



2023 SOLID WASTE MANAGEMENT PLAN

Lawrence Scioto Solid Waste
Management District

PREPARED BY:



recycle.com

COMMISSIONED BY:

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SECTION i SOLID WASTE MANAGEMENT

DISTRICT INFORMATION

Table i-1 Solid Waste Management District Information

SWMD Name	Lawrence Scioto Solid Waste Management District
Member Counties	Lawrence County and Scioto County
Coordinator's Name (main contact)	Rick Jansen
Job Title	Director
Street Address	101 North 3rd Street
City, State, Zip Code	Ironton, Ohio 45638
Phone	740-532-1231
Fax	740-532-0500
E-mail address	rick.jansen@sciotocounty.net
Webpage	lsswmd.org

Table i-2 Members of the Policy Committee/Board of Trustees

Member Name	Representing
Lawrence County	
DeAnna Holliday	County Commissioners
Mayor Sam Cramblit	Municipal Corporations
Mike Finley	Townships
Georgia Dillon	Health District
Brett Looney	Generators
Tom McCallister	Citizens
Dick Gilpin	Public
Scioto County	
Bryan Davis	County Commissioners
Sam Sutherland, City Manager	Municipal Corporations
Scott Bauer	Townships
Melissa Spears	Health District
Mike Payne	Generators
Mary Beaumont	Citizens
John Murphy	Public
Public Member: Cole Webb, Union Township Board of Trustees	

Table i-3 Chairperson of the Policy Committee or Board of Trustees

Name	Bryan Davis
Street Address	602 7th St #1
City, State, Zip Code	Portsmouth, OH 45662
Phone	(740) 355-8313
Fax	740.353.7358
E-mail address	bryan.davis@sciotocounty.net

Table i-4 Board of County Commissioners/Board of Directors

Commissioner Name	County	Chairperson/President
Colton Copley	Lawrence	
DeAnna Holliday	Lawrence	President
Freddie Hayes	Lawrence	
Scotty Powell	Scioto	
Bryan Davis	Scioto	President
Cathy Coleman	Scioto	

The Board of Director president alternates every other year. As such, in 2021, the Scioto County Commissioner was president. In 2022, the Lawrence County Commissioner is president. In 2023, and so on, throughout the planning period the president position alternates.

Technical Advisory Committee: Not utilized for this Plan Update.

Consulting Information



Resource Recycling Systems
416 Longshore Drive
Ann Arbor, Michigan 48105
1-800-517-9634
1-734-996-1361

CHAPTER 1 INTRODUCTION

A. Brief Introduction to Solid Waste Planning in Ohio

In 1988, Ohio faced a combination of solid waste management problems, including declining disposal capacity at existing landfills, increasing quantities of waste being generated and disposed, environmental problems at many existing solid waste disposal facilities, and increasing quantities of waste being imported into Ohio from other states. These issues combined with Ohio's outdated and incomplete solid waste regulations caused Ohio's General Assembly to pass House Bill (H.B.) 592. H.B. 592 revised Ohio's outdated solid waste regulatory program and established a comprehensive solid waste planning process.

There are three overriding purposes of this planning process: to reduce the amount of waste Ohioans generate and dispose of; to ensure that Ohio has adequate, protective capacity at landfills to dispose of its waste; and to reduce Ohio's reliance on landfills.

B. Requirements of County and Joint Solid Waste Management Districts

1. STRUCTURE

As a result of H.B. 592, each of the 88 counties in Ohio must be a member of a solid waste management district (SWMD). A SWMD is formed by county commissioners through a resolution. A board of county commissioners has the option of forming a single county SWMD or joining with the board(s) of county commissioners from one or more other counties to form a multi county SWMD. Ohio currently has 52 SWMDs. Of these, 37 are single county SWMDs and 15 are multi county SWMDs.¹

A SWMD is governed by two bodies. The first is the board of directors which consists of three county commissioners from each of counties in the SWMD. The second is a policy committee. The policy committee is responsible for developing a solid waste management plan for the SWMD. The board of directors is responsible for implementing the policy committee's solid waste management plan.² Policy committees prepare/monitor plans and create details and authorities to spend toward implementation, while the Board carries out the day-to-day implementation.

