

MONTGOMERY COUNTY MARYLAND

Aiming for Zero Waste

Baseline Review and Current State Assessment

Technical Memorandum #1 – Executive Summary



Prepared for the Department
of Environmental Protection
Montgomery County, Maryland

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Table of Contents

1	Background and Purpose.....	1
2	Waste Composition Studies	1
3	County Waste Collection and Community Engagement Services	2
4	County-Owned Waste Management Facilities.....	5
5	Funding & Financial Information	8
6	Contract Review.....	10
7	Growth Projections.....	10
8	Waste Generation and Recycling Rates	11
9	Conclusions.....	14

Figures

Figure ES 1 – County Materials Management Facilities and Service Areas	3
Figure ES 2 - Site Plan of Shady Grove Transfer Station and Processing Facility	7
Figure ES 3 - Annual Recycling/Diversion Rates in Montgomery County	14

Tables

Table ES 1 - Comparison of Waste Composition Studies	2
Table ES 2 - Number of Households Served and Tons Managed by District (CY17)	4
Table ES 3 - Description of County Owned Facilities and Types of Materials Managed	5
Table ES 4 - Solid Waste Charge Components and Annual Fees by Sector (FY19).....	9
Table ES 5 - Solid Waste Collection Contracts.....	10
Table ES 6 - Average Annual Population and At-Place Employment Growth (2018 to 2030)	11
Table ES 7 - Tons of Materials Generated and Recovered in Montgomery County (CY 2017).....	12
Table ES 8 - Breakdown of Waste Generated in Montgomery County by Sector (CY 2017)	13
Table ES 9 - Residential and Non-Residential Waste Generation Rates (CY2017)	13
Table ES 10 - Recycling and Diversion Rates for Montgomery County (CY 2017).....	13

1 Background and Purpose

The Montgomery County Department of Environmental Protection, Solid Waste Services Division, is developing a vision for materials management in the County. The Aiming for Zero Waste Plan (Plan) will strategically evaluate the County's programs and facilities to guide the County's actions and investments over the next 20-plus years.

Montgomery County (the County) has a robust and well-established waste management system with a number of waste management facilities integrated into the system to provide the County and its customers with a very high level of service including a Material Recycling Facility (MRF), the Shady Grove Processing Facility and Transfer Station, the Resource Recovery Facility, the Montgomery County Yard Trim Composting Facility, closed landfills, and land designated for future landfill capacity.

The County has an extensive suite of services and programs designed to reduce waste, and increase reuse, recycling, and buying recycled, supported by a comprehensive education, technical assistance, and enforcement program. The County has also taken the proactive step of developing regulations to guide their waste management program.

In 2016, with a Maryland Recycling Act (MRA) waste diversion rate of 60 percent, the County had the second highest diversion rate in the State of Maryland, just 0.6 percent from the top-performing county (Prince George's).

While the County has attained a very respectable diversion rate of over 61 percent (2017), there remains a gap from the 70 percent diversion rate that the County is targeting which was premised on the diversion of additional materials such as food scraps to allow the County to achieve higher diversion rates. Lack of processing capacity has hindered implementation of a food scraps program which would assist with meeting the 70 percent diversion rate goal. The County has taken steps toward diversion of organics, with the development of a Strategic Plan to Advance Composting, Compost Use and Food Scrap Diversion (April 2018) as called for in Bill 28-16.

The purpose of Technical Memo #1 is to create a comprehensive description of the County's existing integrated solid waste management system which will be utilized as a baseline, the foundation for the Plan, to achieve the County's strategic objectives for programs and facilities. To prepare this Baseline Review and Current State Assessment Technical Memo, HDR has utilized information available from the County and prior reports related to its solid waste and recycling programs, information available on the internet and direct contact with companies/businesses. The result is a detailed and concise overview of the current waste management system from which future system changes can be evaluated and their potential impact assessed.

