CHAPTER 4
SOLID WASTE MANAGEMENT NEEDS, FACILITY ASSESSMENTS and CONSTRAINTS

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

4.1 Municipal Solid Waste: Management Needs

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

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

4.1.1 Public Outreach and Education

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

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

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

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

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

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

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

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

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

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

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

Source: Recycling and Resource Management Division

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

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

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

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

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

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

4.1.2 Recycled Goods Procurement

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

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

4.1.3 Waste Reduction

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

Per Capita and Per Employee Waste Generation

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

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

Waste Reduction and Reuse Information and Programs

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

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

Waste Reduction Opportunities in County Government

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

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

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

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

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

Regional Waste Reduction Efforts

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

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

Waste Reduction Incentives

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

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

4.1.4 Recycling Achievement, Opportunity, and Direction

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

4.1.5 Calculation of MSW Recycling Rate and Waste Diversion Rate

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Table 4.2 Waste Recycling by Material Type: Achievement and Opportunity

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

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

4.1.6 Single-Family Residential Sector Recycling

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

Curbside Recycling Materials Timeline:

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

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

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

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

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

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

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

4.1.7 Multi-Family Residential Sector Recycling

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

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

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

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

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

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

4.1.8 Non-Residential Sector Recycling

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

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

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

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

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

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

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

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

4.1.9 Investigation of Compliance Issues and Enforcement of Recycling Regulations

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

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

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

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

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

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

Reducing Wasted Food

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

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

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

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

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

Channeling Edible Food to Others

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

In-Home, Backyard, and Community-Scale Composting

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

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

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

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

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

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

On-Site Institutional and On-Site Business Composting

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

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

The Commercial Food Scraps Recycling Partnership Program

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

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

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

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

On-Farm Composting

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

Composting Capacity to Serve Montgomery County

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

Strategies to Maximize Food Scraps Collection at the Curb

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

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

4.2 Special Waste Streams: Management Needs

4.2.1 Land Clearing and Demolition

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

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

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

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

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

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

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

4.2.2 Asbestos Disposal

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

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

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

4.2.3 Controlled Hazardous Substances

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

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

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

4.2.4 Hazardous Waste Emergency Response

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

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

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

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

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

4.2.5 Special Medical Waste

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

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

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

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

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

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

4.2.6 Animal Carcass Waste (Dead Animals)

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

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

4.2.7 Bulky Wastes

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

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

4.2.8 Automobiles

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

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

4.2.9 Vehicle Tires

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

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

4.2.10 Wastewater Treatment Biosolids

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

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

Needs Assessment and Plan Direction: The Piscataway Bioenergy facility was the result of the completion of a major facility planning study that explored and determined the best alternative in managing its future biosolids produced from all of the WSSC Water WRRFs within both Montgomery and Prince George's counties. The focus of this facility was to examine and develop a comprehensive program providing the best alternative to process biosolids in a manner that is environmentally beneficial and economically feasible. The selected alternative included the design

and construction of a central bio-energy project comprised of thermal hydrolysis, mesophilic anaerobic digestion, dewatering, and combined heat and power facilities. The project was commissioned in October 2024 and is currently undergoing process testing and verification for Class A biosolids production. The environmental and economic benefits include:

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

In recent years, most of the biosolids from WSSC Water's WRRFs have been re-used through land application on farmland in Virginia. Biosolids that are land-applied are subject to requirements of State-issued sewage sludge utilization permits and the nutrient management plans that set the application rates based on site-specific conditions. The locations of the permitted sites are determined by the contractor that manages the material. The procurement process requires that each bidder have the necessary permitted sites to manage the biosolids generated.