2. SOLID WASTE MANAGEMENT PLAN

In its solid waste management plan, the policy committee must, among other things, demonstrate that the SWMD will have access to at least 10 years of landfill capacity to manage all of the SWMD's solid wastes that will be disposed. The solid waste management plan must also show how the SWMD will meet the waste reduction and recycling goals established in Ohio's state solid waste management plan and present a budget for implementing the solid waste management plan.

¹Counties have the option of forming either a SWMD or a regional solid waste management authority (Authority). The majority of planning districts in Ohio are SWMDs, and Ohio EPA generally uses "solid waste management district", or "SWMD", to refer to both SWMDs and Authorities.

²In the case of an Authority, it is a board of trustees that prepares, adopts, and submits the solid waste management plan. Whereas a SWMD has two governing bodies, a policy committee and board of directors, an Authority has one governing body, the board of trustees. The board of trustees performs all of the duties of a SWMD's board of directors and policy committee.

Solid waste management plans must contain the information and data prescribed in Ohio Revised Code (ORC) 3734.53, Ohio Administrative Code (OAC) Rule 3745-27-90. Ohio EPA prescribes the format that details the information that is provided and the manner in which that information is presented. This format is very similar in concept to a permit application for a solid waste landfill.

The policy committee begins by preparing a draft of the solid waste management plan. After completing the draft version, the policy committee submits the draft to Ohio EPA. Ohio EPA reviews the draft and provides the policy committee with comments. After considering and appropriately revising the draft to address Ohio EPA's comments, the policy committee makes the plan available to the public for comment, holds a public hearing, and revises the plan as necessary to address the public's comments.

Next, the policy committee ratifies the plan. Ratification is the process that the policy committee must follow to give the SWMD's communities the opportunity to approve or reject the draft plan. Once the plan is ratified, the policy committee submits the ratified plan to Ohio EPA for review and approval or disapproval. From start to finish, preparing a solid waste management plan can take up to 33 months.

The policy committee is required to submit periodic updates to its solid waste management plan to Ohio EPA. How often the policy committee must update its plan depends upon the number of years in the planning period. For an approved plan that covers a planning period of between 10 and 14 years, the policy committee must submit a revised plan to Ohio EPA within three years of the date the plan was approved. For an approved plan that covers a planning period of 15 or more years, the policy committee must submit a revised plan to Ohio EPA within five years of the date the plan was approved.

C. District Overview

The SWMD for Lawrence and Scioto counties consist of large rural areas with low population density. In 2019, Scioto county reported the largest population of approximately 75,314 people and Lawrence county's population is estimated at 59,463 people. Majority of land within the SWMD is forest, pasture, or cultivated crops, with densely populated areas making up a small portion within each of the counties. This type of rural setting will influence the opportunities and barriers for the SWMD and the solid waste and recycling programs that can be available within the District.

The SWMD's role is to administer the programs in the solid waste management plan. These programs reduce the reliance on landfills through diversion. Equally important is the assurance of landfill capacity for the waste generated that is not diverted. The landscape of landfills has not changed; there is competition in the region with waste directed to multiple landfills within neighboring Ohio counties, as well as landfills in Kentucky and Indiana. This competition also is a factor for low landfill tip fees, which add to the economic challenge of recycling that is somewhat difficult to overcome.

The Lawrence-Scioto SWMD's waste management strategy is integrated with a mix of several waste management approaches for managing the waste stream: recycling, composting, and landfilling. Processing of recyclables relies on regional facilities. There is little to no competition in the region for recyclable (single stream) processing and no processing within either county. One private sector business, Rumpke, has invested considerably in recycling infrastructure within reasonable transport distance to process recyclables. There are currently four Rumpke facilities accepting recyclable material from the District. Organics processing is an infrastructure gap in both counties.