2 Waste Composition Studies

In order to establish a baseline for the Plan, evaluating the composition of materials generated in Montgomery County is utilized in conjunction with other key data, to develop a comprehensive picture of the County's materials management system for use in future projections and program analyses. The County completes a waste composition study, for disposed materials received at the Shady Grove Processing Facility and Transfer Station, every four years with the most recent study completed in 2016-2017. The results of the waste composition studies provide information on waste received at the Shady Grove Processing Facility and Transfer Station but are not intended to provide data on waste generation or recycled materials.

2.1 Trends in Waste Composition

The results of the two most recent waste composition studies were compared to look for trends in waste disposal in the County. As shown in Table ES 1 most of the material components remained stable over the four year period with minor increases or decreases noted, with the exception of wood which showed a significant increase over the period.

Table ES 1 - Comparison of Waste Composition Studies

Percentage of the Waste Stream by Weight			
Material Components	2012-2013 Overall	2016-2017 Overall (adjusted)	Trend
Paper	25.7%	22.4%	Decrease ↓
Plastic	16.8%	16.1%	Decrease ↓
Organic	40.7%	40.7%	Stable —
Yard Waste	1.8%	2.7%	Increase ↑
Wood	2.8%	7.0%	Significant Increase ↑↑
Ferrous Metal	2.6%	1.9%	Decrease ↓
Non-Ferrous Metal	1.0%	0.9%	Stable —
Glass	2.9%	2.0%	Decrease ↓
Inorganic*	5.3%	5.9%	Increase ↑
Household Hazardous Waste	0.3%	<0.1%	Decrease ↓
Totals	100.0%	100.0%	

Source: SCS Engineers. Montgomery County Waste Composition Study Summary of Results, July 26, 2013.

* The Inorganic category includes concrete/brick/rock, sheet rock, latex paints, fluorescent lamps, electronics, and miscellaneous inorganic materials

3 County Waste Collection and Community Engagement Services

3.1 Waste Collection

The management of municipal solid waste (MSW) generated in Montgomery County is shared between the County and the private sector. Montgomery County's Division of Solid Waste Services (DSWS) provides curbside solid waste and recyclable materials collection services to single-family homes¹ within certain collection areas. The County's collection areas are known as Sub-districts A and B. Curbside

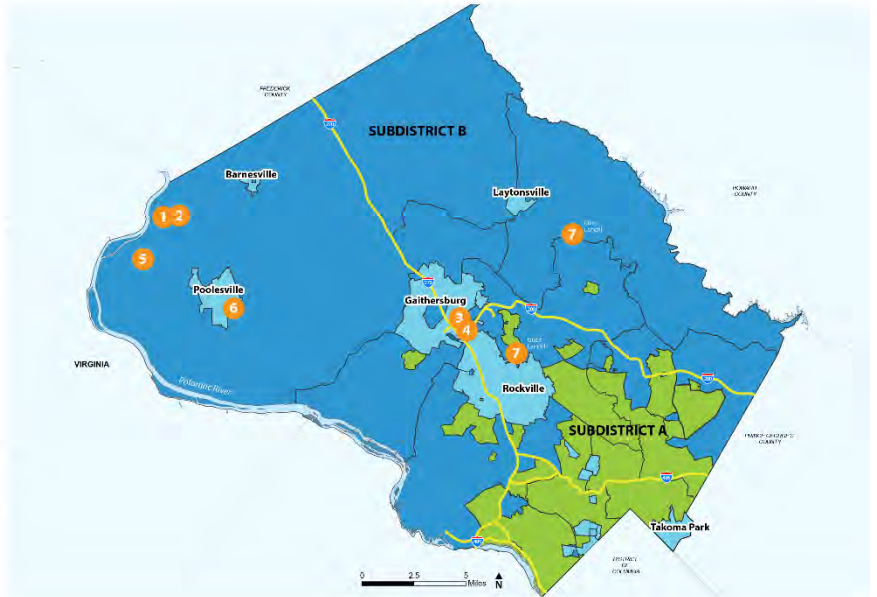
¹ Single-family homes include dwellings having 6 or fewer units

recycling, scrap metal, and yard trim collection service is provided to 218,000 single-family homes in both Sub-districts A and B, and trash collection is only provided to 92,000 single-family homes in Sub-district A. Incorporated municipalities (e.g. towns, cities) provide their own collection services to residents, predominantly through private service providers. Private sector solid waste collectors provide trash collection services to single-family homes in Sub-district B, multi-family properties with seven or more dwelling units, some incorporated municipalities, and the non-residential sector. Figure ES 1 provides the County and municipality facilities and service areas.