4.2.11 Septage

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

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

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

4.2.12 Other Wastes

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

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

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

4.3 Assessments of Constrains of Current Solid Waste Acceptance Facilities

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

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

- RRF
- MCYTCF

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

- Transfer Station
- MRF
- PPF

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

- Food Scraps Processing

Available in-County land to develop infrastructure:

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

4.3.1 Shady Grove Processing Facility and Transfer Station

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

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

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

4.3.2 Materials Recovery Facility (MRF)

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

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

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

4.3.3 Mixed Paper Processing Facility (PPF)

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

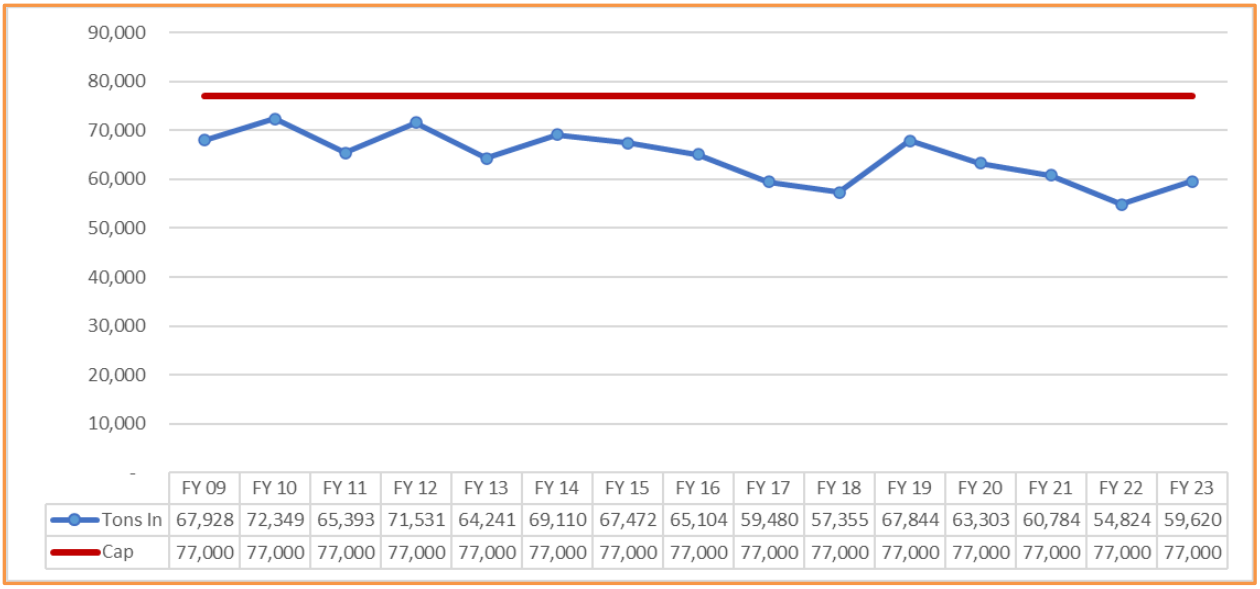
material storage as part of the paper processing upgrade when the new PPF was constructed in 2017. This facility is located on the MRF site.

