

IV. WASTE MANAGEMENT

Board of Supervisors' Environmental Vision:

“Fairfax County will use integrated waste management principles to ensure future system capacity and sustainability. The objectives are an increase in the recovery of recyclable materials; a decrease in the amount of material disposed of; a decrease in greenhouse gas emissions by managing landfill gas; development of renewable energy and alternative fuels for buildings and vehicles; and preservation of open space, green space, and wildlife preserves.”

INTRODUCTION

This chapter provides an overview of the county’s solid waste management system and discusses a range of waste management issues as follows:

- Components of the county’s system;
- Solid Waste Management Program (SWMP) Overview;
- Current status for key issues;
- Recommendations to realize board’s Environmental Vision.

Components of the Solid Waste Management Program (SWMP)

The six components of the SWMP are described below:

- *Source Reduction* - is principally comprised of the Fairfax County Government and Schools Zero Waste Plan. The plan goal is to divert 90% of generated waste away from landfills or incinerators and decrease generated waste by 25%.
- *Reuse* encourages using items multiple times for its original purpose or different function and is a part of the Zero Waste Plan
- *Composting* diverts brush, grass, and leaves from disposal to produce compost that can be added to soil to help plants grow.
- *Recycling* target materials include glass, paper, cardboard, metal, plastic, tires, motor oil, and electronics. In addition to the environmental benefits, recycling is significantly less costly than Refuse Disposal
- *Collection and Transfer* containerized refuse collection from residents, businesses, and institutions is consolidated into larger, tractor-trailer loads at a transfer station.
- *Municipal Solid Waste (MSW) Disposal* includes material not diverted from the waste stream by recycling, composting or other methods. Fairfax County MSW disposal takes place primarily at the Covanta facility described below. The remaining ash after energy recovery is processed to remove metals, stabilized to prevent leaching of toxic components, and landfilled at the I-95 Landfill Complex. When Covanta is non-operational for repairs and maintenance, or any other reason, refuse is transported to one of several contracted landfills.

SWMP Operations Overview

SWMP's Operations Division oversees the collection, transfer, and disposal of solid waste and recyclables within the county. There are two county-owned disposal facilities; the I-66 Transfer Station and the I-95 Landfill Complex. Most of Fairfax County's Municipal Solid Waste (MSW) is processed from Waste-To-Energy (WTE) at the WTE facility owned by Covanta Fairfax, LLC (Covanta) and is located on the I-95 Landfill Complex. The SWMP also provides collection services to approximately 43,000 single family homes and most county-owned properties and buildings.

- County Sanitary Collection Districts. For about 10% of residents, Fairfax County provides curbside collection services for refuse, recyclables, yard waste, and bulky items within Sanitary Districts (SDs). Outreach and data collection to the sanitary district residents is under the control of county staff and effective.
- Private Collection The remaining 90% of collection and all recyclers are private firms that in the past have not been required to do outreach. Data collection from these private firms is cumbersome.
- Single stream recycling. In addition to the County Sanitary Collection District recycling, most County residents have single stream recycling available to them. With single-stream recycling, recyclables including newspaper, cardboard, plastic, aluminum, junk mail, etc., are placed in a single bin for recycling. These recyclables are collected by a single truck and taken to a Materials Recovery Facility (MRF) to be sorted into various commodity streams for sale to markets. A separate truck typically collects additional municipal solid waste that has not been separated for recycling.
- Outreach & Education. Community outreach programs focus on educating residents, county employees, and businesses about the importance of source reduction, reuse, composting, and recycling. Under the Four touch points (4TP) initiative and started in March of 2023, all private haulers are required to provide at least one piece of waste reduction and/or recycling outreach/education material to their residential customers at least four times per year. The 4TP program is expected to further educate the community, however, education and traditional outreach have been ineffective in increasing reuse, reduction, and recycling.
- Household Hazardous Waste (HHW) Drop-off. Locations at the I-66 and I-95 facilities provide a convenient means for residents to dispose of HHW items such as paints, pesticides, herbicides, aerosols, pool chemicals, household cleaners, solvents, fluorescent bulbs, recycle electronics (e-waste), motor oil, antifreeze, batteries cooking oil, ink/toner cartridges, and empty compressed gas cylinders. Additionally, the HHW operation maintains a partnership with Habitat for Humanity to recycle latex paint, and stages Very Small Quantity Generator events as an affordable solution to hazardous waste disposal for Fairfax County businesses and government agencies that generate small quantities of hazardous waste.
- Food Waste Drop-Off Programs. – Food waste is diverted from MSW via drop-off locations for food scrap composting at the I-66 and I-95 facilities, five locations at selected farmers markets, and food waste collection at County events and in selected government office kitchens, libraries, and legislative offices. The program is now being taken over and expanded by the Fairfax County Park Authority, which operates a network of farmers markets throughout the County. The next wave of implementation will place drop-off locations at ten markets across the county. A county operated food composting pilot is underway at the I66 facility. Despite these efforts, total food waste collection decreased in 2022.
- Glass collection – Glass is banned from single stream commingled collection because it contaminates the reusable materials. The county provides 19 drop off locations as part of the purple can club network in the region.