Collection services of trash are private or public sector provided, with approximately 21 haulers operating within the District. Recycling services are limited to drop off sites, with 56 full-time urban sites available and twenty rural drop-off recycling sites available within the District.

A 2109 calculated diversion rate of 18% measures below the State's 25% residential/commercial waste diversion goal. With the current strategies and opportunities mentioned within the 2023 Plan, projections show the District's diversion rate will increase slightly during the planning period but will still not reach the State's goal. The focus of the 2023 Plan will look to develop infrastructure opportunities as well as creating a culture for the residents and businesses to actively reduce, reuse and recycle. This Plan Update is planning for long-term sustainability as it addresses challenges and gaps setting in place a plan to cultivate diverting more tons within the District and adding programs to offer greater service opportunities over this next planning period.

D. Waste Reduction and Recycling Goals

As explained earlier, a SWMD must achieve goals established in the state solid waste management plan. The current state solid waste management plan is the *2020 Solid Waste Management Plan (2020 State Plan)*, adopted November 2, 2019. The 2020 State Plan established ten goals as follows:

1. The SWMD shall provide its residents and commercial businesses with access to opportunities to recycle solid waste. At a minimum, the SWMD must provide access to recycling opportunities to 80% of its residential population in each county, and ensure that commercial generators have access to adequate recycling opportunities.
2. The SWMD shall reduce and recycle at least 25% of the solid waste generated by the residential/commercial sector.
3. The SWMD shall provide the following required elements: a website; a comprehensive resource guide; an inventory of available infrastructure; and a speaker or presenter.
4. The SWMD shall provide education, outreach, marketing and technical assistance regarding reduction, recycling, composting, reuse and other alternative waste management methods to identified target audiences using best practices.
5. The SWMD shall incorporate a strategic initiative for the industrial sector into its solid waste management plan.
6. The SWMD shall provide strategies for managing scrap tires, yard waste, lead-acid batteries, household hazardous waste and obsolete/end-of-life electronic devices.
7. The SWMD shall explore how to incorporate economic incentives into source reduction and recycling programs.
8. The SWMD will use U.S. EPA's Waste Reduction Model (WARM) or an equivalent model to evaluate the impact of recycling programs on reducing greenhouse gas emissions.
9. The SWMD has the option of providing programs to develop markets for recyclable materials and the use of recycled-content materials.
10. The SWMD shall report annually to Ohio EPA regarding implementation of the SWMD's solid waste management plan.

SWMDs are encouraged but not required to demonstrate it will achieve both Goal 1 and Goal 2. Instead, SWMDs have the option of meeting either Goal 1 or Goal 2 for their solid waste management plans. This affords SWMDs with two methods of demonstrating compliance with the State's solid waste reduction and recycling goals. Many of the programs and services that a SWMD uses to achieve Goal 1 help the SWMD make progress toward achieving Goal 2 and vice versa.

A SWMD's solid waste management plan will provide programs to meet up to eight of the goals. Goal 9 (market development) is an optional goal. Goal 10 requires submitting annual reports to Ohio EPA, and no demonstration of achieving that goal is needed for the solid waste management plan.

See Chapter 5 and Appendix I for descriptions of the programs the District will use to achieve the ten goals.

CHAPTER 2 DISTRICT PROFILE

Purpose of Chapter 2 (Content in this box is authored by Ohio EPA)

This chapter provides context for the SWMD's solid waste management plan by providing an overview of general characteristics of the SWMD. Characteristics discussed in this chapter include:

- The communities and political jurisdictions within the SWMD;
- The SWMD's population in the reference year and throughout the planning period;
- The available infrastructure for managing waste and recyclable materials within the SWMD;
- The commercial businesses and institutional entities located within the SWMD;
- The industrial businesses located within the SWMD; and
- Any other characteristics that are unique to the SWMD and affect waste management within the SWMD or provide challenges to the SWMD.

Understanding these characteristics helps the policy committee make decisions about the types of programs that will most effectively address the needs of residents, businesses, and other waste generators within the SWMD's jurisdiction.