4.3.4 Yard Trim Composting Facility

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

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

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



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

4.3.5 Resource Recovery Facility (RRF)

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

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

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

4.3.6 Land Reserved for Potential Future In-County Landfill

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

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

4.3.7 Composting Facilities Accepting Food Scraps in MD and VA

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

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

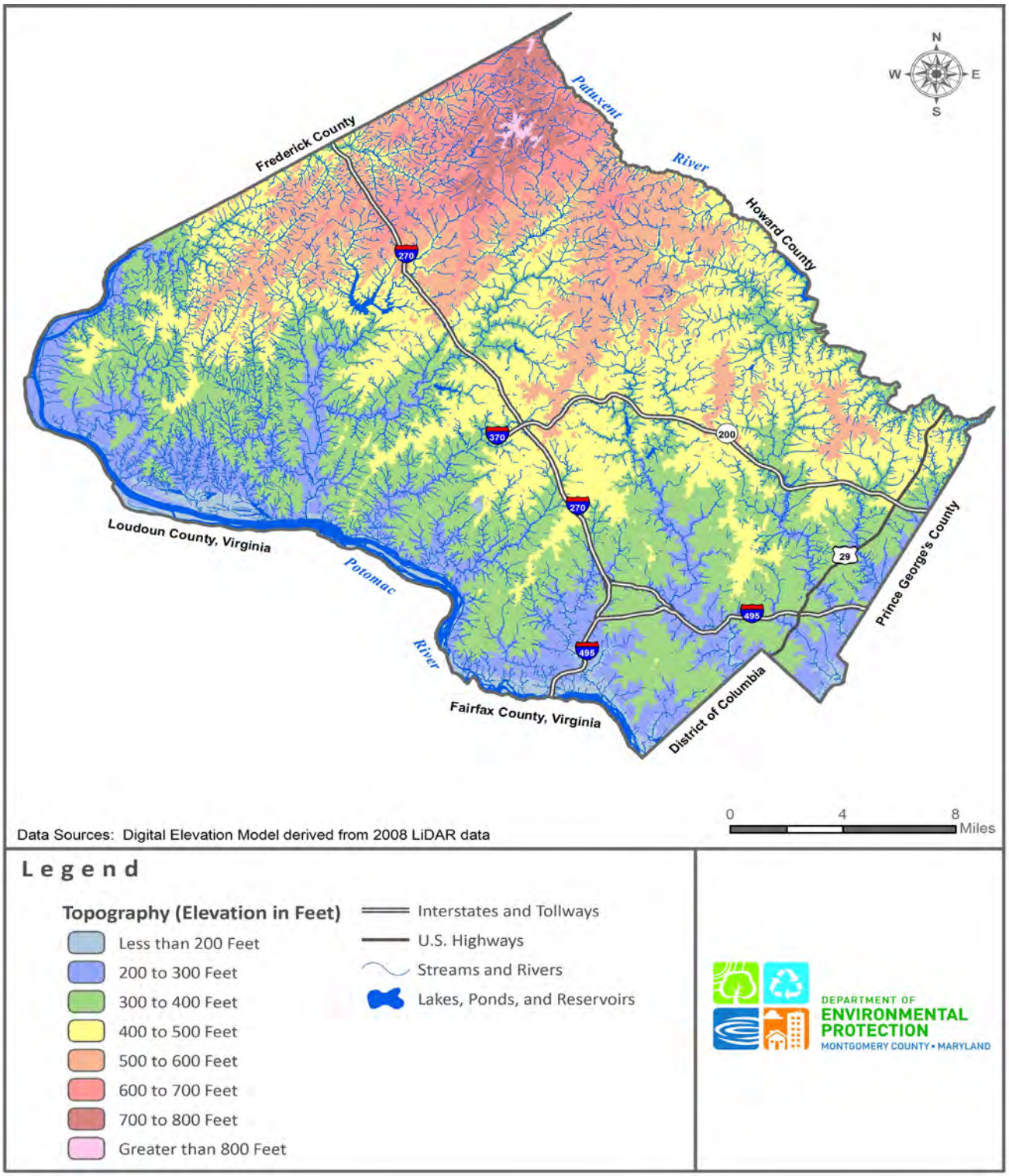
4.4 Constraints on New Solid Waste Acceptance Facilities

