

T&E COMMITTEE #1
March 28, 2019

Update

MEMORANDUM

March 26, 2019

TO: Transportation, Infrastructure, Energy and Environment (T&E) Committee

FROM:  Keith Levchenko, Senior Legislative Analyst

SUBJECT: **Update:** Department of Environmental Protection (DEP) Solid Waste Issues¹

PURPOSE: To receive an update from DEP on various Solid Waste issues, including:

- Status of County Recycling Efforts and Market Conditions
- Gude Landfill Remediation Capital Project
- Solid Waste Master Plan/Aiming for Zero Waste Task Force
- Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery County

The following officials and staff are expected to participate in this briefing:

- Adam Ortiz, Director, Department of Environmental Protection (DEP)
- Patty Bubar, Deputy Director, DEP
- Willie Wainer, Chief, Division of Solid Waste Services (DSWS), DEP
- Trevor Lobaugh, Office of Management and Budget

Attachments include:

- Washington Post Article (January 21, 2019) “A move by China puts U.S. small-town recycling programs in the dumps” (©1-2)
- Gude Landfill Remediation Project Description Form (©3-4)
- “Aiming for Zero Waste” Plan Community Meeting Poster Boards (©5-17)
- Executive Summary of the “Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery County, Maryland” (©18-27)

¹ Key words: #EnvironmentalProtection, Stormwater, Gude Landfill, Solid Waste Master Plan, Food Waste, Climate Change.

On March 28, the T&E Committee will receive an update from DEP on several issues. Presentation slides from DEP will be available at the meeting. Council Staff has provided some background information on each issue below.

Status of County Recycling Efforts and Market Conditions

In October 2012, the Council approved Executive Regulation 7-12, which created a new recycling rate methodology (consistent with how the State of Maryland calculates recycling and waste diversion rates) and a new recycling/diversion goal for the County of 70 percent by 2020.

The table below shows fiscal year recycling rates by sector from FY16 actuals through FY25 projections based on information received from DSWS.

County Recycling Rate						
Category * (FY18 Actual % of waste generated)	Actual			Projected		
	FY16	FY17	FY18	FY19	FY20	FY25
Single Family Recycling (34.8% of total)	62.6%	61.4%	62.9%	63.1%	63.3%	64.6%
Multi-Family (10.1% of total)	27.9%	26.9%	29.3%	29.6%	30.3%	31.7%
Non-Residential (55.2% of total)	55.6%	54.6%	56.9%	57.9%	58.5%	60.4%
Total % of Municipal Solid Waste (MSW) Recycled*	55.9%	54.7%	56.6%	56.8%	57.2%	58.8%
State Waste Diversion Rate**	60.9%	59.7%	61.6%	61.8%	62.2%	63.8%

*Includes ash used for landfill cover. This adds about 13% to 14% to the recycling rate.

** Includes a source reduction credit of 5 percent.

The Division of Solid Waste Services (DSWS) estimates that, under current strategies plus the phasing in of a commercial food waste program beginning in FY21, the diversion rate (including ash and the source reduction credit) will rise to 63.8 percent by FY25. The diversion rate for FY18 was 61.6 percent. While the projections fall short of the 70 percent by 2020 goal, it should be kept in mind that the potential impact of a comprehensive food waste diversion program for the residential sector is not assumed in these numbers, nor are any other initiatives that may come out of the current master planning effort under way (see later discussion).

As with many other recycling programs in the United States, the County has experienced substantial changes to recycling markets over the past few years that have greatly affected the receiving capacity for recyclables (especially plastics and mixed paper), driving down the market prices for these materials. Two years ago, China announced that it would stop importing many types of foreign waste and it also greatly tightened its standards for contamination in recycled materials it would accept. Some jurisdictions in the United States stopped recycling certain materials (see ©1-2). In Montgomery County, all materials currently accepted for recycling are still being recycled. However, the County has experienced reduced revenue because of these market conditions.

Gude Landfill Remediation

The Gude Landfill site encompasses 162 acres, of which approximately 140 acres was used for waste disposal. The landfill operated from 1964 to 1982. DEP has been involved for many years with various post-closure activities. In 2008, the Maryland Department of the Environment

(MDE) directed DEP to investigate groundwater contamination. The County and MDE entered into a consent order in May 2013 involving landfill assessment and remediation.

The County completed a Waste Delineation and Nature and Extent study (2010), an Assessment of Corrective Measures (ACM) report (2014 and revised in 2016), and continued sampling and other tests. This work was done in coordination with MDE. Ultimately, DEP recommended and MDE concurred on a “toupee cap” solution. A capital project was later approved in May 2017 as an amendment to the FY17-22 CIP.

The current project (project description form attached on ©3-4) totals \$28.7 million and includes the remediation work, as well as planning efforts for the future reuse of the site.² The project is currently in design. DEP is working closely with the Gude Landfill Concerned Citizens (GLCC) group as well as current and potential users of the site on the planned reuse of the property. Because of the continued settling of the landfill site, initial reuse options being explored for the site are:

- *Passive Recreational – Natural Vegetation and Habitat, Community Garden Plots or Greenhouses, Dog Park, Model Airplane Area, Walking/Hiking/Biking Trail System, and Playground Areas and Fields;*
- *Renewable Energy – Solar Panel Array; and*
- *Operational – Emergency Debris Storage and Staging, as well as the relocation of Yard Waste Processing (leaves, grasses, branches, logs, trunks, etc.) and DOT Material Processing (soil, concrete, asphalt) operations from the Shady Grove Processing Facility and Transfer Station; and DOT salt storage operations from other sites within the County.*

While not related to the remediation project itself, DEP recently completed some improvements to the landfill gas flaring system after experiencing some problems with the existing system. DEP will be available to answer questions from the Committee on this effort as well.

Solid Waste Master Plan/Aiming for Zero Waste Task Force

In May of 2018, the County, in partnership with the Northeast Maryland Waste Disposal Authority, engaged a consultant (HDR) to assist DEP in a comprehensive master planning process for the County’s solid waste management system. This effort is expected to conclude by the end of 2019.

Aiming for Zero Waste³ Task Force

On May 30, 2018, the Executive announced the creation of a task force to assist DEP and the Consultant in this effort. The Executive specifically asked the Task Force to:

² The County’s “Gude Landfill” webpage at: <https://www.montgomerycountymd.gov/sws/facilities/gude/> includes additional information and resources on this project.

³ The County’s “Aiming for Zero Waste” webpage at: <https://www.montgomerycountymd.gov/SWS/master-plan.html> includes additional information and resources on the master planning effort.

“provide advice and guidance on how best to maximize waste reduction, reuse, recycling, and sustainable management of all materials across the entire integrated waste management system, including all programs, facilities, operations, initiatives, and services.”

Status

The Task Force has been meeting regularly to discuss major solid waste management issues and to review and comment on draft reports prepared by the consultant on various tasks identified in the contract. The tasks include: a current state assessment; benchmarking and best practices; a stakeholder, citizen, and expert engagement plan; a review of potential improvements to the current diversion/recycling system; a review of existing facilities; and a development of options for the collection and disposal of “what’s left.” Copies of informational poster boards used at community meetings are attached on ©5-17.