Population distribution, density, and change affect the types of recycling opportunities that make sense for a particular community and for the SWMD as a whole.

The make-up of the commercial and industrial sectors within the SWMD influences the types of wastes generated and the types of programs the SWMD provides to assist those sectors with their recycling and waste reduction efforts.

Unique circumstances, such as hosting an amusement park, a large university, or a coal burning power plant present challenges, particularly for providing waste reduction and recycling programs.

The policy committee must take into account all of these characteristics when developing its overall waste management strategy.

A. Profile of Political Jurisdictions

1. COUNTIES IN THE SOLID WASTE MANAGEMENT DISTRICT

The District was formed in February of 1989. The District is comprised of the following counties: Lawrence and Scioto. The District includes all incorporated and unincorporated territory within the member political subdivisions. A Board of Directors governs the District and is responsible for implementing the solid waste plan developed by the Policy Committee. There have been no changes in the configuration of the District since the District's first solid waste management plan was approved.

2. COUNTY OVERVIEW

Lawrence County is the southernmost county located in Ohio and is positioned just under a three-hour drive from Cincinnati, Dayton, and Columbus metro areas. The county seat is the City of Ironton, which is the largest population center and only city in the county. There are six villages and fourteen townships within the county. According to 2019 data, total population for Lawrence County is 59,463. Lawrence County is made up of majority of forest and pastureland, with Wayne National Forest taking up approximately 80% of the county's land cover. Only approximately eight percent is developed land. According to the US Census, the poverty rate in Lawrence County, Ohio has increased from 12.5% in 2014 to 14.6% in 2019³, raising higher than the Ohio state average poverty rate of 13.1% in 2019⁴.

Scioto County is located along the Ohio River in the south-central region of Ohio. The county seat is the City of Portsmouth, which is the largest population center and only city in the county. There are four villages and seventeen townships within the county. According to 2019 data, total population for Scioto County is 75,314. Scioto County is made up of majority of forest including Shawnee State Park on the western side and Wayne National Forest on the edge of the eastern side of the county. Forest and pastureland make up approximately 83% of the county's land cover. Only approximately six percent is developed land. According to the US Census, the poverty rate in Scioto County decreased slightly from 18% in 2014 to 17.8% in 2019⁵, which is still considerably higher than the Ohio state average poverty rate of 13.1% in 2019⁶.

B. Population

1. REFERENCE YEAR POPULATION

In 2018, Scioto County was the 33rd most populous county in Ohio, and Lawrence was 42nd out of 88 total counties⁷. Reference year population is taken from Ohio Development Services Agency Office of Statistical Research (ODSA, OSR). OSR provided estimate populations for 2019 based on the 2010 census data by governmental unit. Note: Ohio law requires that the entire population of a municipality located in more than one solid waste management district be added to the solid waste management district containing the largest portion of the jurisdiction's population. The District has no communities that are located in more than one solid waste management District so that no additions or subtractions were made to the population.

Table 2-1a: Population of District in the Reference Year

	Lawrence
Before Adjustment	59,463
Additions	0
Subtractions	0
After Adjustment	59,463

³ Ohio Office of Policy, Research and Strategic Planning- Ohio County Profile: Lawrence County

⁴ U.S. Census Data 2019

⁵ Ohio Office of Policy, Research and Strategic Planning- Ohio County Profile: Scioto County

⁶ U.S. Census Data 2019

⁷ Ohio Development Services Agency 2019 Ohio County Population Estimate,

<https://development.ohio.gov/files/research/P5007.pdf>

Table 2-1b: Population of District in the Reference Year

	Scioto
Before Adjustment	75,314
Additions	0
Subtractions	0
After Adjustment	75,314

2. POPULATION DISTRIBUTION

Table 2-2 shows the largest community in each county and the size of the community relative to the total population of the county. The largest community in Lawrence County is the City of Ironton, accounting for 18 percent of the County’s population. The largest community in Lawrence County is the City of Portsmouth, accounting for 27% of the County’s population.