Figure ES 1 – County Materials Management Facilities and Service Areas

County Materials Management Facilities and Service Areas

- 1 Resource Recovery Facility
 - 2 Yard Trim Compost Facility
 - 3 Shady Grove Processing Facility and Transfer Station
 - 4 Recycling Center
 - 5 Site 2 landfill
 - 6 Poolesville Beauty Spot
 - 7 Closed landfill
-
- Subdistrict A - County provided recycling, yard trim, scrap metal and trash collection service
 - Subdistrict B - County provided recycling, yard trim and scrap metal collection service
 - Other municipal collection areas



Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services, 2018

Table ES 2 presents a breakdown of the households receiving County service and annual tons of materials collected for the thirteen areas comprising the two Sub-districts.

Table ES 2 - Number of Households Served and Tons Managed by District (CY17)

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 paper products collected in a 64 gallon wheeled cart

2. Scrap metal includes those materials collected at the curb by appointment

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)

3.2 Community Engagement

Montgomery County has several outreach and educational programs to inform residents of single-family and multi-family properties, businesses, non-profit organizations, government facilities, and schools about proper management of solid waste including reducing waste, reusing items and materials, recycling, and buying recycled. The following are examples of outreach and engagement activities conducted by the County or available to stakeholders:

- Tours of the County's facilities:
- Brochures, flyers, fact sheets, posters, and videos
- Solid Waste Services website (<https://www.montgomerycountymd.gov/sws/>)
- Social media – DSWS uses Twitter (@TalkingTrashMC), Facebook (MCRecycles), Flickr, YouTube and a blog. DEP utilizes Twitter (@MyGreenMC), Facebook (MyGreenMontgomery), Instagram (MyGreenMC), Pinterest, YouTube, Flickr and a blog.
- Compost bins and training sessions to promote grass cycling and composting.
- Seminars and workshops on reducing waste, reuse, recycling, buying recycled and composting are also available.

4 County-Owned Waste Management Facilities

Montgomery County owns several solid waste management facilities as presented in Table ES 3.

Table ES 3 - Description of County Owned Facilities and Types of Materials Managed

Description of County Owned Facilities and Types of Materials Managed			
Facility Name	Location	Owner	Types of Materials Managed
Shady Grove Processing Facility and Transfer Station	16101 Frederick Rd Derwood, MD 20855	Montgomery County	Waste to RRF Non-processible Yard trim Brush to mulch
Resource Recovery Facility (RRF)	21204 Martinsburg Rd Dickerson, MD 20842	Montgomery County (land) Northeast Maryland Waste Disposal Authority (RRF)	Solid Waste
Montgomery County Yard Trim Composting Facility (MCYTFCF)	21210 Martinsburg Rd Dickerson, MD 20842	Montgomery County	Leaves and grass
Recycling Center (Materials Recovery Facility)	16105 Frederick Rd Derwood, MD 20855	Montgomery County	Recyclables
Poolesville Beauty Spot	19200 Jerusalem Road Poolesville, MD 20837	Montgomery County	Bulk trash
Site 2 Landfill Site (not constructed)	Near Martinsburg Rd & Wasche Rd Dickerson, MD 20842	Montgomery County	N/A

Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services, Capture Model CY17

4.1 Materials Recovery Facility

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 (e.g. cans, bottles, some plastics) and Paper. The MRF processes materials from single-family and multi-family residences, as well as some commercial sources.

4.2 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. It is located adjacent to the Recycling Center and receives trash and recyclables from permitted solid waste haulers and collectors as well as residents at the public drop-off area.

