food, or leftovers from
21 meals prepared by a food service business. The term “disposable food service
22 ware” does not include items composed entirely of aluminum.

23 Expanded polystyrene means blown polystyrene and expanded and extruded
24 foams that are thermoplastic petrochemical materials utilizing a styrene
25 monomer and processed by a number of techniques, including fusion of
26 polymer spheres (expandable bead polystyrene), injection molding, foam
27 molding, and extrusion-blow molding (extruded foam polystyrene).

Expanded polystyrene food service products means food containers, plates, hot and cold beverage cups, meat and vegetable trays, egg cartons, and other products made of expanded polystyrene and used for selling, providing, or serving food that are:

(1) intended by the manufacturer to be used once for eating or drinking; or

(2) generally recognized by the public as items to be discarded after one use.

Food service business means a full-service restaurant, limited-service restaurant, fast food restaurant, cafe, delicatessen, coffee shop, supermarket, grocery store, vending truck or cart, food truck, business or institutional cafeteria, including those operated by or on behalf of County departments and agencies, and other business selling or providing food within the County for consumption on or off the premises.

Polystyrene loose fill packaging means a void-filling packaging product made of expanded polystyrene that is used as packaging fill. Polystyrene loose fill packaging is commonly referred to as packing peanuts.

Recyclable means material that can be sorted, cleansed, and reconstituted in a cost-effective manner using recycling collection programs provided in the County for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating, converting or otherwise thermally destroying solid waste.

48-53. Prohibition on use of expanded polystyrene food service products.

(a) A food service business must not sell or provide food in expanded polystyrene food service products, regardless of where the food will be consumed.

(b) Subsection (a) does not apply to:

- (1) food or beverages that were filled and sealed in expanded polystyrene containers outside of the County before a food service business received them; or
- (2) materials used to package raw, uncooked, or butchered meat, fish, poultry, or seafood for off- premises consumption.

48-54. Compostable or recyclable disposable food service ware required.

- (a) A County facility, agency, or department using disposable food service ware must use compostable or recyclable disposable food service ware unless the Executive determines that there is no suitable affordable compostable or recyclable product available in accordance with Section 48-57.
- (b) A County contractor or lessee using disposable food service ware must use compostable or recyclable disposable food service ware unless the Executive determines that there is no suitable affordable compostable or recyclable product available in accordance with Section 48-57.
- (c) A food service business selling or providing food or beverages for consumption on or off premises in disposable food service ware must use compostable or recyclable disposable food service ware unless the Executive determines that there is no suitable affordable compostable or recyclable product available in accordance with Section 48-57.;; provided, that this]] This subsection does not apply to:
- (1) prepackaged food or beverages that were filled and sealed outside of the County before a food service business received them; or
- (2) materials used to package raw, uncooked, or butchered meat, fish, poultry, or seafood for off-premises consumption.

48-55. Education and outreach; [[Recyclable]] recyclable and compostable food service ware list.

(a) Education and outreach. The Executive must conduct an education and outreach campaign before and during implementation of the provisions of this Article. This campaign should include:

- (1) informational mailers to and direct contact with affected businesses; and
- (2) distribution of information through County internet and web-based resources; and
- (3) news releases and news events.

(b) No later than 180 days after the effective date of this Act, the Executive must publish a list of vendors offering affordable compostable or recyclable disposable food service ware products. The Executive must review and update this list annually for at least 5 years after it is first published.

48-56. Prohibition on sale.

A person must not sell or offer for sale in the County:

- (a) expanded polystyrene food service products; or
- (b) polystyrene loose fill packaging.

48-57. Exemptions.

If the Executive determines that there is no available affordable compostable or recyclable alternative to a disposable food service ware item, this item must be listed on an exemption list and made available to the public. Sections 48-53 and 48-54 do not apply to a disposable food service ware item on the exemption list or for the first 6 months after an item is removed from the list. The Executive must review and update the exemption list annually to determine whether any items should be removed because an affordable compostable or recyclable alternative has become available.

48-58. Enforcement.

109 (a) Any violation of this Article is a class B civil violation. Each day a
110 violation exists is a separate offense.

111 (b) The County Attorney [[or any affected party]] may file an action in a
112 court with jurisdiction to enjoin repeated violations of the Section.

113 **Sec. 2. Effective date.**

114 (a) The prohibition on use of expanded polystyrene food service products
115 contained in Section 48-53 and the prohibition on the sale of expanded
116 polystyrene food service products and polystyrene loose fill packaging
117 contained in Section 48-56 take effect on January 1, 2016.