The Executive recently expressed interest in closing the Dickerson Resource Recovery Facility (RRF) once waste volumes could be reduced enough to result in no net increase in out-of-County landfilling. The County currently hauls non-processible waste and ash generated at the RRF to landfills outside the County. In FY18, the County processed about 1.1 million tons of municipal solid waste (MSW). Of this amount, the RRF burned 509,267 tons of MSW and produced about 186,000 tons of ash. The County would need to recycle/divert the difference (322,917 tons) to meet the Executive’s goal of no net increase in waste to landfills. This would require an increase in the County’s recycling rate up to 71.6 percent (and a diversion rate of 76.6 percent.). The County’s FY18 recycling rate (without ash) was 41.9 percent. The diversion rate (without ash) was 46.9 percent.⁴

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

Food waste is the largest non-banned material type currently in the waste stream, and a comprehensive program that diverts food waste would provide the single biggest increment the County can capture to meet or exceed its waste diversion goal of 70% by 2020. The County generated approximately 130,000 tons of food waste in 2017.

The County has an ongoing food waste composting pilot (focusing on County Government facilities) that has been in place for several years. This effort has helped the County better understand food waste diversion challenges (both on-site capture and storage and securing receiving facilities for the food waste). Through September 2018, a total of 142.1 tons of pre-consumer food scraps had been collected and recycled.

On November 15, 2016, the Council enacted Bill 28-16 “Solid Waste (Trash) - Strategic Plan to Advance Composting, Compost Use and Food Waste Diversion”. This bill required DEP

⁴NOTE: The diversion rate includes the State source reduction credit of 5%.

to develop a strategic plan to advance composting, compost use, and food waste diversion in Montgomery County.

On April 12, 2017, the Executive transmitted the Strategic Plan to Advance Composting, Compost Use, and Food Scraps Diversion in Montgomery County, Maryland.⁵ The Executive Summary of the Strategic Plan is attached on ©18-27. The Strategic Plan was a culmination of a substantial amount of coordination, outreach, and work group activity during 2017 and into 2018. The T&E Committee received a briefing from Executive Branch staff on the Plan on July 12, 2018.

As part of the FY19 Budget, the Council approved the Executive's recommendation to add \$564,000 and one full-time position in FY19 for the creation of a Food Waste Organics Recycling program. FY18 Costs associated with the strategic planning work have also been moved to this program for a total program budget in FY19 of \$667,000. This includes both a commercial and residential organics education and outreach initiative and follow-up work identified in the Strategic Plan.

Attachments

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⁵ The full Strategic Plan to Advance Composting document and background on the development of the Plan is available at: <https://www.montgomerycountymd.gov/sws/foodwaste/index.html>.

A move by China puts U.S. small-town recycling programs in the dumps

By Rebecca Beitsch

January 21

Big cities have shielded their residents from the impact of China's decision last year to curtail the solid waste it will accept from other countries. But rural and small-town residents are starting to get squeezed by a change that is wreaking havoc on the global recycling market.

Hannibal, Mo., population 18,000, has stopped accepting recyclable plastics labeled with the numbers 3, 4, 5, 6 or 7, such as yogurt containers and shampoo bottles. Villages near Erie, Pa., no longer take glass. And in Columbia County, N.Y., nestled in the Hudson Valley, residents soon will have to pay \$50 a year to dump their materials at one of the county's recycling centers.

China, for decades the world's largest importer of waste paper, used plastic and scrap metal, last year stopped accepting certain kinds of recyclables and tightened its standards for impurities in scrap bales. In making the changes, China's Ministry of Ecology and Environment cited environmental damage caused by "dirty wastes or even hazardous wastes" mixed in with solid waste that can be recycled into raw materials.

Many Americans now have access to single-stream recycling, which spares them the trouble of sorting and separating plastics, paper, glass and metal. But single-stream recycling has created headaches for Chinese processors. Even after sorting at a U.S. recycling facility, a plastic container might make it into a shipment of tin cans. Glass breaks, and shards are mixed in with pieces of paper.

The industry standard for contamination typically ranges between 1 percent and 5 percent. Under the new policy, China's standard is 0.5 percent.

"They didn't just change the policies, they radically changed the entire world market in one fell swoop," said Joe Greer, director of sales for Buffalo Recycling Enterprises, which accepts recyclables from a number of small towns along Lake Erie.

Recyclers have stockpiled certain materials while they look for buyers. Some types of scraps have declined in value, while others have become worthless. Many large cities have just absorbed the losses, fearing that passing on the cost to residents would discourage recycling.

Small towns cannot bear that financial burden.

Instead, they've had to scale back the types of recyclables they accept or have started charging fees to cover the ballooning costs of their programs. The result is a growing disparity between the recycling services available to city dwellers and those for rural and small-town residents.

"Rural communities have this challenge of very small volume, and the cost of collecting and transporting something of very low value in the market is going to exceed that value," said Susan Robinson, senior policy director with Houston-based Waste Management, the largest waste collection company in North America.

Small-town recycling programs already are more expensive than those in bigger cities. Houses tend to be farther apart, making collection more expensive. Rural communities spend more to transport their recyclables to centers that can find markets. And they cannot produce the volume of material that buyers want.

Hannibal, like many small towns, never made much money from lower-quality plastics, such as Nos. 3 through 7. Those containers are composed of a blend of plastics and other materials that don't break down easily. And buyers tend to want truckloads of the stuff — more than a place such as Hannibal can provide.

Since China tightened its policies, the town simply cannot afford to accept those plastics. While 2 Rivers Industries, Hannibal's recycler, used to make a profit of about \$30 a ton on those plastics, it now must pay \$60 to \$70 a ton just to send them to processors.

Melonie Nevels, executive director of 2 Rivers Industries, said it has stored 40 tons of low-grade plastics. To avoid the cost of transporting the plastic to a landfill, she is trying to sell it to a company that will burn it for fuel.

Some Chinese companies are expanding into the United States to create more capacity to process recycled goods. Several recycling experts said that as the domestic market for scraps develops, the recycling industry should stabilize. But small towns will remain vulnerable to jolts along the way. 1

“In small cities, they have smaller budgets and they just pay closer attention in a lot of senses to what their costs are,” said Mathias Harter, general manager of Green Circle Recycling and a former mayor of La Crosse, Wis. The town no longer accepts plastic Nos. 3, 6 and 7.

“They don’t have as much to work with for resources,” Harter said. “They don’t have as great of economies of scale. You often see they are the ones paying very close attention to fine lines and expenses.”

Towns in Erie County, Pa., have had to cut back on accepting glass, some plastics and even some paper. Brittany Prischak, the county’s environmental sustainability coordinator, said she fears the new limits will make it much harder for recycling to survive in small-town Pennsylvania, despite the requirement under state law that communities with more than 10,000 residents have programs.

Columbia County in New York exhausted its annual recycling budget over the summer. Beginning this year, the county will charge residents \$50 for a permit to drop recyclables off at one of its recycling centers.

