

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

MDE regulates special medical waste incinerators. As of the date of this 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 in 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

³Section 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 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 Water Resource Recovery Facility (WRRF) in Washington DC. The remaining 20 percent is treated in Montgomery County: Seneca WRRF, Damascus WRRF, and the Town of Poolesville WRRF. As shown in Table 3.2, these three plants produce at the three Water Resource Recovery Facilities an estimated 70 wet tons per day (wtpd) of biosolids. The Hyattstown WRRF produces less than one wtpd of biosolids that are transferred to the Damascus WRRF. WSSC Water 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 WRRF	62
Damascus WRRF	4
Poolesville WRRF	4

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

Currently, most biosolids from the WRRF in Montgomery County 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 WRRF began using anaerobic digestion, converting over half the organic matter in biosolids into methane to generate electricity to power operations at Blue Plains. Approximately 25 – 30 percent of the total biosolids produced at Blue Plains WRRF come from Montgomery County. 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>

generated at the Blue Plains WRRF are mostly reused on farmlands through land application programs.

WSSC Water has a new anaerobic digestion facility at its Piscataway WRRF under construction with a completion date of August 2024. This facility will address WSSC Water's long term biosolids management needs.

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 Water. Haulers discharge biosolids and sewage into the sanitary sewer system at a controlled entry point located at the WSSC Water 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

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

the WSSC Water Capital Improvement Plan. If that plan is implemented, it will result in the construction 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 the 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 from single-family residences in the collection district on behalf of the county. Independent Collection Contractors are prohibited from billing County residences any disposal fee for refuse collected at those homes. All single-family homeowners pay an annual Systems Benefit Charge to the County to cover the costs associated with the disposal of their MSW.

Sub-district A

In Sub-district A, the County provides 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 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).

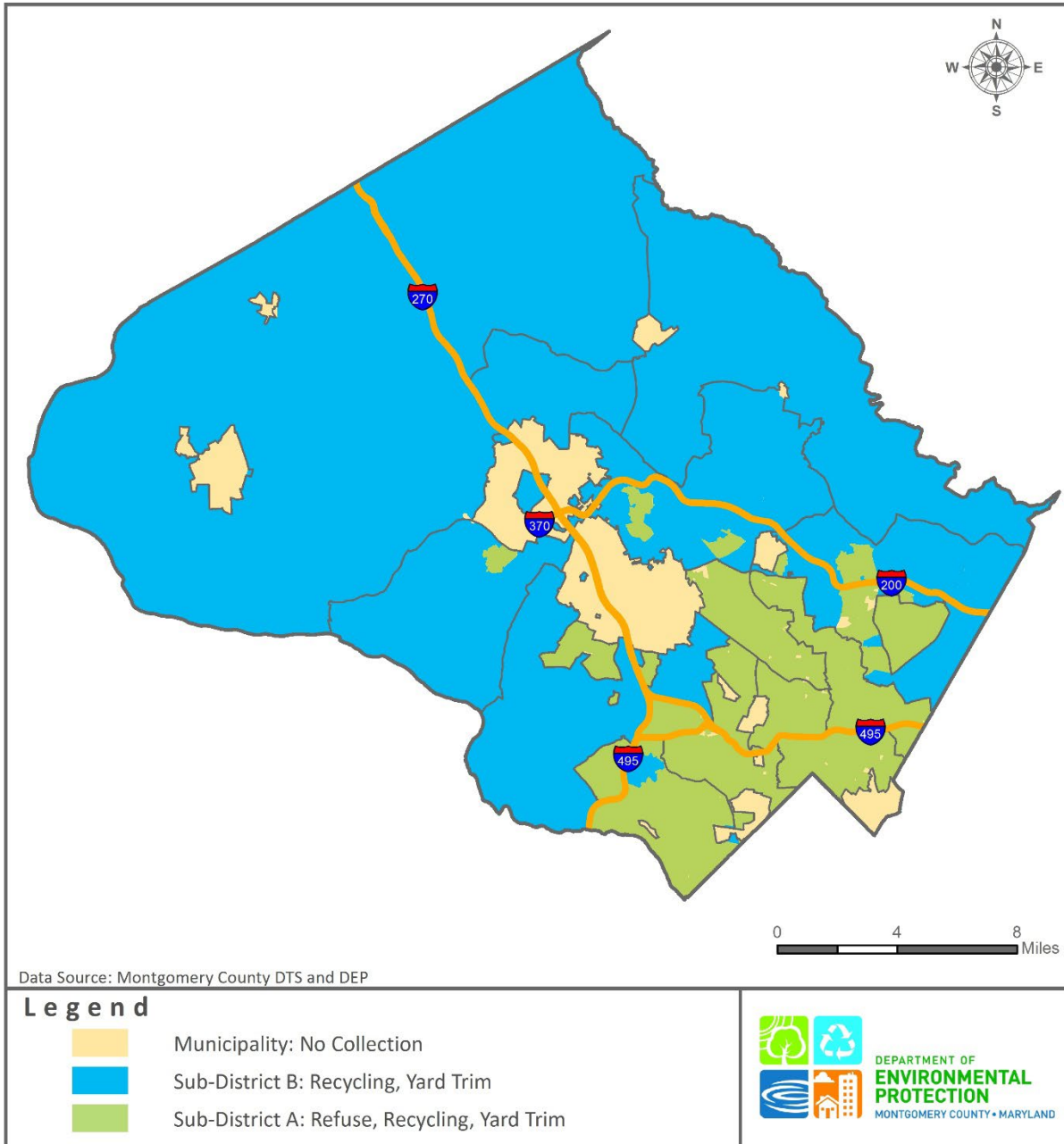
Table 3.4 Materials Management in Incorporated Cities and Municipalities