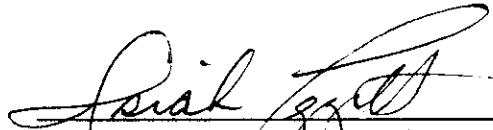
118 (b) The requirement for a County facility, agency, department, contractor,
119 or lessee to use compostable or recyclable disposable food service ware
120 established by Subsections 48-54 (a) and (b) takes effect [[90 days after
121 this Act becomes law]] on January 1, 2016. Notwithstanding any other
122 provision, a County facility, agency, department, contractor, or lessee
123 may use disposable food service ware already purchased as of the
124 effective date of this Act until the supplies are exhausted or until
125 January 1, 2017, whichever is earlier, including disposable food service
126 ware that the County facility, agency, department, contractor or lessee is
127 obligated to purchase under any contracts in force on the effective date
128 of this Act.

129 (c) The requirement to use compostable or recyclable disposable food
130 service ware established by Subsection 48-54(c) takes effect on January
131 1, 2017.

132 *Approved:*

133  1/22/15
George Leventhal, President, County Council Date

134 *Approved:*

135  Jan 28, 2015
Isiah Leggett, County Executive Date

136 *This is a correct copy of Council action.*

137  1/30/15
Linda M. Lauer, Clerk of the Council Date

APPENDIX F
MONTGOMERY COUNTY OFFICE BUILDING RECYCLING PLAN
October, 2020

Office Building Recycling Plan

Stakeholders - Applicability

State Bill 370, Environment – Recycling – Office Buildings, requires the County to address the collection and recycling of recyclable materials from buildings that have 150,000 square feet of greater office space. Per Section 9-1714 of the Environment Article, Annotated Code of Maryland, by October 1, 2021, each owner of an office building that have 150,000 square feet or greater of office space to provide recycling receptacles for the collection of recyclable materials. The office recycling program must include paper, cardboard, metal, and plastic materials. The building owner may establish an agreement with a tenant of their building whereby the tenant is responsible for complying with the recycling requirements of Bill 370.

Through SDAT records, the County identified (see table below) properties with more than 150,000 square feet of office space required to comply with Bill 370. The businesses occupying these properties are classified into three categories:

Business Classification	# of Employees
Large	More than 250
Medium	100 - 249
Small	Less than 100

Businesses of all types classified as medium and large - must prepare a Waste Reduction and Recycling Plan demonstrating how the business will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight.

Within 60 days of receipt of a written request from the Montgomery County's DEP businesses classified as Small must prepare a waste reduction and recycling plan demonstrating how the business will recycle or reduce the amount of solid waste going to disposal facilities with the goal of reducing solid waste for disposal by at least 70% annually, by weight.

Requirements

At a minimum to comply with the State Bill 370, each owner of the participating office building must provide recycling receptacles for the collection of paper and cardboard, metals, and plastic materials and the removal for further recycling of recyclable materials deposited into the recycling receptacles. Furthermore, according to Montgomery County's Executive Regulation (ER) 1-15 (Appendix C), all businesses, non-profit organizations, and government facilities, as well as all employees must recycle: cardboard; mixed and/or sorted paper; commingled material (which may be sorted); yard trim; Christmas trees; scrap metal items; and other materials designated by the DEP through means including, but not limited to, posting on

the DEP website. Businesses are encouraged to recycle other materials for which there is a viable market.

Containers

In accordance with Montgomery County's ER 1-15, office all building owners and operators of each business must provide and place containers for all required recyclable materials in adequate sizes and quantities in each location where trash containers are located, and must clearly label each container to indicate the appropriate material(s) to be placed inside for recycling. All solid waste and recycling containers for the collection of solid waste and recyclable materials must be located within reasonable and convenient proximity to all buildings and other uses on-site as recommended by DEP. Also, any business that sells or provides food or beverage in a recyclable container for on-site consumption must provide an adequate size and number of recycling containers for use by consumers, and wherever vending machines dispensing products in recyclable packaging are located, recycling containers for those materials must also be located in close and convenient proximity.

Collection and Marketing

Businesses or properties that contract for recycling collection services are required to use a Collector with a current, valid Montgomery County Collector's License.

Licensed Collectors are required to formally notify, either electronically or in writing, any generators that are placing unacceptable materials in the recycling containers. Collectors may deliver recyclable materials to the County's Montgomery County Shady Grove Processing Facility and Transfer Station or to private facilities located both within and outside of the County.

Compliance

To ensure compliance with the County's Recycling Regulations, DEP has dedicated Recycling Investigators who are responsible to enforce the County recycling laws in the County.

DEP employs extensive outreach and education programs to ensure building owners and businesses are aware of and understand the recycling requirements under the law. DEP Recycling Investigators use a progressive method of ensuring compliance with recycling laws and regulations. Depending on the nature of the violation or compliance deficiency, Recycling Investigators may issue Verbal Warnings, Notices of Violation, and Citations with fines. Building and business owners, managers, and/or official representatives must initiate actions to correct violations and compliance deficiencies within the timeframe specified County. Failure to comply may lead to additional fines and escalated enforcement actions.