Jolene Race, director of Columbia County Solid Waste Department, said she believes bigger cities soon will have to make similar decisions — “unless you have a huge tax base where they just don’t care. But smaller counties don’t and they have to pass [the cost] on.”

To be sure, some larger cities also have been affected by the shift in the industry. Sacramento, for example, briefly had to stop accepting lower-quality plastics. But it was able to begin collecting them again once Waste Management found a buyer.

Joseph Pickard, chief economist and director of commodities for the Institute of Scrap Recycling Industries, said new markets may open for various materials and technological advances could improve sorting.

“If there’s buy-in from the community that recycling is something they’re going to put weight and value on and they’re willing to pay for, then that gives municipalities more leeway in what they will accept,” Pickard said.

But Prischak said there is little doubt that the current turbulence is widening “a rural-urban divide” when it comes to recycling opportunities for residents.

“Before the changes even started to happen, you could see the difference of where recycling was most convenient in urban areas versus where it’s difficult like rural areas to recycle even if they want to recycle,” she said.

Beitsch is a reporter for Stateline, an initiative of the Pew Charitable Trusts.



Gude Landfill Remediation (P801801)

Category	Solid Waste-Sanitation	Date Last Modified	02/21/18
SubCategory	Solid Waste Management	Administering Agency	Environmental Protection
Planning Area	Upper Rock Creek Watershed	Status	Ongoing

EXPENDITURE SCHEDULE (\$000s)

Cost Elements	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Planning, Design and Supervision	1,900	-	500	1,400	500	400	300	200	-	-	-
Site Improvements and Utilities	500	-	500	-	-	-	-	-	-	-	-
Construction	26,300	-	-	26,300	-	8,000	12,000	6,300	-	-	-
TOTAL EXPENDITURES	28,700	-	1,000	27,700	500	8,400	12,300	6,500	-	-	-

FUNDING SCHEDULE (\$000s)

Funding Source	Total	Thru FY17	Est FY18	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24	Beyond 6 Years
Current Revenue: Solid Waste Disposal	28,700	-	1,000	27,700	500	8,400	12,300	6,500	-	-	-
TOTAL FUNDING SOURCES	28,700	-	1,000	27,700	500	8,400	12,300	6,500	-	-	-

OPERATING BUDGET IMPACT (\$000s)

Impact Type	Total 6 Years	FY 19	FY 20	FY 21	FY 22	FY 23	FY 24
Maintenance	125	-	-	-	25	50	50
NET IMPACT	125	-	-	-	25	50	50

APPROPRIATION AND EXPENDITURE DATA (\$000s)

Appropriation FY 19 Request	500	Year First Appropriation	FY18
Appropriation FY 20 Request	8,400	Last FY's Cost Estimate	28,700
Cumulative Appropriation	1,000		
Expenditure / Encumbrances	-		
Unencumbered Balance	1,000		

PROJECT DESCRIPTION

This project provides for the remediation of low-level environmental contamination at the Gude Landfill. The Maryland Department of the Environment (MDE) approved an Assessment of Corrective Measures (ACM) report for Gude Landfill in July 2016 which specifically outlines the approved remediation method. Remediation of the Gude Landfill will include toupee capping (regrading and capping the top of the landfill and selected slope areas with a synthetic liner and two feet of soil) and increased gas collection through the installation of additional gas extraction wells. These remediation measures will reduce infiltration of rainwater into the landfill

resulting in the generation of less leachate, fewer leachate seeps, and better control of landfill gas migration.

LOCATION

600 E. Gude Drive, Rockville, MD

ESTIMATED SCHEDULE

The Gude Landfill Remediation project construction will begin in FY20 and be completed in FY22.

PROJECT JUSTIFICATION

The County and MDE entered a consent order in May 2013 which outlined requirements for assessing low-level groundwater contamination, gas migration, and other problems at the Gude Landfill. The Consent Order included provisions requiring a Work Plan and schedule to be established for assessing potential risks to human health and the environment, and development of an Assessment of Corrective Measures (ACM) report and implementation schedule. After consultation with industry experts, community groups, MDE, and County government leadership, the Department of Environmental Protection's (DEP) initial proposal to MDE in 2014 addressed the low-level groundwater contamination at the site with installation of bioremediation wells on the property. MDE's assessment of this bioremediation corrective measure in April 2015 determined that additional corrective measures would need to be included in the bioremediation approach to address all MDE's requirements. A revised ACM report was submitted to MDE in April 2016 addressing all MDE's comments and selecting corrective measures consisting of a toupee cap, additional landfill gas collection, and stormwater drainage improvements. The County has been mandated to perform work outlined in the consent order. Moving forward with the remediation of Gude Landfill, as required by MDE, will also address concerns raised by the adjacent community and allow planning for potential future uses of the property.

COORDINATION

Maryland Department of the Environment (MDE), Department of Permitting Services, the Maryland-National Capital Park and Planning Commission, the U.S. Army Corps of Engineers, the Gude Landfill Concerned Citizens (GLCC), County social service agencies, and adjacent property owners.



Aiming for Zero Waste
 A Vision for Sustainable Materials
 Management in Montgomery County



INTRODUCTION

Developing the Aiming for Zero Waste plan

A Vision for Sustainable Materials Management in Montgomery County

The Aiming for Zero Waste plan will strategically evaluate the County's programs and facilities to guide the County's actions and investments over the next 20-plus years.

What is the purpose of the plan?

The Plan will address and evaluate the current programs and facilities to update waste diversion goals, maximize waste reduction, reuse, and recycling, develop strategies to reach the new goals, and evaluate current facilities and operations.

In 2016 the County achieved:

55% Recycling rate

60% Waste diversion rate
 (Includes earned 5% source reduction credit)

County goal
70%
 Diversion
 by 2020





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DID YOU KNOW?

About the County



Population
1,039,040



Employees
544,558



Languages spoken
39



Area
495 square miles

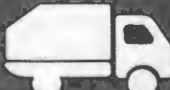
Award Winning Systems and Facilities



- 2015 - Gold Award for Integrated Solid Waste Management Systems Excellence - Solid Waste Association of North America (SWANA)
- 2014 - Silver Award for Excellence in Composting - SWANA
- 2014 - US EPA Clear Air Technology Excellence Award for the RRF
- Award Winning Solid Waste Management System

County-provided services

- Curbside collection of trash, scrap metal, recyclables, yard trim, and bulk trash from single family homes and multi-family homes with six units or less
- Public drop-off for materials recycling and disposal
- Materials processing and disposal
- Education, outreach and technical assistance

Subdistrict A (Trash and Dual stream recycling)	Subdistrict B (Dual stream recycling only)
92,000 Households	125,000 Households
 105 trucks and 500 routes every day	