Table 2-2 Population Distribution in the Reference Year

County		Largest Political Jurisdiction		
Name	Population	Community Name	Population	Percent of Total County Population
Lawrence	59,463	City of Ironton	10,532	17.7%
Scioto	75,314	City of Portsmouth	20,158	26.7%

Table 2-3 shows distribution of the population in cities, villages, and townships, and the distribution of the population in incorporated versus unincorporated areas. The majority of residents in each County reside in unincorporated townships, less than 30% reside in cities, and less than 15% reside in villages.

Table 2-3 Population Distribution

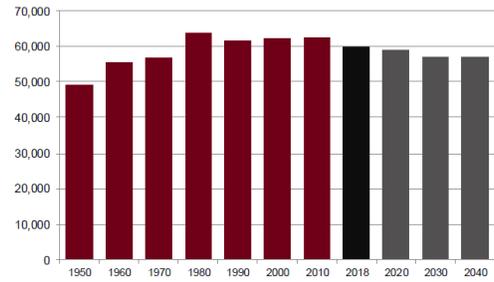
County	Percent of Population in Cities	Percent of Population in Villages	Percent of Population in Unincorporated Township
Lawrence	17.7%	12.9%	82.2%
Scioto	26.7%	4%	70.4%

3. POPULATION CHANGE

According to the Ohio Development Services Agency (ODSA), Office of Statistical Research, Lawrence County’s population grew from 1950 to 2010 then declined by 4.7% percent from 2010 to 2019. Scioto County’s population has seen a gradual decline since 1950 by approximately 9.2%. While the SWMD’s population declined, Ohio’s population grew 1.3% from the same time period of 2010 to 2019.

**Lawrence County
Total Population**

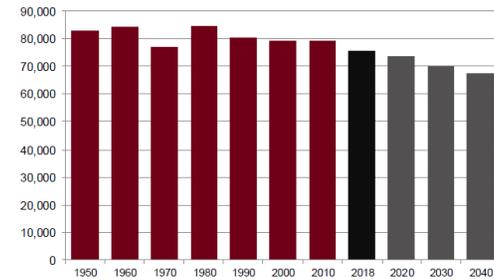
<u>Census</u>		<u>Estimated</u>	
1800		1910	39,488
1810		1920	39,540
1820	3,499	1930	44,541
1830	5,367	1940	46,705
1840	9,738	1950	49,115
1850	15,246	1960	55,438
1860	23,249	1970	56,868
1870	31,380	1980	63,849
1880	39,068	1990	61,834
1890	39,556	2000	62,319
1900	39,534	2010	62,450
		2013	61,850
		2014	61,538
		2015	60,916
		2016	60,681
		2017	60,111
		2018	59,866
		<u>Projected</u>	
		2020	59,100
		2030	57,070
		2040	57,050



Source: Ohio Development Services Agency, "Ohio County Profiles Lawrence County", 2019.

**Scioto County
Total Population**

<u>Census</u>		<u>Estimated</u>	
1800		1910	48,463
1810	3,399	1920	62,850
1820	5,750	1930	81,221
1830	8,740	1940	86,565
1840	11,192	1950	82,910
1850	18,428	1960	84,216
1860	24,297	1970	76,951
1870	29,302	1980	84,545
1880	33,511	1990	80,327
1890	35,377	2000	79,195
1900	40,981	2010	79,499
		2013	78,143
		2014	77,321
		2015	76,849
		2016	76,315
		2017	75,898
		2018	75,502
		<u>Projected</u>	
		2020	73,730
		2030	69,720
		2040	67,290



Source: Ohio Development Services Agency, "Ohio County Profiles Scioto County", 2019.