4.4.1 Physical Constraints on Waste Acceptance Facilities

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

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

Figure 4.2 County Topographic Map



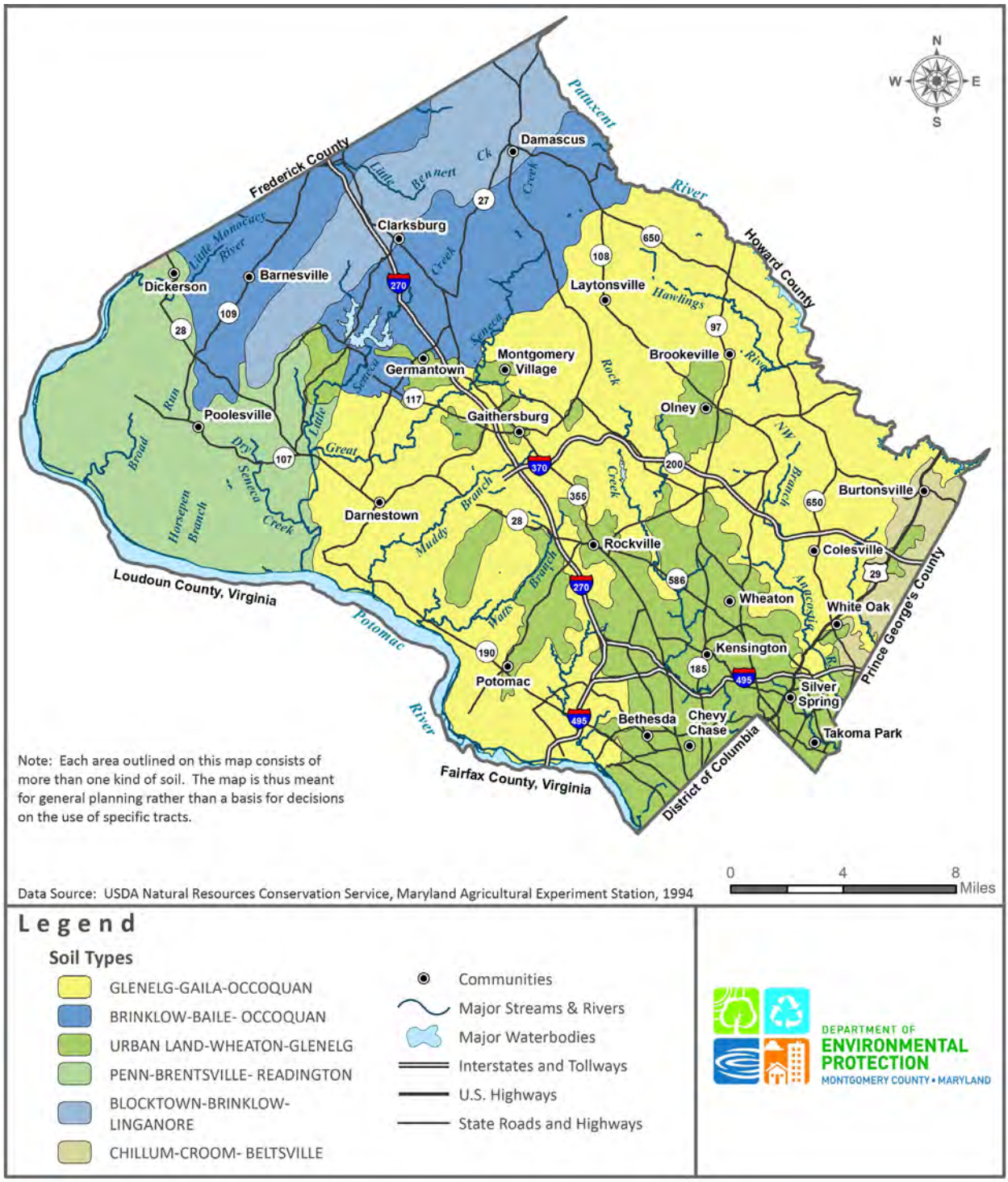
B. Soil Types – A general description of Montgomery County soil types/groups and the areas where these soil types can be found in **Table 4.3**, and the locations of these soil types appear in **Figure 4.3**.

Table 4.3 County Generalized Soils Descriptions

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

* Percent area of the County.
Source: https://www.montgomerycountymd.gov/DEP/Resources/Files/Water-Supply-Wastewater/water-sewer-plan/water-sewer-plan-chapter-2.pdf