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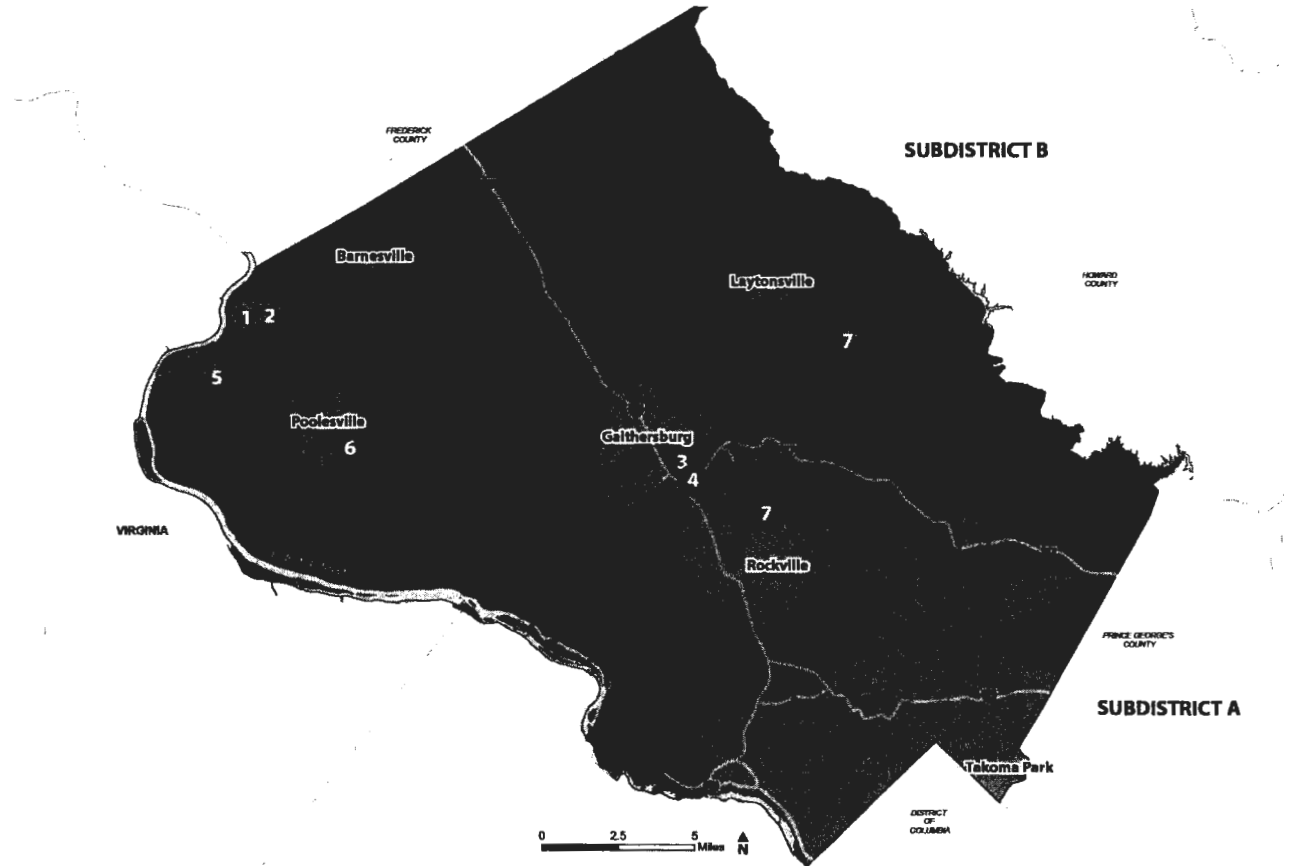
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COUNTY MATERIALS MANAGEMENT SYSTEM

County Materials Management Facilities and Service Areas

- ① Resource Recovery Facility
- ② Yard Trim Compost Facility
- ③ Shady Grove Processing Facility and Transfer Station
- ④ Recycling Center
- ⑤ Site 2 landfill
- ⑥ Poolesville Beauty Spot
- ⑦ Closed landfill

-  Subdistrict A - County provided recycling, yard trim, scrap metal and trash collection service
-  Subdistrict B - County provided recycling, yard trim and scrap metal collection service
-  Other municipal collection areas





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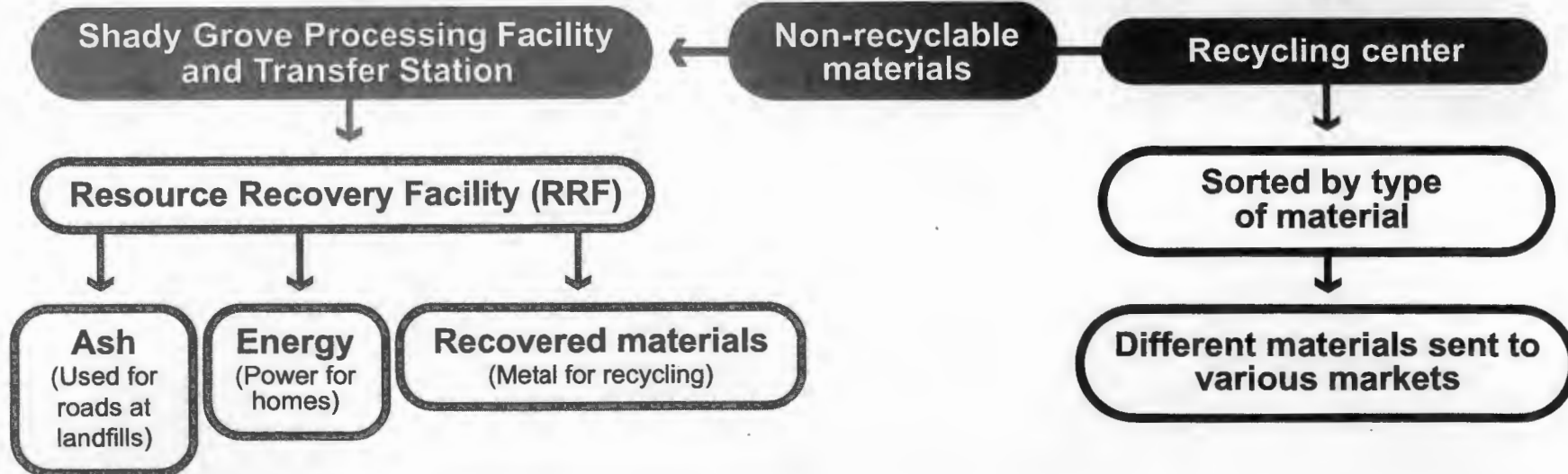
WHERE DOES YOUR TRASH AND RECYCLING GO?



Trash



Recycling





PLAN DEVELOPMENT

WHERE ARE WE?

JUNE 2010 - PRESENT

- Current state assessment
- Benchmarking and best practices

- Improvements to current system
- Prepare draft planning document

- Review existing materials processing facilities
- How to manage what's left

- Conduct an assessment of Montgomery County's existing solid waste management system
- Compare Montgomery County with the following jurisdictions:
 - Austin, TX
 - Toronto, Canada
 - King County, WA
 - San Francisco, CA
 - Minneapolis, MN
- Gather feedback on future system (public comment opportunity)
- Identify and research additional options for waste reduction, reuse, recycling and recovery
- Identify improvements to the current system
- Develop draft plan (public comment opportunity)
- Review of existing materials processing facilities
- Identify options for managing what's left
- Develop final plan (public comment opportunity)



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**Source
Reduction**



Reuse



Recycling



**Regulatory /
Others**



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EXAMPLES OF SOURCE REDUCTION OPTIONS USED IN OTHER JURISDICTIONS



Reducing waste from the beginning.