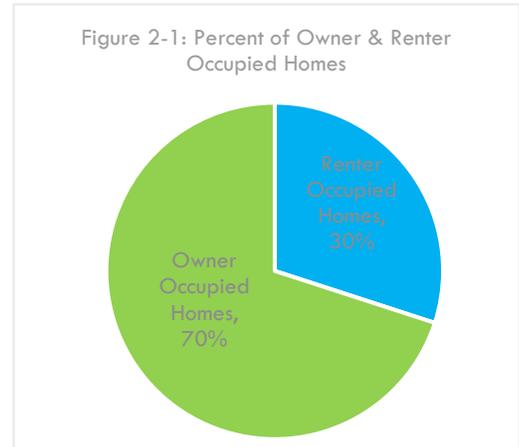
4. IMPLICATIONS FOR SOLID WASTE MANAGEMENT

The profile of the SWMD can provide key insights into solid waste management planning. Factors such as population density, housing characteristics, and poverty rates apply when assessing which programs and program structure are needed to meet residential needs for solid waste management. The SWMD sees several implications of the residential population characteristics on managing solid waste and providing recycling programs.

Looking at both county demographics the composition persons living in unincorporated townships is high (>70%). Townships embody the values of "grassroots governments". A limited government structure drives the nature of programming and direction. Township officials typically do place emphasis on levying taxes to deliver recycling services. This is the case in both Lawrence and Scioto Counties. With higher percentages of population in the townships the majority of residents are served by programs that require individual homeowners to voluntarily sign up and pay additional cost for curbside recycling. Low disposal costs in the region, higher recycling processing costs, and low recycling commodity values contribute to create more challenges to rural township recycling.

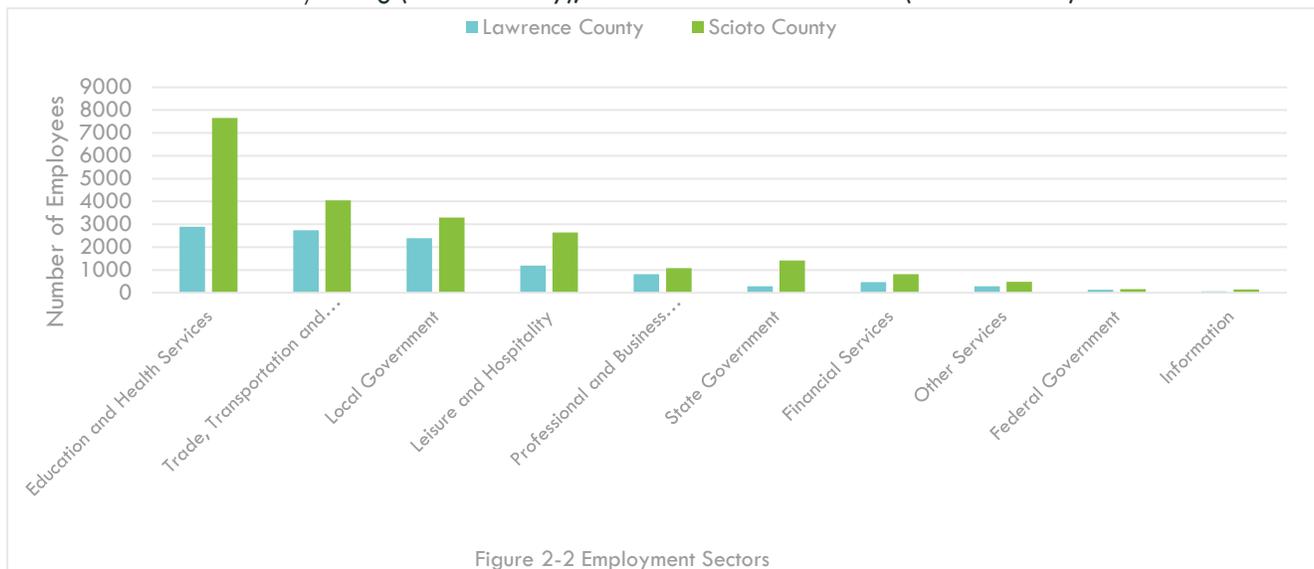
Adding to that, both counties experience poverty rates that are high. Income deprivations restrict abilities for basic services such as trash and bulky pick-up service as well as curbside recycling services. Also, Lawrence-Scioto is a rural SWMD with a population density of 126 people per square mile. Drop-off recycling is a high-valued service in the SWMD. Even so, finding site locations in the rural lower density population communities can be challenging.