The Shady Grove Processing Facility and Transfer Station has a waste operating permit limit of 821,500 tons per year. On an annual basis, the Shady Grove Facility processes about 550,000 to 625,000 tons of processible (combustible) waste, 40,000 to 60,000 tons of non-processible waste, about 75,000 tons of yard trim, and about 8,000 tons of scrap metal, electronics, and other recyclables. In 2017, 668,243 tons of trash and recyclable material was received and processed at the facility. ²

In addition, C&D waste generated by the private sector can be brought to the Shady Grove Transfer Station as well as 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 waste generated in the County was recycled and disposed. Of the C&D generated, 49 percent was received by Montgomery County and recycled, combusted in the RRF, or landfilled and 51 percent was handled by the private sector.

4.2.1 Drop-off Areas at the Transfer Station

Shady Grove accepts a wide variety of materials which can be dropped-off by the residential and non-residential sector. The transfer station has locations for the drop-off of various materials to be properly disposed, recycled, and reused as shown in Figure ES 2 on the following page. Items that may be dropped off at the transfer station include household hazardous waste (HHW), electronics, building materials, textiles, bulky rigid plastics, scrap metal, bikes, and tires.

² Montgomery County, Capture Model CY17

Figure ES 2 - Site Plan of Shady Grove Transfer Station and Processing Facility



Source: Google image, photograph taken 04/2018

4.3 Resource Recovery Facility

The Resource Recovery Facility (RRF) processes waste to recover energy and additional recyclable materials (e.g. ferrous metals). The RRF began operation in August of 1995 with a processing limit of 657,000 tons per year. The County limits the RRF to 95 percent of its capacity to ensure it does not exceed its permitted limit and targets to operate in the range of 85-95 percent. In CY 2017 the RRF accepted 575,162 tons of waste, which is about 87.5 percent of its capacity. Of all non-recyclable processible waste delivered to the County's Shady Grove Processing Facility and Transfer Station, some of that material is recycled, some is sent as bypass, and some is sent by rail to the RRF for waste-to-energy.

4.4 Montgomery County Yard Trim Composting Facility

The Montgomery County Yard Trim Composting Facility is located in Dickerson, Maryland. The County contracts with the Maryland Environmental Service (MES) for operation of the facility.

The facility processes 77,000 tons of material per year (the maximum allowed as per the agreement with the Sugarloaf Citizens Association). The facility consists of a 49-acre asphalt pad, three stormwater management ponds, 80,000 square foot pavilion for drying and screening finished compost, a scale house, a maintenance and storage building, and a pump house for an onsite well. An open-air windrow operation is used for the composting of the leaves and grass using mobile turning and shredding equipment.

The majority of the leaf and yard trim generated by the single-family residential sector is sent to the County's facility; however, the yard trim generated by multi-family and non-residential sector is sent to private composting facilities located within and outside the County. The County currently does not have an organics processing facility for food waste; therefore, any food waste collected is sent to private facilities.

4.5 Land Reserved for Potential In-County Waste Landfill

The County currently owns 820 acres of land in Dickerson, Maryland to act as a potential future in-County landfill as a contingency in the event economic conditions change or the law no longer allows out-of-County waste disposal. This location is along Wasche Road and is known as "Site 2". The County continues to allow this site to be used for agriculture purposes until a landfill is needed. It is anticipated that the footprint of the landfill would consist of 125 acres.

4.6 Landfills

The County is responsible for post-closure care of two closed landfills: the Gude Landfill and the Oaks Landfill. The Gude Landfill is the oldest formal landfill in the County and is located at 600 East Gude Drive, in Rockville, Maryland. The County is also responsible for post-closure care of the Oaks Landfill located on a 545-acre tract near Laytonsville, MD. There are currently no active landfills located within the boundaries of the County.

4.7 Poolesville Beauty Spot

The Poolesville Beauty spot is a satellite drop-off facility for residents to dispose of bulky waste.

5 Funding & Financial Information

The County's solid waste division has a budget of approximately \$100 million per year. The Annual Operating Budget and the Approved Capital Improvements Program for the DEP are updated each year with basic cost information and fiscal data related to the solid waste program.

Under County law, the charges set by the County for solid waste services must equal expenses (i.e. revenue neutral). The solid waste system is funded from an independent, legislatively established Solid Waste Enterprise Fund, primarily funded by:

- Tipping fees,
- Systems benefit charges,
- Trash collection and leaf vacuuming charges, and
- Revenues and credits from the sale of landfill gas, recyclables, and compost.