- Enforcement Program. A standalone SWMP enforcement Unit responds to complaints, conducts scheduled and unannounced compliance inspections, and initiates enforcement actions, when necessary, on solid waste haulers and litter and illegal dumping. Most of the hauler complaints are about missed collection, collecting too early and for mixing MSW with recycled waste. In 2023 addition enforcement is focusing on collection and storage system adequacy and access to recycling at multi-family housing properties and non-residential waste generators such as retail operations. Enforcement of solid waste code is time consuming and cumbersome when compared to parking citations. Fines are also limited to \$500, which can be too low to encourage change.
- Regional Coordination. SWMP staff serve on several industry-related advisory boards and committees with the Northern Virginia Regional Commission (NVRC) and the Metropolitan Washington Council of Governments (MWCOCG). This work promotes coordination and collaboration between jurisdictions across the region and promotes shared research and data, and the adoption of best management practices among planners and regulators.
- Disposable Plastic Bag Tax Effective January 1, 2022, disposable plastic bags provided at point of sale to consumers at grocery stores, convenience stores and drugstores in Fairfax County are subject to a five-cent tax. To avoid the tax, consumers may use reusable shopping bags. Paper bags are not subject to the five-cent tax, although certain retailers may have their own fees for paper bags. The purpose of the tax is to curb our collective use of disposable plastic bags, to reduce the amount of plastic waste in our local waterways, roadways, and open spaces and the damage it causes.