There are over 62,000 housing units in the District. The majority of housing structures are single family homes (over 72 percent).⁸ Of the total housing units, approximately 30 percent are renter occupied (Figure 2-1). Renters tend to be more mobile than homeowners, and as such, it can be difficult to engage with renters around recycling programs. Due to the mobility of this demographic, frequent education and outreach is needed to encourage recycling participation.



C. Profile of Commercial and Institutional Sector

By employment trade, the top commercial and institutional sector employers are as follows: education and health services; trade, transportation and utilities; local government; and leisure and hospitality. The top employment is shown in Figure 2-2 and Table 2-4. Education and health services expanded 18% in their number of establishments from 2013 to 2018 for Scioto County and 21.8% for Lawrence County. The Leisure and hospitality sector also saw an increase in total wages from 2013 to 2018 in both counties. Lawrence County increased by 19.4% and Scioto County increased by 20.2%. Notable sectors that saw a decrease in establishments, employment and wages include Natural Resources/mining (Scioto County), and Informational Services (both Counties).



⁸ Census Reporter. American Community Survey 2018 5-year. <https://censusreporter.org/profiles/05000US39087-lawrence-county-oh/>

Table 2-4 Top Employers by Employment in Commercial and Institutional Sectors

Business	Type of Business
Big Sandy Superstores	Trade
Ironton City Schools	Government
Jo-Lin Health Center	Service
Lawrence County Government	Government
Ohio University	Government
Portsmouth City Schools	Government
Rock Hill Local Schools	Government
Scioto County Government	Government
Shawnee State University	Government
South Point Local Schools	Government

County data source: Ohio County Profiles for Lawrence County 2019, Ohio County Profiles for Scioto County 2019.

D. Profile of Industrial Sector

In 2019, Lawrence-Scioto had 291 goods-producing establishments (industrial sector), which include natural resource mining, construction, and manufacturing. While only roughly a third of the industrial sector establishments are manufacturing, it accounts for more than 80 percent of all industrial sector employment in Scioto County. The top manufacturing employers in the District are listed in Table 2-5. Manufacturing sector comprises establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into new products. The State of Ohio is a leader in manufacturing jobs, with 17% of Ohio's gross domestic product coming from manufacturing.

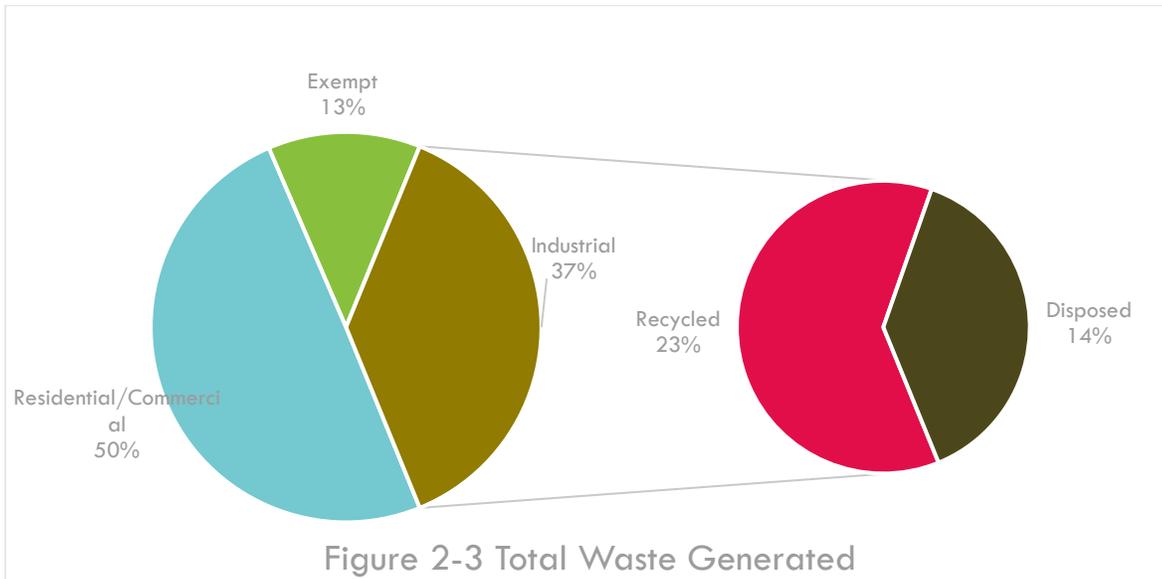
Table 2-5 Top Employers by Employment in Manufacturing Sectors