The County solid waste program also generates a variety of revenues and credits for the Solid Waste Enterprise Fund, which offset the amount needed for systems benefit charges. Sources of revenue include the sale of electricity from closed landfills and the RRF, sale of recyclables from the MRF and recovered ferrous metals from the RRF, and the sale of compost and mulch products from the Yard Trim Composting Facility and the Shady Grove Processing Facility and Transfer Station. Additional revenues are generated from interest on reserves in the Solid Waste Enterprise Fund, and other miscellaneous sources.

Table ES 4 - Solid Waste Charge Components and Annual Fees by Sector (FY19)

Solid Waste Charge Components and Annual Fees by Sector (FY19)				
Solid Waste Charge Components	Description	Single-family	Multi-family	Non-Residential Properties
Disposal Fee	A disposal fee acts as a per ton "tipping fee" at Shady Grove Transfer Station. This is charged to either the trash collector or the homeowner. Homeowners who receive trash collection from the County prepay the disposal fee based on County's per ton tipping fee and an average per ton generation rate for each household. Private collectors for residents that do not receive service from the County are responsible to pay at tipping fee at the Shady Grove Facility.	\$51.48	Not Applicable If the property's private sector trash collector uses the County's Shady Grove Processing Facility and Transfer Station, a "tipping fee" of \$60.00 per ton is paid there based on the amount of waste delivered. This fee may be passed on to the property owner by the private trash collector.	Not applicable to non-residential property owners. The County charges a Tipping Fee to private trash collectors (not to the property owner) depositing trash from nonresidential properties at the Shady Grove Processing Facility and Transfer Station. Private trash collection companies may pass this cost along to their nonresidential customers.
Base Systems Benefit Charge	Base systems benefit charges are used to provide funding for the remaining costs of developing and maintaining basic solid waste programs and facilities needed in the County. The charges cover costs such as system administration, enforcement, waste reduction programs, debt service on existing facilities and the fixed cost of disposal programs and facilities (e.g. the RRF).	\$25.78	\$1.33 per dwelling unit	Paid by owners of properties with improvements valued over \$5,000. Covers that portion of the County's costs of providing basic solid waste services to manage nonresidential waste, which costs are not covered by Tipping Fees. Assessed by the pounds of waste estimated to be disposed per-square-foot base on the type of land use, and the actual "enclosed" area on the property.
Incremental Benefit Charge	The Incremental Base Charge is based on the services provided to each sector. Covers the cost of certain incremental services provided by the County only to non-municipal single-family households. Covered program costs include the curbside blue bin program, yard trim collection program, operation of the commingled container recycling facility, mixed paper processing, drop-off programs (net of material sales revenue), rate stabilization, HHW programs, development of recycling programs, and single-family recycling education and outreach.	\$127.85	\$14.73 per dwelling unit	Paid by all properties via tax bill. Based on size of improved floor area and the waste generation characteristics of the property:
Trash Collection Charge	Charged to single-family residences with 6 or fewer units (residents that receives trash collection from the County).	\$77.00	Not applicable	Not applicable to non-residential properties.
Leaf Vacuuming Charge	Charged to owners in the Leaf Vacuuming Collection District.	\$102.93	\$4.08 per dwelling unit	Not applicable to non-residential properties.

Source: <https://www.montgomerycountymd.gov/sws/swc/nr.html>, accessed August 9, 2018

6 Contract Review

The County has established many contractual relationships with haulers, the Northeast Maryland Waste Disposal Authority (NMWDA), Maryland Environmental Services (MES), and other businesses to manage their integrated solid waste system as shown in Table ES 5.