Reducing the amount of waste generated eliminates the need to manage these materials.

- **Reduce wasted food at home, schools, restaurants, supermarkets, etc.**
(e.g. EPA's "Food too good to waste", food donations, on-farm composting, etc.)
- **A standard-sized trash container**
(e.g. all residents use the same size trash container, size may depend on types of diversion programs)
- **A Pay-as-You-Throw (PAYT) program**
(e.g. you pay for the amount of trash you set out at the curb for collection, could use special bags, or different sized containers)
- **Clear bags for trash**
Clear bags help collectors identify materials that are banned from disposal (e.g. recycling)
- **Reduce trash collection frequency**
(e.g. every other week trash collection, or some other less frequent schedule)
- **Put limits on the amount of trash collected**
(e.g. reduce the number of trash containers collected, or the number of bulk trash pickups)



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EXAMPLES OF REUSE OPTIONS USED IN OTHER JURISDICTIONS



One man's trash is another
man's treasure.

Finding a new purpose and another
use for used items can keep waste
out of disposal facilities.

- **Reuse centers**
(e.g. small household goods, furniture, toys)
- **Waste exchange**
(e.g. develop centers for exchange of arts and crafts supplies, school and office supplies, sports equipment)
- **Reuse events**
(e.g. support curbside giveaway events, swap events etc. through promotion)
- **Sharing libraries**
(e.g. support organizations or develop partnerships for sharing libraries for kitchen appliances, musical instruments, sports equipment, party supplies etc.)
- **Fix-it / repair clinics**
(e.g. clothes, small appliances, bikes)
- **Construction and Demolition (C&D) drop-offs for reuse**
(e.g. windows, doors)

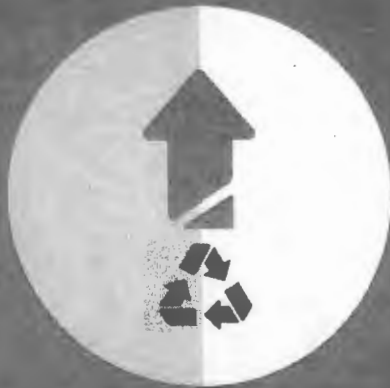


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EXAMPLES OF RECYCLING OPTIONS USED IN OTHER JURISDICTIONS



Recycling takes used materials and processes them into something new.

- **Food scrap collection and processing**
- **Change in collection methods**
(e.g. bottles/cans/paper collected in one container, manual vs automated collection of materials)
- **Resident / business / small hauler drop-off / recycling centers**
- **Collection of other materials for recycling**
(e.g. textiles, mattresses, ceramics, carpet, C&D materials)



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EXAMPLES OF LOCAL REGULATORY/POLICY OPTIONS USED IN OTHER JURISDICTIONS



Regulations and policies will help the County move towards a circular economy.

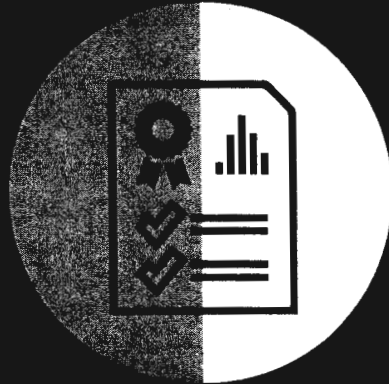
- Bans on single-use materials used in retail
- Ban on food disposal for certain businesses generating certain amounts of food scraps
- Mandatory participation in organics recycling
- Requirements for C&D recycling for certain types of construction / renovation projects
- Programs to develop local / regional material markets to support recycling processors and sustainable materials management



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EXAMPLES OF STATE REGULATORY/POLICY OPTIONS USED IN OTHER JURISDICTIONS



Regulations and policies will help the County move towards a circular economy.

- **Extended Producer Responsibility laws that mandate companies to manufacture sustainable product / package design, takeback of their materials at retail locations or provide funding for recycling**
- **Laws that would mandate consumers to support recycling infrastructure through product stewardship laws**
(e.g. a fee at retail to fund an item's end of life, such as paint, electronics)
- **Laws that mandate manufacturers to take back their products at the end of their life**
- **Encourage take back of packaging materials and use of more efficient / sustainable packing practices**
(e.g. Blue Apron, Amazon, HelloFresh)



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OTHER OPTIONS



Be part of the solution,
not the pollution.

- **Targeted additional educational campaigns for certain sectors / materials**
(e.g. food waste in schools, electronics recycling)
- **Consideration of expansion of County collection services**
(e.g. provide trash collection to all single family homes in the County to ensure a consistent level of service and programs, provide collection of materials to multi-family homes and/or small businesses in the County)
- **More anti-litter / recycling / trash containers in public places**
- **Consideration of economic incentives to encourage waste reduction and recycling**
(e.g. excess trash fees, grants for businesses to purchase supplies for setting up composting programs)
- **Additional support for small businesses through cooperative collection programs**
(e.g. involving shared containers and service agreements to save space, make collection more efficient and reduce costs)



Aiming for Zero Waste
A Vision for Sustainable Materials
Management in Montgomery County



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Website: <https://montgomerycountymd.gov/SWS/master-plan.html>



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We're interested in your feedback, please fill out a comment card with your ideas and take our survey here on one of our ipads.



**Montgomery County, Maryland
Department of Environmental Protection
Division of Solid Waste Services**



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



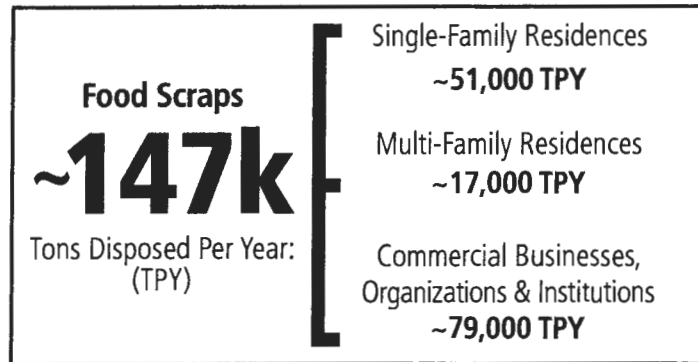
April 2018

**Montgomery County, Maryland
Department of Environmental Protection, Division of Solid Waste Services**

Executive Summary

Montgomery County, Maryland has been a leader in recycling for over 30 years and continues to expand its waste reduction and recycling programs. The County continually strives towards its established goal to reduce waste and recycle 70% of all waste generated in the County by 2020. In calendar year (CY) 2015, Montgomery County’s waste diversion rate was 61%, one of the highest in the United States (U.S.). As the chart below displays, food waste (referred to as food scraps) represent a significant portion of the County’s solid waste disposed, and presents a significant opportunity to reduce, reuse, and recycle more.