Figure 4.3 County General Soil Map



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

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

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

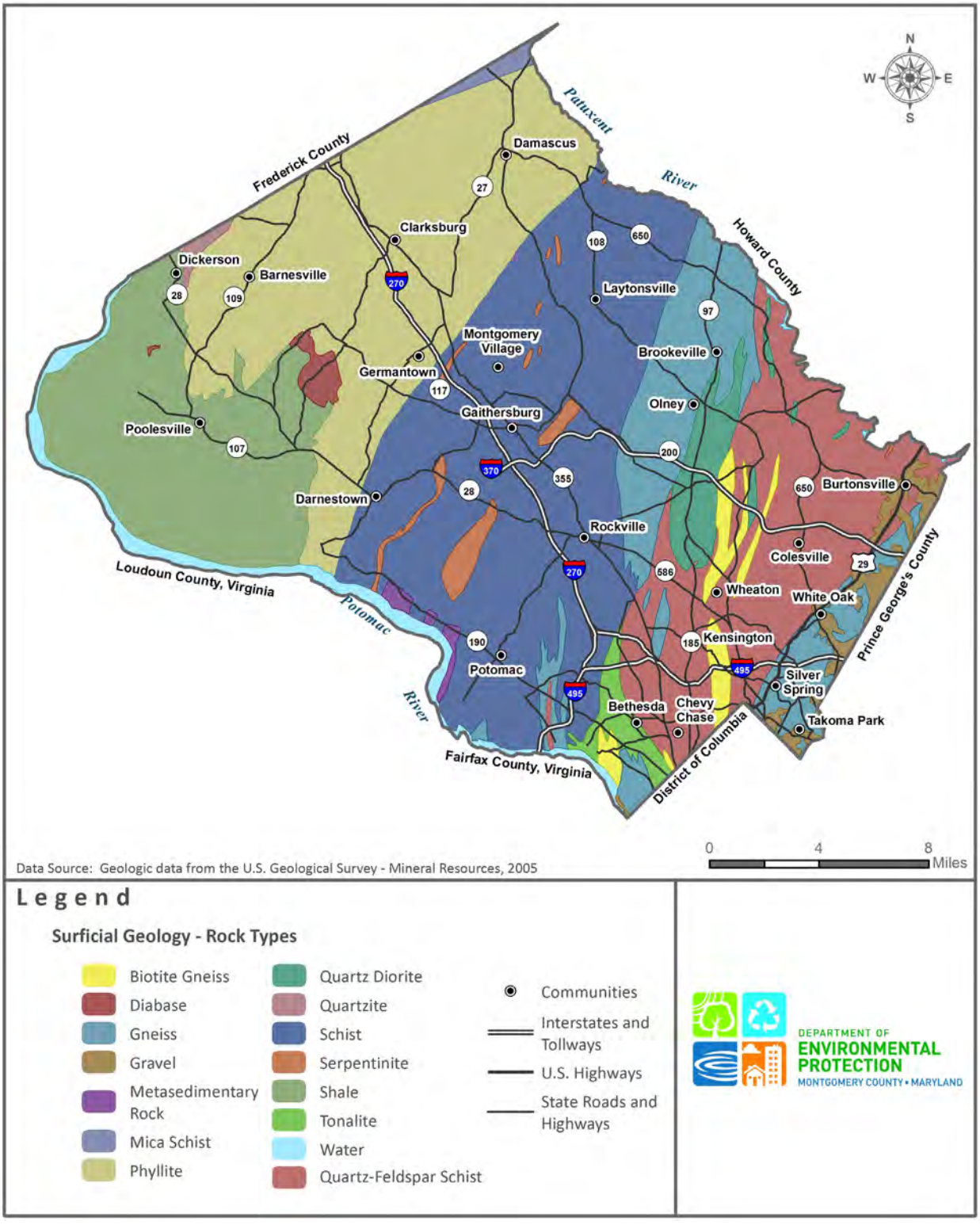
The general trend of the bedrock units across Montgomery County and the strike of the foliation and cleavage are northeast-southwest. Still, no particular lithology appears to have significantly controlled the topography.