	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 any generators that place unacceptable materials in the recycling containers, either electronically or in writing. 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 2014"⁷ 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:

⁷ [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

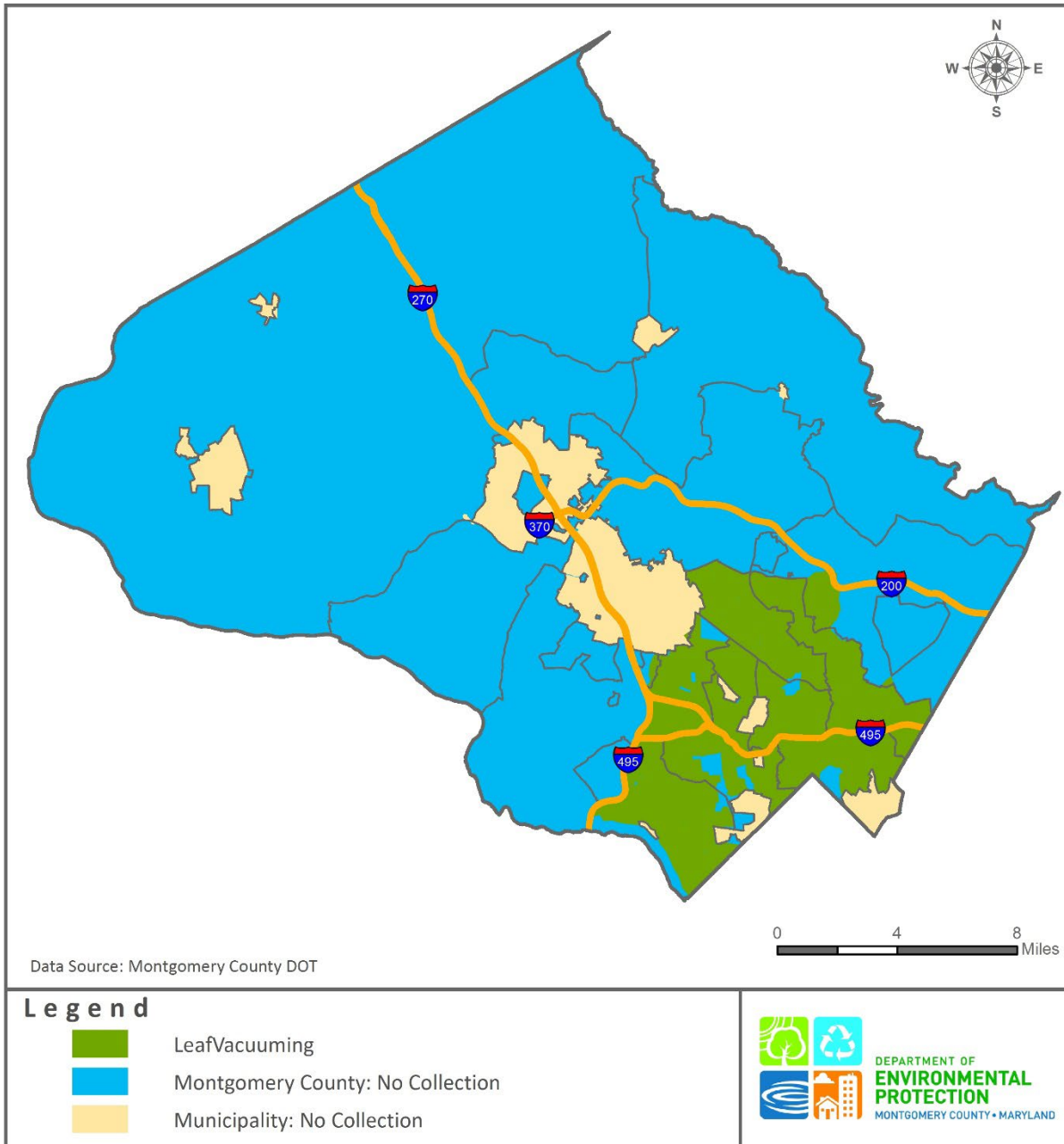
All single-family residences in both Sub-districts are provided yard trim recycling collection once per week year-round, with a maximum of 45 pounds for each container or bundle set-out. Materials must not be set out in plastic bags. Residents can set out yard trimmings in labeled containers or paper 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 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 procedure⁸ 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.

⁸ <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 a 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	Remaining Life	Types of Waste	Annual Tons ⁹
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 ¹⁰ 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 processible 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

⁹ Annual tons received by County Facilities are based on the materials flow diagram used for the MRA report

¹⁰ 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 the County's solid waste. Thus, no MSW is imported from other jurisdictions to County operated solid waste facilities. Also, no major private solid waste facilities exist in Montgomery County that would attract waste generated outside the County's boundaries.

3.5.1 Shady Grove Processing Facility and Transfer Station

The Shady Grove Processing Facility and Transfer Station is located at 16101 Frederick Road on a 45-acre parcel of land in Derwood, Maryland. As seen in Figure 3.3, 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.