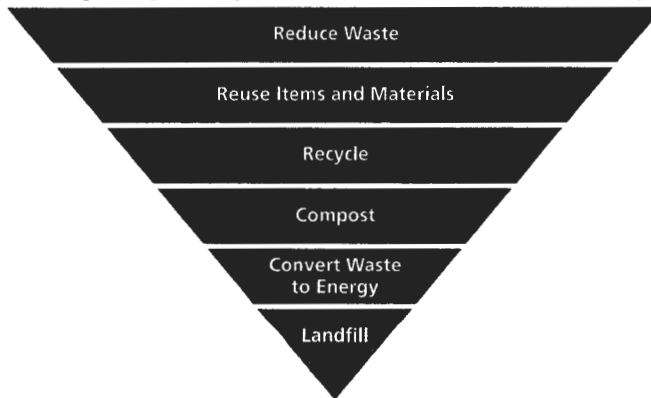
Food Scraps in Montgomery County, Maryland



Note: As Compared to 648,000 Overall Tons of Solid Waste Disposed Per Year

Furthermore, reducing wasted food and encouraging the donation of food to those in need correspond with the top priorities of the County’s Solid Waste Management Hierarchy. Reducing waste, reusing materials, and recycling are the three top tier priorities of the County’s Solid Waste Management Hierarchy as seen below.

Montgomery County’s Solid Waste Management Hierarchy



Montgomery County has a longstanding commitment to protecting the environment and saving natural resources for the future. The County’s Department of Environmental Protection (DEP) operates with an integrated solid waste management system, comprised of facilities, programs and services to manage solid waste in the most environmentally preferable manner, and cost-effectively. The County has a formal goal to reduce waste and recycle 70% of the waste generated by 2020, a waste reduction policy, and regulations in effect that require recycling across all segments of the diverse community, single-family residential, multi-family residential, and businesses, including non-profit organizations and all levels of government. In addition, DEP’s education efforts are comprehensive and robust, and provide technical support and recommendations in efforts to reduce, reuse, and recycle more.

Over the years, DEP has provided assistance and guidance to individual residents, multi-family properties, and businesses in their efforts to separate food scraps and recycle them. One of the limiting factors preventing more widespread recycling of food scraps has been the lack of long-term, stable food scrap composting (or processing) facilities, able to accept and process food scraps to create a new product, namely compost. Despite this, DEP has continued its efforts to expand food scrap recycling through several initiatives.

DEP implemented food scrap recycling programs in on-site cafeterias in three county facilities to gain first-hand expertise and develop best practices. DEP has also actively participated in regional coordination on market development and worked with jurisdictions and the State of Maryland to draft Maryland's first Composting Regulations, adopted in 2015.

In addition, DEP had been performing planning and evaluation activities, among other efforts, looking to secure composting processing capacity for food scraps with the goal of further expanding recycling opportunities. In the meantime, the County Council enacted Bill 28-16, which requires DEP to develop a strategic plan to reduce excess food generation, reuse food that would otherwise be wasted, and increase the amount of food and other compostable waste that is composted. Bill 28-16 requires that DEP include in the strategic plan in consultation with numerous stakeholders, legislative, policy, metrics, and cost recommendations to reduce food scraps and increase composting based upon its evaluation of numerous specific considerations.

The establishment of food scrap reduction efforts and policies laid out in the strategic plan can significantly reduce the impact food currently places on Montgomery County's solid waste stream. The implementation of a food scrap recycling program in Montgomery County can be a major component toward achievement of the 70% recycling goal, while also staying consistent with principles of sustainable resource/materials management. In addition to advancing the County's recycling rate, diverting food scraps from disposal also preserves the limited available capacity at the Resource Recovery Facility (RRF) to process other – non-recyclable – materials as the County's trash tonnage continues to increase. If the RRF capacity is reached, as could occur without the implementation of a food scrap recycling program, the County would incur costs for bypassing excess materials that could not be processed by the RRF due to capacity constraints.

The Strategic Plan provides the direction, framework, and strategies for reducing wasted food including: educating generators on how to decrease the amount of excess food generated, giving food that would otherwise be wasted to organizations that serve people in need, and composting food scraps. Optimal waste management efforts prioritize eliminating or reducing the amount of waste generated to begin with as the most preferred and effective management technique. The next highest priority is to extend the usefulness of any product or material to the maximum extent possible through reuse. The next priority is to recycle or compost the material, depending on the material type. The composting process promotes the biological decomposition of organic material, such as food scraps, into a stable, humus-like product. The "finished" compost product can be used in various agricultural and environmental applications. Compost provides a demonstrated benefit to soil by suppressing plant diseases and pests, reducing or eliminating the need for chemical fertilizers, promoting higher yields of agricultural crops, and by improving overall soil structure. Compost is also a valuable stormwater management tool to reduce runoff volume due to the soil's increased water holding capacity and increased infiltration. Non-recyclable or non-compostable material for which disposal is necessary should be converted to energy. Landfilling is the least preferred method of managing solid waste.

To participate in the development of the Strategic Plan, DEP invited stakeholders to an initial meeting in June 2017. During the meeting, DEP presented goals and objectives for the Strategic Plan, relevant background information on the status of food scrap recycling efforts and requirements of Bill 28-16, and outlined its approach, process, steps and timing, including stakeholder participation. Stakeholders were invited to volunteer and participate in one of six working groups created by DEP: Reducing Wasted Food/Channeling Food to Others; In-Home, Backyard, and Community-Scale Composting; On-Site Institutional and On-Site Business Composting; On-Farm Composting; Composting Capacity to Serve Montgomery County; and Strategies to Maximize Food Scraps Collection at the Curb. DEP drafted chapters for each of the six-major focus areas and provided them to the stakeholder working groups for their review and comment. Stakeholders were asked to provide collective comments, information, and feedback on the draft chapters by November 8, 2017. The stakeholder comments (409 sets) were then reviewed, and the Strategic Plan was written. Some stakeholder comments have not been included at this strategic planning stage, but will be addressed in a later phase of implementation planning.

Recommendations for the six focus areas relate to collaboration, policies, regulations, data, infrastructure, education, and development of implementation plans. Future implementation plans would include timelines and cost estimates for associated activities, and assess and mitigate any potential impacts. Further additional research may be needed to identify required additions or changes to existing regulations, policies, or standard practices related to food scraps. Additional research on data and metrics are needed to further assess current efforts and identify additional sources of food scraps that should be included in the development of a food scrap recycling program. Identification of options to secure food scrap processing capacity at facilities to serve generators in the County is needed.

This executive summary provides a snapshot of the findings for each area of focus, along with the major recommendations.



Reducing Wasted Food/Channeling Food to Others



Findings

While Montgomery County, Maryland may be considered one of the wealthiest counties in the U.S., according to Feeding America, the nation's largest domestic hunger-relief network, 6.3% of the County's population is considered food insecure (i.e., they don't have consistent access to quality, nutritious food). Current practices for channeling "quality, nutritious" food to those who have unmet needs should be modified through collaboration and coordination with other established groups to include donation of food that would otherwise be wasted or thrown away. Donations of food by residents, businesses, and multi-family properties in the County can be affected by food labeling, specifically expiration or "use by..." or "best by..." dates. Expanded and targeted education of donors to understand what is "acceptable" in terms of donation of foods to others can reduce the amount of food that is wasted and disposed of as trash. Through efforts to increase food donations, the County could decrease the amount of food thrown away and decrease food insecurity, which are objectives of this Plan and the Montgomery County Food Security Plan.