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

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

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

Figure 4.4 County Geologic Conditions Map



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

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

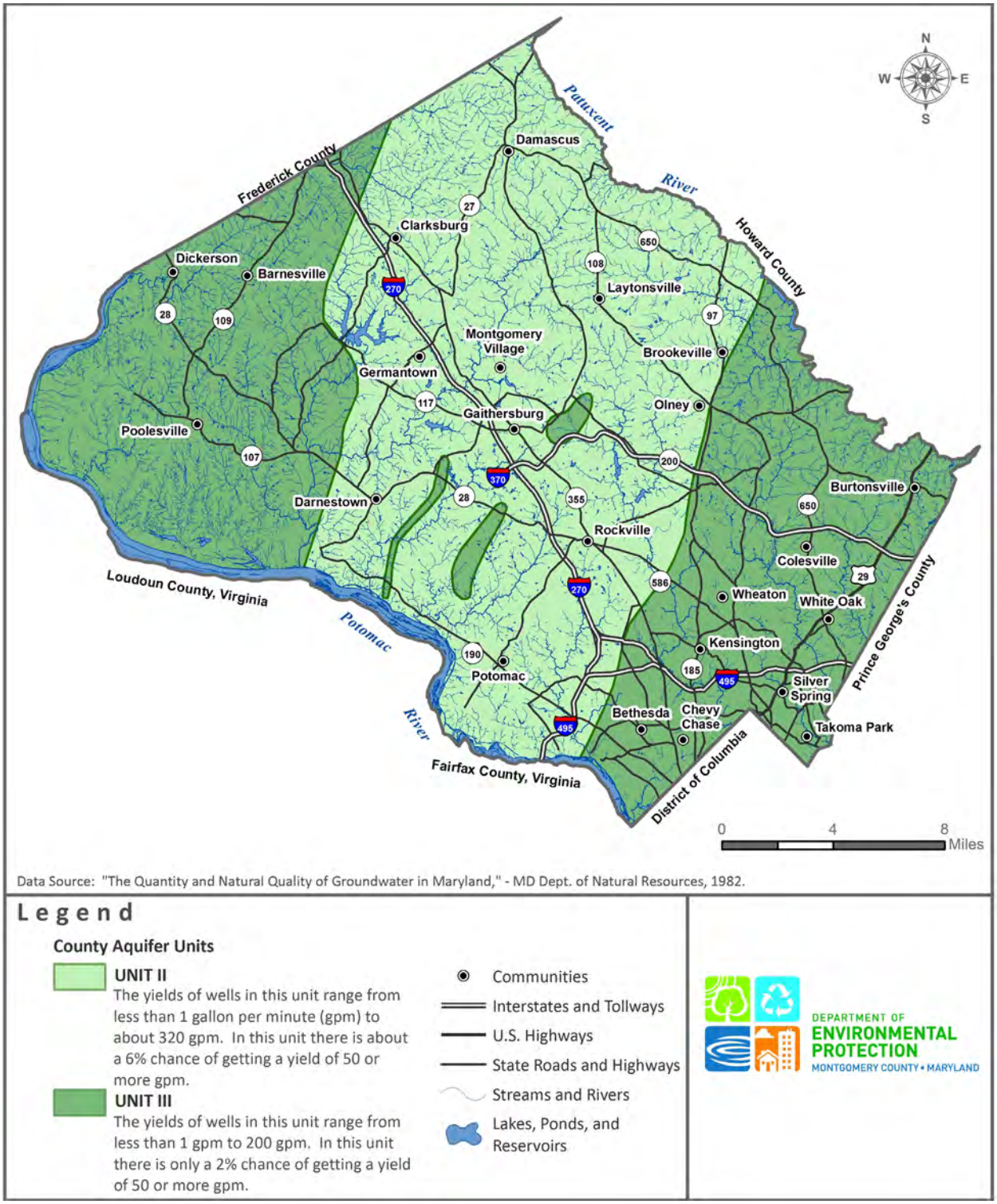
The average annual depth of the groundwater table in Montgomery County varies considerably from place to place, depending on the type of rock, the topographic situation, and the annual rainfall. At an observation well at Fairland, in the Wissahickon schist of the eastern part of the County, the average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