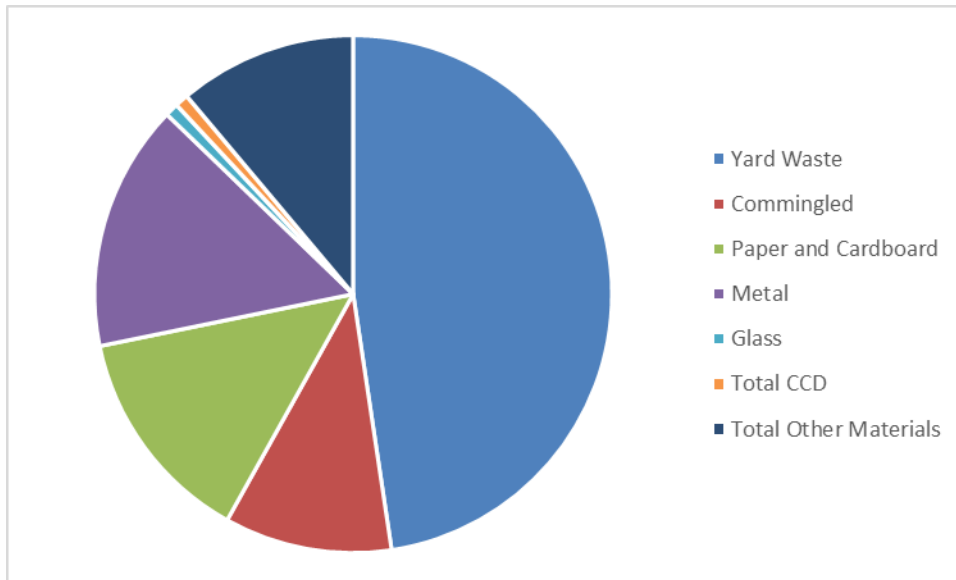
CURRENT STATUS

Recycling

Recycling Data

Both commercial firms and residents are required under county code to separate recyclables from their municipal solid waste for recycling. Recycling is not voluntary. Data on recycled material is collected from a variety of sources and reported to the Virginia Department of Environmental Quality. The system for reporting to VDEQ contains complex credits and adjustments. The data reported below does not contain these modifications to the raw data.

The Figure 1 circle chart below indicates yard waste is by far the largest share of recycled material at 35% of the total, followed by construction demolition debris (CDD) at 16%. Metals at 12% are the next largest material that is processed by local scrap metal processors. Cardboard at 8% is principally from commercial office operations and grocery/box store sources. Commingled recycled materials which includes both residential curbside recycling and mixed recyclables from commercial operations comprised only 12% of the total recycled material.



The following Table 1 includes more details on current and the last 10 year of recycling.

- Paper and cardboard recycling is down 17%
- Food waste is down 21%
- CCD (Construction materials) is up 33%.
- Glass collection is down 7%
- With these decreases, total recycling at 47% remains just below the historic average of 48% principally due to the large amount of CCD and Wood Waste. These materials are related to high construction activity.

Table 1

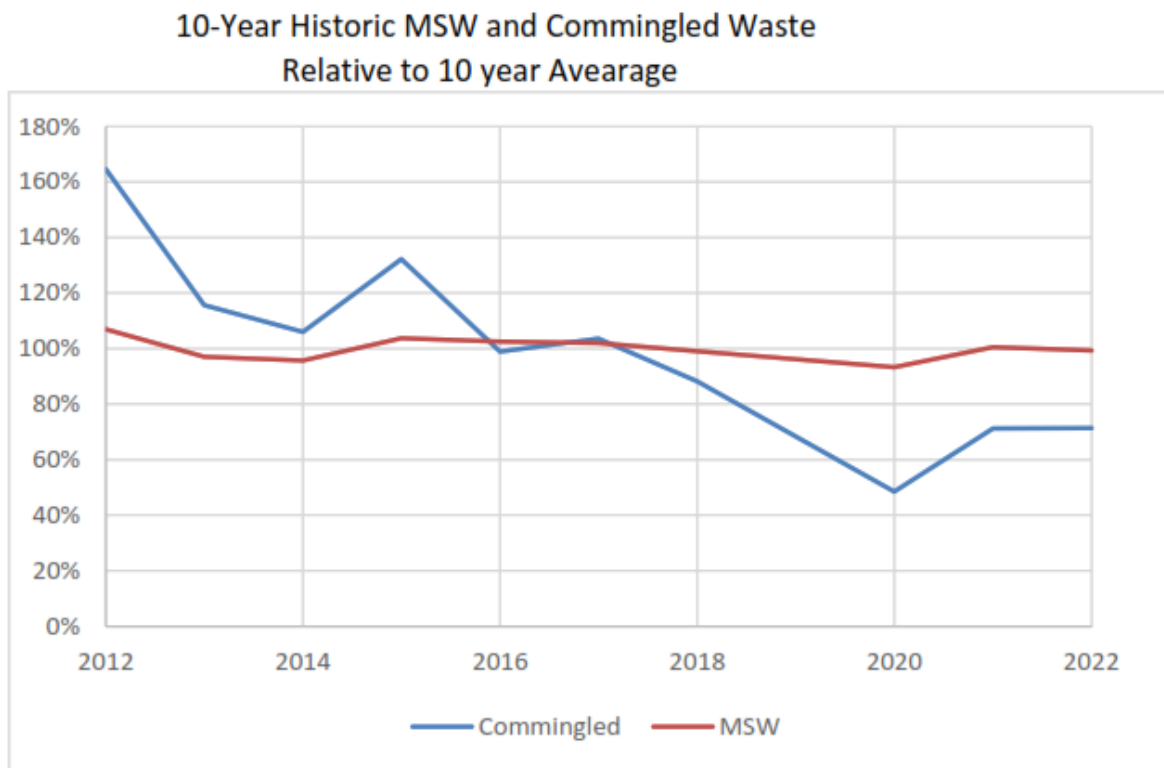
Recycle, MSW and Construction Debris Data from 2012-2022 SWMP Reports to Virginia DEQ