Recommendations

- Expand collaboration with community-based stakeholders to create awareness among residents, multi-family properties, and businesses of the importance of reducing wasted food and channeling wasted food to those who are food insecure.
- Work with the Montgomery County Department of Health and Human Services and others to provide input to the State of Maryland and other pertinent groups to further efforts to establish common terms, definitions, metrics, and practices to improve interconnectedness of food systems; encourage development of standardized food labels that are clear and consistent.
- Work with the Montgomery County Department of Health and Human Services, Montgomery County Public Schools, and other schools/educational institutions to develop policies to reduce the amount of wasted food and encourage food donation.
- Consider increased efforts to measure wasted food reduction initiatives, and consider collecting additional data on food recovery efforts by tracking food scraps generated and donated by businesses, non-profit organizations, and others, using existing reporting and other mechanisms.
- Gather and use data to measure food scraps reduction efforts and food recovery donation through reporting by food recovery and assistance organizations.
- Consider development of educational materials on food recovery and assistance programs, including guidelines on donating excess foods.
- Utilize established groups to increase food donation opportunities and to train donors on proper source-separation and storage of donated food.



Resources

Resources which may include staffing, operating, and/or capital funds that are needed to support these recommendations are dependent on the specific details that should be determined in the development of an implementation plan.



In-Home, Backyard, and Community-Scale Composting



Findings

Montgomery County has promoted grasscycling (leaving grass clippings on the lawn after mowing), backyard and community-scale composting of yard trim materials through training, compost workshops and demonstrations, distribution of educational materials, and vermicomposting to recycle kitchen food scraps in-home. Over the long-term, the County has successfully used education and training to encourage residents to grasscycle and compost yard trim materials. At the Montgomery County Composting Facility, a maximum of 77,000 tons of materials may be processed annually, and DEP's efforts have encouraged many residents to manage their grass and leaves at the source. In fact, since 2007, DEP has also distributed over 38,000 backyard compost bins to residents to use for backyard composting. According to the County's most recent Waste Composition Study, yard trim materials accounted for less than 2% of the County's overall disposed waste stream, indicating that most yard trim is recycled through composting (via backyard/on-site, community, or composting facilities) or grasscycling. The County should evaluate the feasibility of encouraging residents to recycle food scraps through at-home, backyard, and community-scale composting programs.



Recommendations

- Continue educational efforts on all forms of in-home, backyard, and community-scale composting, including providing compost training workshops and demonstrations on best practices for backyard and community-scale composting, as well as research and evaluation of other types of compost bins that are suitable for composting food scraps.
- Conduct a coordinated inter-agency review of existing requirements and restrictions pertaining to backyard/community-scale composting, and recommend regulatory changes to County zoning and applicable County codes to clarify, and support activities to include food scraps.
- Consider implementation of regulatory changes or modifications to promote and encourage proper backyard and community-scale composting activities.
- Consider increased collaboration with community-based stakeholders and other pertinent groups (i.e., The Maryland-National Capital Park and Planning Commission - Montgomery Parks, Montgomery County Public Schools, and interested residents, multi-family properties, and businesses or organizations) to establish community-scale composting demonstration projects throughout the County.



Resources

Resources which may include staffing, operating, and/or capital funds that are needed to support these recommendations are dependent on the specific details that should be determined in the development of an implementation plan.



On-Site Institutional and On-Site Business Composting



Findings

According to the DEP's most recent Waste Composition Study, an estimated 79,000 tons of food scraps are disposed by the non-residential sector (comprised of businesses, organizations, and government). Yard trim materials, including grass clippings and leaves, are mandated for recycling, and are currently being recycled by businesses on-site (through grasscycling or composting) or are removed off-site by lawn care service providers for composting. Only 1.6% of non-residential waste disposed as trash includes grass clippings and leaves, demonstrating there is a high level of compliance and most yard trim is being properly managed in the non-residential sector.

DEP has identified a few businesses that have some type of on-site composting program in place where their food scraps or other organic materials generated on-site at the place of business are also composted on-site. To increase composting of food scraps, expanding on-site composting at businesses/commercial properties is one solution that could minimize the amount of food scraps disposed in the solid waste stream.



Recommendations

- Continue efforts to expand educational activities to encourage businesses that may wish to set up on-site food scrap recycling programs.
- Identify institutions and businesses that generate significant quantities of food scraps and assess potential for on-site composting activities; provide educational materials and trainings; provide follow-up assistance to address issues/concerns; and evaluate.
- Continue to work with businesses, institutions, and business groups (such as the Chambers of Commerce, business associations, government agency representatives, and others) to encourage businesses to set up and maintain on-site food scrap composting programs.
- Encourage businesses and institutions to report data on the amount of food scraps composted on-site to measure on-site composting efforts.
- Explore incentives such as grants for businesses and institutions to purchase necessary supplies and equipment to facilitate the collection and on-site composting of food scraps.



Resources

Resources which may include staffing, operating, and/or capital funds that are needed to support these recommendations are dependent on the specific details that should be determined in the development of an implementation plan.



On-Farm Composting



Findings

The U.S. Department of Agriculture's 2012 AgCensus Report estimated there are 540 farms (average size 118 acres) in Montgomery County, of which 42% are farmed as a primary occupation. In 1980, Montgomery County created the Agricultural Reserve, which includes 93,000 acres of land and is zoned to encourage agricultural uses. The agricultural community has routinely composted organic material, such as manure, on-site to reduce the amount of waste, and typically, these materials are generated on-site, as a by-product of their farm operation. The finished composted material is then used by the farm to rejuvenate its soils. Currently, DEP is aware that limited amounts of food scraps and other organic materials from off-site sources are being composted on-site at some farms. To increase composting of food scraps, expanding on-farm composting is one solution that could minimize the amount of food scraps disposed in the solid waste stream.



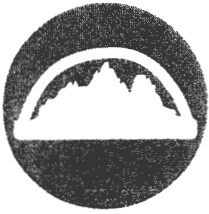
Recommendations

- Work with Maryland Department of the Environment, Maryland Department of Agriculture, the Montgomery County Office of Agriculture, Soil Conservation District, Cooperative Extension Service, and others to meet with the agricultural community to discuss on-farm composting of food scraps.
- Convene a multi-agency group to review and update County zoning and other applicable County codes, if necessary, to promote increased opportunities for on-farm composting of food scraps and other organic materials.
- Conduct research to assess expansion of on-farm composting activities, including identifying farmers interested in on-farm composting.
- Develop technical assistance to generators and farmers to facilitate on-farm composting of food scraps, including information on State and local regulations applicable to on-farm composting of food scraps, as well as educational materials, which may include design standards, guidelines, and best practices.
- Consider policies, legislation, and regulations that promote and encourage the use of finished compost in the region.
- Explore incentives such as grants for farmers to purchase necessary supplies and equipment to facilitate the collection and on-farm composting of food scraps.