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

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

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

Figure 4.5 County Hydrogeologic Units Map



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

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

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

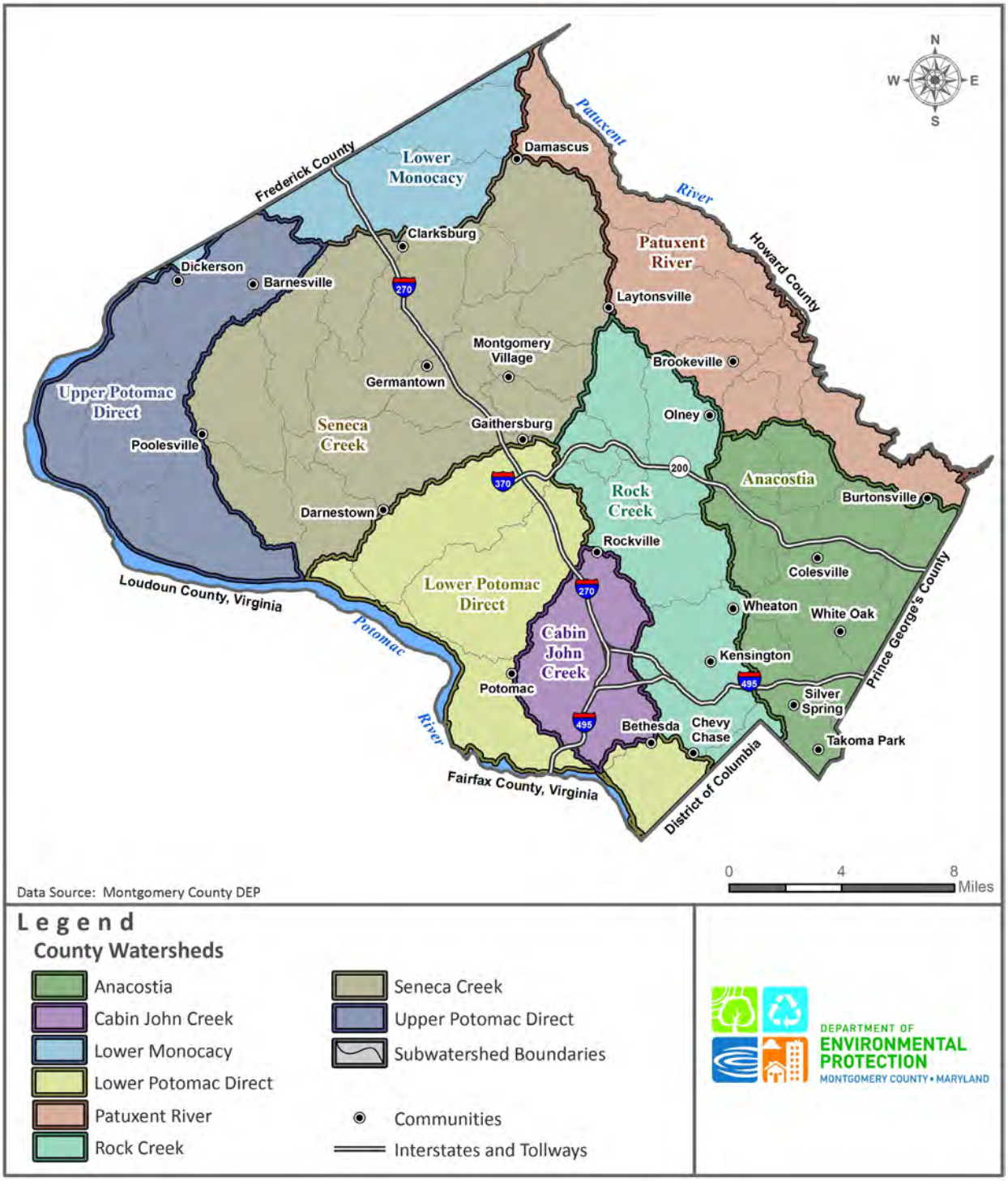
In 1989, the Maryland Department of Natural Resources (DNR) prepared Nontidal Wetland Guidance Maps that showed the relative locations of large nontidal wetlands in Montgomery County. However, as stated in the instructions for using these maps, exact wetland boundaries and locations must be field determined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