Recycled Material	2022	Historical (2012-2022) Average	Maximum Historical (2012-2022)	2021 2022 Change	2022% Max	2022 Item % of total recycled
Yard Waste	194,388	207,556	243,927	-2%	80%	35%
Commingled	67,992	95,375	157,038	0%	43%	12%
Paper and Cardboard	44,064	84,931	116,547	-17%	38%	8%
Metal	68,549	60,686	77,637	-5%	88%	12%
Glass	4,861	1,890	5,197	-7%	94%	1%
Food Waste	11,863	8,354	14,379	-21%	83%	2%
Total CCD	91,992	68,667	125,471	33%	73%	16%
Total Other Materials	74,346	39,318	74,346	29%	50%	7.0%
Total Recycled	558,054	564,270	647,450	6%	82%	100%
Household MSW	250,692	253,991	261,172	0%	100%	47%
Commercial MSW	367,037	353,804	375,165	-2%	85%	69%
Total MSW	617,729	620,630	665,509	-1%	87%	
Total MSW and Recycled	1,175,783	1,186,264	1,312,959	2%	85%	
Recycled Percent of Total	47%	48%	49%	4%	97%	
Commingled + Glass % of total Household	23%	28%	38%	-0.4%	42%	

Commingled waste is the recycled material most familiar to Fairfax County residences because it comes principally from what they put out for collection. Comingled waste together with glass is estimated at 23% of the total municipal solid waste. Based on studies for the Zero Waste Plan, 23% may be less than half of what could be recycled.

Of the MSW, less than a quarter was recycled in 2021, including the county's glass recycling program.

Figure 2 below shows the historic MSW and Commingled Recycled material as a percent of the 10-year average. Total MSW and Commingled Recycled material has been stable. However, the data indicates that curbside recycling has been in decline. Curbside recycling as estimated by commingled recycling is 25 percent below the historic average and less than half its peak.



Source Reduction Fairfax County Government and Schools Zero Waste Plan

In 2021, the Fairfax County Board of Supervisors approved a Zero Waste Plan for Fairfax County government and schools to achieve zero waste by 2030 through the implementation of 24 optimal strategies. It is two years since the goals for this plan were established and much of the progress appears to be to do more planning, voluntary actions, and outreach. While many of 24 Optimal Strategies are worthwhile, the heavy dependence on outreach is a concern. The County SWMP has been attempting to increase the level of reduction and recycle for the last 10 years using outreach strategies and they have concluded that outreach is not effective in moving further toward reducing waste disposal let alone achieving zero waste. It would appear

that based on the SWMP experience, more aggressive action is needed if the Supervisors goals are to be met. Ten percent of the zero-waste implementation time is gone and in 2023 County recycling of solid waste actually decreased.

The Zero Waste Plan is laudable and can be used as a motivating example to energize the private sector. It is helpful for County Government to walk the walk before asking more from the private sector. However, the Government and Schools Zero Waste Plan addresses less than 2% of the total solid waste of the SWMP. To actually move the entire County to less waste, it will be necessary to take significant bold steps in the private sector.