Resources

Resources which may include staffing, operating, and/or capital funds that are needed to support these recommendations are dependent on the specific details that should be determined in the development of an implementation plan.



Composting Capacity to Serve Montgomery County



Findings

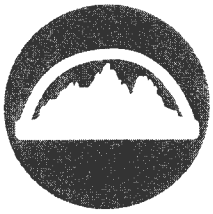
The commercial sector generates over half of all waste generated in the County and disposes of approximately 79,000 tons of food scraps annually. Therefore, encouraging businesses to set up food scrap composting programs for their workplaces provides the County the opportunity to divert a significant amount of waste from the overall waste stream. According to data from CY2015 Annual Business Waste Reduction and Recycling Reports, 30 businesses reported they source-separated food scraps for recycling, sent to processing facilities through collection by recycling collection companies. Numerous businesses have expressed to DEP an interest in separating their food scraps for recycling. DEP developed food scrap recycling collection programs for pre-consumer food scraps generated in cafeterias in three County facilities: the Executive Office Building, the Council Office Building, and the Public Safety Headquarters Building. DEP used these programs to develop educational materials and training, and recommended best practices when implementing food scrap recycling programs. However, a limiting factor in businesses setting up food scrap recycling collection programs has been the lack of long-term, stable food scrap composting processing facilities to serve the region.

More recently, there has been an increasing availability of processing facilities in the regional market to accept and process food scraps for recycling. DEP should build upon its existing efforts to County businesses, and provide financial incentives to expand the current number of businesses that source separate food scraps, contract for food scrap recycling collection service, and encourage development and expansion of processing facilities to increase capacity for additional tonnages of food scraps for recycling.



Recommendations

- Continue to identify businesses/multi-family properties that generate significant quantities of food scraps; provide education and training; and provide resource lists of food scrap composting processing facilities and recycling collection service providers that offer food scrap recycling collection services.
- Continue to promote use of the Prince George's County Western Branch Composting Facility for recycling of commercially-generated food scraps and other acceptable organic materials.
- Continue to research opportunities to secure additional capacity for food scraps and other organic material generated in the County that can be processed at regional composting facilities, and other facilities that utilize other technologies such as anaerobic digestion.
- DEP should continue to work with composting and/or anaerobic digestion facilities, and should pursue and attain agreement(s) to secure stable processing capabilities for additional tonnages of food scraps generated in the County, through the issuance of Request for Proposals (RFPs).



Composting Capacity to Serve Montgomery County



Recommendations (continued)

- DEP should structure agreements to secure stable processing capacity, and to offset processing costs to incentivize and induce increased recycling of food scraps.
- DEP should establish Executive Regulations to support the expansion of food scrap processing capacity:
 - A regulation to establish differential tip fees to motivate generators to source-separate food scraps and other organics, and encourage collectors to provide recycling collection services for these materials.
 - A regulation to establish rules to ensure the County pays its contract processor(s) only for food scraps and other organic materials that are generated within the County.
- Work with licensed collectors/haulers that collect food scraps and other organic materials from businesses, organizations, and government facilities, to provide information, education, and trainings.
- Continue and expand work with business owners/managers, Chambers of Commerce, business associations, representatives of government agencies, and others to raise awareness of food scrap recycling programs and increase participation.
- Consider various metrics to obtain data regarding the amount of food scraps available to better estimate processing capacity needs and document the amount of food scraps and other organics collected for recycling.
- DEP should implement any necessary minor modifications to the Transfer Station Annex Building to accommodate receipt and transfer of food scraps for recycling.
- Longer-term, DEP should explore feasibility of using in-County capacity, including County-owned property(ies) for processing source-separated food scraps and other acceptable organic materials.



Resources

In FY19, \$432,000 funds a new, dedicated position in DEP to manage the Commercial Food Scraps Recycling Program, and provides for minor modifications that may be necessary to the Transfer Station Annex Building to accommodate receipt and transfer of food scraps for recycling. The new Program Manager will work to secure capacity to process and recycle food scraps (and potentially other acceptable organics), and also develop incentives to increase recycling of food scraps in the commercial sector. These incentives may include establishment of differential tip fees at County solid waste acceptance facilities to motivate generators to source-separate food scraps and potentially other organics, and encourage collectors to provide recycling collection services for these materials.

Additional resources, including staffing, operating, and capital costs, may be needed in the future to support these recommendations, dependent on the specific details determined in further development of an implementation plan.



Strategies to Maximize Food Scraps Collection at the Curb



Findings

As part of its weekly curbside recycling collection provided to all approximately 217,000 single-family households in the County, DEP collects yard trim. These materials are transported to the County's Shady Grove Processing Facility and Transfer Station, where the grass clippings and leaves are loaded and transported to the Montgomery County Composting Facility. In CY2015, approximately 66,000 tons of material was processed at the County's Composting Facility; 77,000 tons may be processed annually. The finished product is a soil amendment called Leafgro®, which is bagged, distributed to retailers and sold; the product is also sold in bulk. According to the County's most recent Waste Composition Study, it is estimated that approximately 51,000 tons of food scraps are disposed by the single-family sector annually. Diverting food scraps and other acceptable organic materials for recycling would help the County towards achievement of the goal to recycle 70% by 2020. DEP should consider the feasibility of conducting a pilot program to provide single-family residential curbside recycling collection of food scraps and other organic material leveraging existing collection services, and available capacity at its facilities for operational and cost efficiencies.



Recommendations

- DEP should develop information and materials on best practices, provide education to single-family residents about separation and recycling of food scraps, and utilize its education and technical assistance offerings to assess the level of interest residents have to voluntarily participate in any potential residential curbside collection pilot or program.
- DEP should consider implementation of a curbside food scraps recycling collection pilot for single-family households, to examine numerous aspects (i.e., education to the broader community and to participating residents, containerization, collection, processing, finished product, monitoring, and collecting data and feedback for evaluation).
- DEP should pursue any necessary agreements and Maryland Department of the Environment permit amendments to update existing processes at the Montgomery County Composting Facility to incorporate food scraps and other acceptable organic materials (such as soiled paper and compostable food service ware products).
- DEP should determine any adjustments to its receiving procedure at the Montgomery County Shady Grove Processing Facility and Transfer Station, and identify any equipment at the Montgomery County Composting Facility that may be necessary in the future to properly compost food scraps and other organic materials, and mitigate potential odor and runoff issues.



Resources

In FY19, \$132,000 funds DEP staff to provide education and technical assistance to residents of single-family homes to increase awareness and understanding about food scraps separation and recycling. Staff will develop best practices, and use these to create educational materials, and conduct meetings and presentations to residents. Staff will also assess the level of interest residents have to participate in a voluntary residential curbside recycling collection pilot which may be planned in the future.

Additional resources, including staffing, operating, and capital costs, that are needed in the future to support these recommendations are dependent on the specific details determined in further development of an implementation plan.