Table ES 5 - Solid Waste Collection Contracts and Service Agreements

Solid Waste Collection Contracts		
Contractor	Service Area	Services Included
Ecology Services	Areas 6 & 8	Trash and Recycling Collection
Ecology Services	Area 9-13	Area 9-12: Recycling Collection Area 13: Trash and Recycling Collection
Unity Disposal	Area 1,2,4 & 5	Trash and Recycling Collection
Unity Disposal	Area 3	Trash and Recycling Collection
Republic Services	Area 7	Recycling Collection
Service Agreements		
Contractor	Contract Agreement	
NMWDA	Waste Disposal Agreement (RRF)	
NMWDA	Service Agreement (RRF)	
NMWDA	Intergovernmental Agreement	
NMWDA	Various agreements including Solar Power and Services (Sun Edison, LLC), LFGE, electronics and other task orders	
MES	MRF and Yard Trim and Composting Facility Operations	
Clean Harbors Environmental Services	HHW and Ecowise Program	

Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services, Contract Master List Modified, 2018

7 Growth Projections

Population and employment projections are developed and utilized to estimate future disposal rates. Population projections growth at-place of employment are based on data from the Maryland-National Park and Planning Commission Cooperative Forecast. Table ES 6 presents average annual population growth estimates and annual average growth at-place of employment through 2030.

Table ES 6 - Average Annual Population and At-Place Employment Growth (2018 to 2030)

Average Annual Population Growth (2018 to 2030)	
Calendar Year	Estimated County Population*
2018	1,052,888
2023	1,097,106
2028	1,138,180
2030	1,154,200

Average Annual Growth of At-Place Employment (2017-2030)	
Calendar Year	Estimated County Employment*
2018	554,800
2023	586,416
2028	620,520
2030	635,000

Source: MNCPPC, Cooperative Forecast. Round 8.3, five-year increments

8 Waste Generation and Recycling Rates

To calculate recycling and waste diversion rates, DEP uses the State of Maryland’s method for Recycling and Diversion Rate Accounting (Executive Regulation 7-12). The recycling rate is calculated by totaling the MRA recycling tonnage (including ash tonnages sent for beneficial use credits) and dividing that total by the total of MRA recycling tonnage and MRA waste disposed. The recycling rate plus the source reduction credit make up the diversion rate. The State provides jurisdictions the opportunity to earn up to 5 percent waste diversion as a source reduction credit from specific source reduction activities. This is included in the County’s goal of 70 percent diversion.

$$\text{Recycling Rate} = \frac{\text{MRA Recycling}}{\text{MRA Recycling} + \text{MRA Waste Disposed}}$$

$$\text{Diversion Rate} = \text{Recycling Rate} + \text{Source Reduction Credit}$$

Table ES 7 presents the tons of materials generated and recovered in Montgomery County in 2017 as well as a breakdown of how the County’s recycling rate is calculated.

Table ES 7 - Tons of Materials Generated and Recovered in Montgomery County (CY 2017)

Tons of Materials Generated and Recovered in Montgomery County (CY 2017)		
Generated Materials By Category		Tons
Total Waste Generated in the County (Residential, Commercial, C&D)		1,378,396
A	C&D Waste (Recycled, Landfilled, Burned)	275,345
B	Residential & Commercial Waste Recycling (counts toward recycling rate)	369,125
C	Residential & Commercial Yard Trim (counts toward recycling rate)	84,489
D	Residential & Commercial MSW Disposed (Burned, Landfilled)	649,437
E	Total Residential and Commercial Waste Generated (not including C&D)	1,103,051
Recovered Materials By Category		Tons
F	Metal Recovered from RRF attributed to Residential/Commercial (counts toward recycling)	7,039
G	Metal Recovered from RRF attributed to C&D (does not count toward recycling rate)	1,023
H	Ash Recycled from RRF attributed to Residential/Commercial (counts toward recycling rate)	156,080
I	Ash Recycled from RRF attributed to C&D (does not count toward recycling rate)	22,676
J	Total Recycled (Recycling, Yard Trim, Metal, Ash) (B+C+F+H)	616,733
K	Total Generated (E)	1,103,051
L	Recycling Rate (J/K)	55.91%

Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services, September 2018

Over 50 percent of waste in Montgomery County is generated by the non-residential sector (i.e. businesses). Table ES 8 presents a breakdown of waste generated by sector in the County.