Zero Waste by the numbers

To be successful the Zero Waste plan must establish quantitative objectives and a schedule for each of the 24 Optimal strategies. Doing this will require a realistic look at the different categories of the plan including the following:

- Reduce and Reuse – The Zero Waste Plan has Reduce and Reuse Strategies that can be implemented by the County and the Schools. Some of these strategies are currently being implemented. Numeric objectives need to be established for the current plan and to include means of incorporating the private sector.
- Comingled (including Curbside) recycling - County staff analysis has shown that recycling is less expensive than utilizing Covanta. The Fairfax Waste Ordinance requires recycling. However, only 25% of the MSW (commercial and residential) material was recovered in comingled collection. Data on the specific amount of recycled material in Fairfax MSW is needed, however, based on national¹ and local data, the current percentage appears to be less than ½ what is recyclable. The plan should consider means of motivating the haulers with economic incentives to increase this economical aspect of zero waste.
- Recycled rejects – Fairfax comingled recycling is sent to recycling businesses that operate profitably. This means that only the profitable material in comingled recycling is actually recycled. Specific Fairfax data is needed on the reject rate. The SWMP has utilized outreach to reduce the reject rate by asking residents to only include recyclable materials in curbside pickup. However, a large part of the problem is not residents, but misleading industry practice. Many plastics are labeled by industry that are not actually profitable to recycle and as a result are rejected. This issue requires national action; however, the Zero Waste Plan should consider ways to reduce the sale of materials labeled as recyclable that are in fact not.
- Food Waste – Based on local and national data, less than 2% of the Fairfax potential food waste is currently being recycled. Some jurisdictions (including New York City) are requiring food waste recycling. To move toward Zero Waste, the County will need to invest significantly in this aspect of recycling.
- Covanta Advantage – While reduce, reuse and recycled is preferred; Fairfax has the advantage of energy recovery of materials that cannot be practically recycled. The Zero waste plan should include numeric analysis of the energy recovery from Covanta.

¹ <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials#:~:text=The%20Current%20National%20Picture,-EPA%20began%20collecting&text=The%20total%20generation%20of%20municipal,25%20million%20tons%20were%20composted.>

- Outreach - The County staff have indicated that current outreach efforts are not likely to advance this recycling rate significantly toward the zero-waste goal. Monetary enforcement incentives should be considered.

Trash Collection Service Issues

Starting in 2019, multiple petitions have been made to the county to form or expand the existing Sanitary collection Districts which service about 10% of Fairfax residents. Nationwide and in Fairfax County there is a shortage of public works labor. This shortage has contributed to a deterioration in quality collection services.

Under the model being developed, the Board could approve new sanitary districts that would then be serviced by a private hauler contracted by the County. There are pros and cons to this approach. One benefit is fewer trucks on the road improving safety and lowering emissions. In addition, with the private haulers acting under contract to the County, outreach and data collection could be required by contract. County staff have reported that legislative changes would be required to implement this model.

Trash Collection and Recycle processing companies will play important roles in extending the County's Zero Waste Goals to all of Fairfax County. While the current county ordinances can be used to make progress toward the goal, it is likely that the ability to require zero waste actions on these firms will be required.

Environmental Preferable Purchasing

The Department of Procurement and Material Management (DPMM) manages the Environmental Preferable Purchasing (EPP) Policy through the Green Purchasing Program. DPMM is also charged with implementing the Zero Waste Plan. While the DPMM has invested considerable time and effort in communicating the county goals to county departments, it is difficult to track actual progress as there are no numeric criteria and no schedule with accountable milestones.

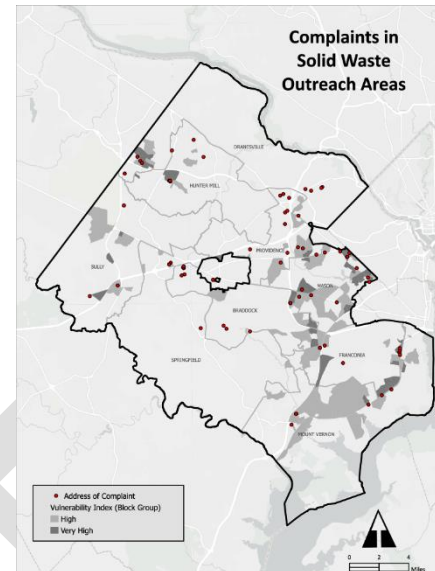
Litter and Illegal Dumping

There are multiple volunteer organizations addressing litter including the Alice Ferguson Foundation and Clean Fairfax. In addition, the Department of Code Compliance (DCC) receives and investigates code complaints covering a wide range of issues, including zoning complaints, signs, noise, lighting, and illegal dumping. DCC receives but does not record and track litter and illegal dumping complaints, which are estimated by DCC to be less than ten in the last year. DCC has issued Notice of Violations and worked with the responsible parties to obtain compliance without taking anyone to court.