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

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

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

Figure 4.6 Surface Drainage Patterns Map



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

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

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

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

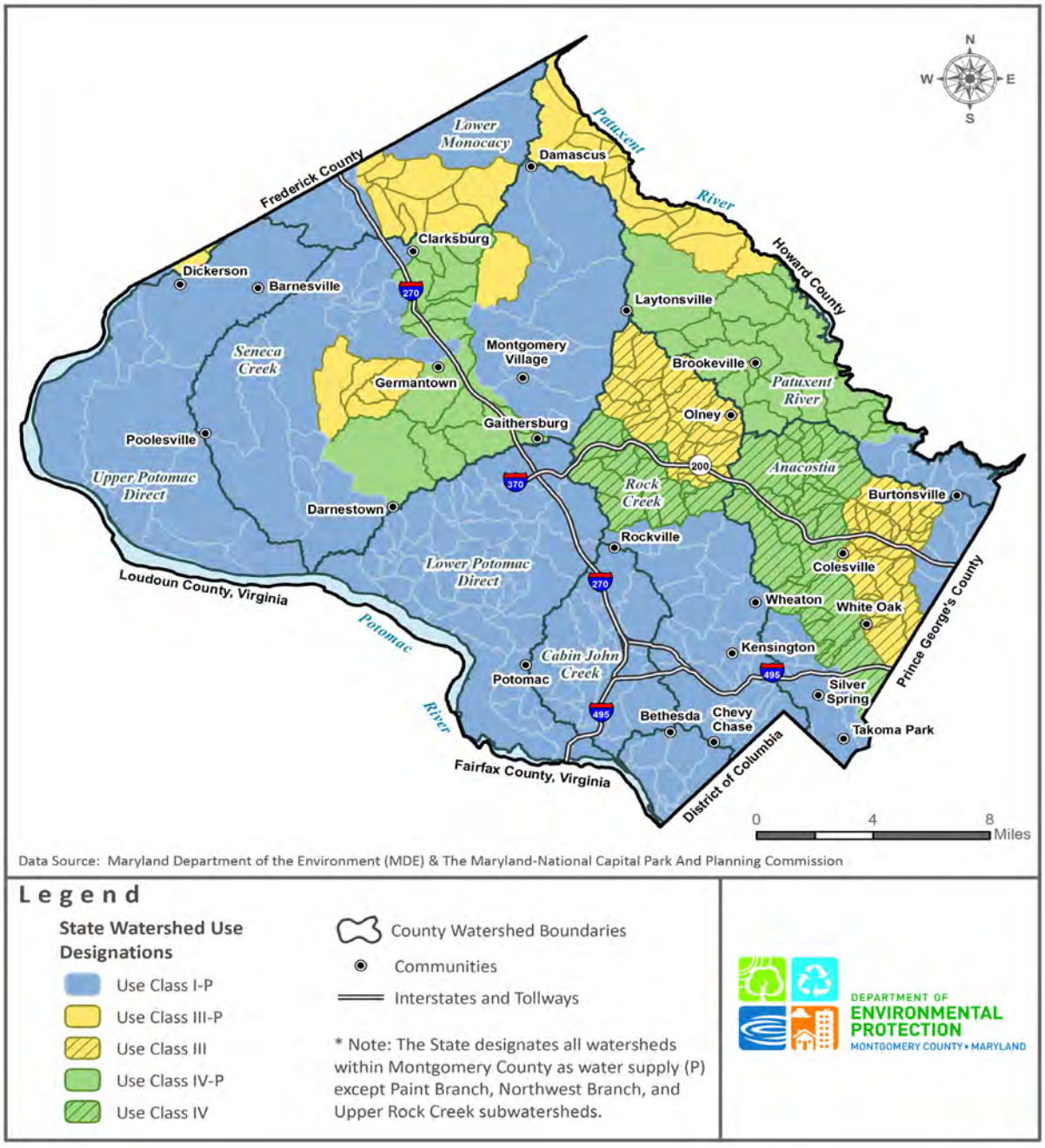
Use III-P. Natural trout waters and public water supply: Waters that include all uses identified for Use III waters are used as a public water supply.

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

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

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

Figure 4.7 County Surface Water Use Designations Map



4.4.2 Land Use Constraints

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

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

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

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

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

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

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

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

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