Table ES 8 - Breakdown of Waste Generated in Montgomery County by Sector (CY 2017)

Breakdown of Waste Generated in Montgomery County by Sector (CY 2017)	
Sector	Percent of Total Waste Generated
Single-family	35.70%
Multi-family	9.49%
Non-Residential	54.81%

Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services, Capture Model CY17

In 2017, generation rates ranged from 974 pounds/capita per year to 2,168 pounds/employee per year as presented in Table ES 9.

Table ES 9 - Residential and Non-Residential Waste Generation Rates (CY2017)

Residential and Non-Residential Waste Generation Rates (CY2017)		
Residential Tons	Population	lbs/capita/year
508,738	1,043,750	974
Non-Residential Tons	Employees	lbs/employee/year
594,314	548,200	2,168

Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services, Capture Model CY17

Table ES 10 presents the County's 2017 recycling and diversion rates.

Table ES 10 - Recycling and Diversion Rates for Montgomery County (CY 2017)

Recycling and Diversion Rates for Montgomery County (CY 2017)	
Single-family Recycling Rate	62.58%
Multi-family Recycling Rate	28.70%
Non-Residential Recycling Rate	55.82%
Overall Recycling Rate	55.91%
Source Reduction Credit Earned	5.00%
Overall Diversion Rate (including 5% Source Reduction credit)	60.91%

Source: Montgomery County, October 2018

Montgomery County's current recycling rate goal is 70% by 2020. As shown in Figure ES 3, the County has historically been able to increase its recycling rates year over year until approximately 2012, when rates levelled off. Recycling in the County has faced many of the same challenges seen around the

nation, including the economic downturn, the continuing trend toward lighter weight recyclable and non-recyclable containers, and reduced use of printed media such as newspapers. The role of markets for recyclable material continues to play a role in the success of recycling programs and has become more important than ever with recent changes to overseas markets.

Figure ES 3 - Annual Recycling/Diversion Rates in Montgomery County



Source: Montgomery County, MD Department of Environmental Protection. Division of Solid Waste Services, October, 2018

The County's solid waste system-wide tonnage accounting tracks MSW generated in the County, independent of the location at which it is ultimately processed. The County has noted that waste generation is increasing both locally and nationally, and continues to monitor trends that may warrant revising their general assumptions for baseline per capita and per employee generation.

9 Conclusions

As part of this task, HDR staff visited County facilities and utilized information provided to HDR by staff, to make the following preliminary observations:

- Upgrades to the MRF, particularly for the commingled side, are required as the facility relies heavily on manual sorting of materials and the equipment is outdated and not replaceable.
- The Shady Grove Processing Facility and Transfer Station is a heavily used facility by both the public and commercial sector. The Transfer Station has very convenient hours, open seven days a week. The tipping floor is particularly busy and County staff have indicated some changes are planned to improve traffic flow. This facility collects a wide variety of divertible material, not typically seen at most transfer stations.
- Increasing residential density near the County's waste management facilities may pose an issue with increased competition for rail line use (for the intermodal containers), and increases in traffic, odor and noise complaints.
- The County relies on some Out-of-County disposal capacity for some materials. It appears that there is good capacity for management of waste (e.g. MSW, recycling etc.) at out-of-County facilities if

required. The County has already identified land for future waste processing/disposal as a contingency.

- While County staff have indicated there may be capacity at the Composting facility for management of some food waste, the restrictions on the capacity and material type that could be processed imposed by the community agreement means that a change in agreement would be required, and limiting the possibility for this site to be the main processing facility for a full-scale organics program.

The County provides a comprehensive suite of collection services to its residents, particularly in Sub-district A and owns a large number of waste management facilities. The County has an active outreach and education program as well as enforcement to ensure County residents and businesses are informed of the County's programs, services and regulations and participate as required. To this effect, the County has enacted a number of ordinances including mandatory recycling and a ban on the use and sale of expanded polystyrene (#6-PS) products such as Styrofoam™ products, including foam containers, bowls, plates, trays, cartons, cups, egg cartons etc. and polystyrene loose fill packaging (e.g. packing peanuts).

In conclusion, the Montgomery County is operating a successful waste management program, evidenced by the current recycling rates.