Notwithstanding the low number of litter complaints the county's streams continue to have trash, plastic bags, and bottle contamination. The county is experimenting with a trash trap in Little Hunting Creek. The pilot study is ongoing. Little Hunting Creek was selected due to its litter history with over 4,000 bags of trash collected over a 20 year period and complaints from residents.

Solid Waste Collection Complaints and Litter.

Late collection, overflowing containers, waste on the ground (not placed in containers) all result in litter that despoils the neighborhoods and often contaminate County streams. Residential complaints about solid waste collection are addressed by DPWES. Complaints about collection services and about litter around collection sites has been increasing substantially with over 1,500 complaints in 2022 recorded. County staff indicate that no citations were issued in 2022 because enforcement is cumbersome and most complaints against haulers are quickly addressed. As shown on Figure 3, the majority of complaints for overflowing dumpsters are in numerable outreach areas. The County plans to concentrate enforcement more on property owner responsibility for inadequate storage and recycling facilities.



RECOMMENDATIONS

1. Budget and Establish an Accountable Zero Waste Plan for the public and private sector.
Recommendation: | *Age:* New

Justification and Background:

Ten percent of the schedule to achieve zero waste by 2030 is expended and the actual recycling rate has decreased since the BOS called for Zero Waste. A specific action plan with deadlines and realistic reduction targets for each action are needed. A re-evaluation of how waste is addressed is needed. Food waste diversion will be required on a large scale. Restaurants, commercial firms, and institutions will need to be required to implement specific actions. Practical means of recycling will be needed for multi-family residents. Haulers and recycling processors will need to be a part of the solution. Outreach will be insufficient to obtain the goal.

2. Utilize Existing County Authority or Obtain Legislative Authority to:
 - Implement the Zero Waste Plan for all public and private waste.
 - Efficiently enforce solid waste regulations and policy
 - Collect Accurate Data Efficiently
 - Institute Sanitary Collection Districts that allow including Zero Waste Plan Elements in Hauling and recycling contracts.

Recommendation: | *Age:* New

Justification and Background:

Where it is possible to proceed to the zero-waste goal with existing County Authority, it should be done now. However, it will be necessary to obtain additional authority through the legislature to achieve the zero-waste goal.

3. **Institute Recycling Data Collection and Reporting**

Recommendation: 4WM-2021.1 | *Age:* Two years

Justification and Background:

Data indicate that countywide residential curbside recycling is low. To obtain the cultural change needed to meet the board's goals, the county is encouraged to

continue improving outreach, but to also to require private haulers to report to their customers their annual percentage of curbside collection that is recycled. In addition, institute outreach requirements and accurate data reporting policies on private waste haulers that result in increased recycling.

4. **Institute Litter Control**

Recommendation: 4WM-2021.2 | Age: Revised

- Support Virginia law changes for a container redemption fee (“bottle bill”) *Stalled*
- Enforce litter control requirements on Waste Haulers *(Two year)*
- Complete the Hunting Creek Trash Collection Pilot and institute a permanent installation.

Justification and Background

County streams and public land continue to be impacted by illegal dumping and litter.

Complaints about litter around dumpsters have increased substantially.

5. **Establish Environmental Purchasing Numeric Targets**

Recommendation: 4WM-2021.3 | Age: two year

Justification and Background:

The county has expanded staff to improve environmental purchasing. However, without specific goals and reporting, it is difficult to assess how successful and worthwhile this investment is.

6. LEAF COLLECTION _ TO BE DEVELOPED