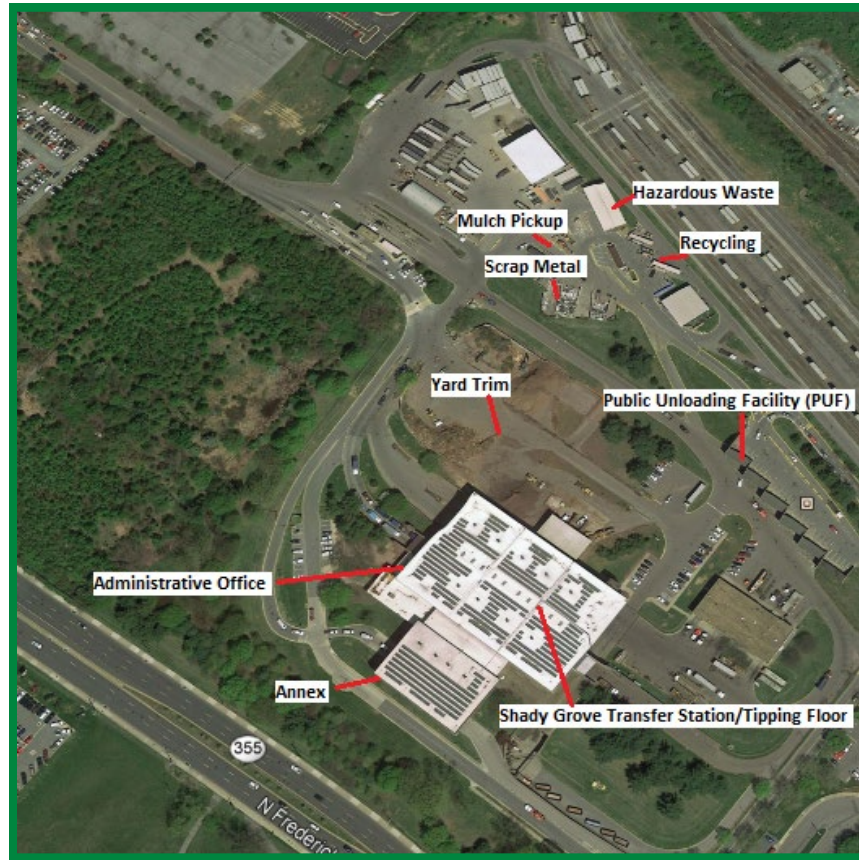
Four compactors at the TS can compress up to 26 to 27-ton loads of solid waste, which are mechanically discharged into 40-foot intermodal containers. Containers of compacted waste are driven to the rail yard located on the TS campus for shipment to the RRF. Processible waste can also be by-passed directly 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 that the residential and non-residential sectors can drop off. 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 TS 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 cans¹¹. The MRF receives and sorts materials five days a week. In May 2021, the County Council approved a capital project to upgrade and increase the capacity of the MRF.

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

¹¹ 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 Water 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. In addition to the process noted above, any material change in either the Waste Disposal agreement or Service Agreement which would result in the closure of the MCRRF must not be approved, or be allowed to take effect until an amendment to the Ten-

Year Plan revising the County's primary disposal path for waste is adopted by the County Council and approved by MDE.

Electricity Sales Agreement – The NMWDA sells the electricity generated at the 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 the removal of nitrogen oxides (NOx), acid gases (SO₂ and HCl), mercury dioxins, and particulate matter. The CEMS measures the emission levels of sulfur dioxide, nitrogen oxides, hydrogen chloride, temperature, opacity, and carbon monoxide to ensure the APC system is operating correctly and the facility is adhering to its air permit. The CEMS data is shared on the County's website at <https://www.montgomerycountymd.gov/sws/facilities/rf/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."¹²

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 NOx emissions by approximately 50 percent. The new NOx control system eliminated the need for the hazardous material anhydrous ammonia to be used and stored at the 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

¹² From "Fourth Operational Phase Ambient Air Monitoring Program, Winter 2013-2014 and 2014-2015" <https://www.montgomerycountymd.gov/SWS/Resources/Files/rf/ambient-air-report-1606/Ambient-Air-Report-1606.pdf> (last accessed 8/24/2018)

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 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, 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, the County's practice is to process at higher rates during peak delivery periods 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 closing 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

Processible¹³ 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.

¹³ Processible Waste – waste that enters the County's waste system and is deemed acceptable for processing at the Resource Recovery Facility.

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 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
Ameriwaste	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, BRESCO, 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).¹⁴ Annapolis Junction facility is permitted for 3,000 tons per day (tpd) but typically handles only about 2,000 tpd. The processing capacities of these facilities are not fully utilized.

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

3.7.2 C&D handled by Private Haulers

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 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 the County's role has increased in recent years. 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 how C&D generated in the County was managed, recycled, and disposed of in CY17.

¹⁴ Personal communication with Jeffery Dickerson, District of Columbia, 2/5/2013.

**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 Haulers Report, CY 2017. Reported as Non-MRA Materials Recycled

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

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

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 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