Business	Type of Business
G&J Pepsi-Cola Bottlers Inc	Manufacturing
JennMar McSweeney Inc	Manufacturing
McGinnis Inc	Manufacturing
OSCO Industries	Manufacturing
SunCoke Energy	Manufacturing
Taylor Lumber Inc	Manufacturing
Vertiv	Manufacturing

Source: Ohio County Profiles

The industrial sector in Lawrence-Scioto accounts for 26% of the total waste generated. Industries are financially responsible for implementing their own recycling programs and contracting for trash and recycling services.

Industries are financially responsible for implementing their own recycling programs and contracting for trash and recycling services. The industrial sector accounts for about 37% of the total waste generated in the District (based on 2019) and diverts 23% of its waste generated (see Figure 2-3).



E. Other Characteristics

The District has historically noticed a high rate of illegal dumping without little signs of improvement since the 2017 Pan Update. The District has not conducted public studies to ascertain why this remains an issue, but a few key areas where best practices could help:

1. Trash and bulky pick-up service. The majority of the residents in both counties live in townships where trash services are subscription based, meaning the resident or business sets up trash collection services. Affordable access to trash and recycling services should be available and ensured that everyone is subscribing for services. Policy can help ensure service for all.
2. Education. Residents should be informed about the availability of a Transfer Facility in Lawrence County for trash disposal and outlets for recycling. Education should also expand to incorporate community based social marketing.
3. Expanded diversion opportunities. The SWMD should strive for convenient high level service offering diversion infrastructure that is economical and sustainable.

CHAPTER 3 WASTE GENERATION

Purpose of Chapter 3

This chapter of the solid waste management plan provides a summary of the SWMD's historical and projected solid waste generation. The policy committee needs to understand the waste the SWMD will generate before it can make decisions regarding how to manage the waste. Thus, the policy committee analyzed the amounts and types of waste that were generated within the SWMD in the past and that could be generated in the future.

The SWMD's policy committee calculated how much solid waste was generated for the residential/commercial and industrial sectors. Residential/commercial waste is essentially municipal solid waste and is the waste that is generated by a typical community. Industrial solid waste is generated by manufacturing operations. To calculate how much waste was generated, the policy committee added the quantities of waste disposed of in landfills and reduced/recycled.

The SWMD's policy committee obtained reduction and recycling data by surveying communities, recycling service providers, collection and processing centers, commercial and industrial businesses, owners and operators of composting facilities, and other entities that recycle. Responding to a survey is voluntary, meaning that the policy committee relies upon an entity's ability and willingness to provide data. When entities do not respond to surveys, the policy committee gets only a partial picture of recycling activity. How much data the policy committee obtains has a direct effect on the SWMD's waste reduction and recycling and generation rates.

The policy committee obtained disposal data from Ohio EPA. Owners/operators of solid waste facilities submit annual reports to Ohio EPA. In these reports, owners/operators summarize the types, origins, and amounts of waste that were accepted at their facilities. Ohio EPA adjusts the reported disposal data by adding in waste disposed in out-of-state landfills.

The policy committee analyzed historic quantities of waste generated to project future waste generation. The details of this analysis are presented in Appendix G. The policy committee used the projections to make decisions on how best to manage waste and to ensure future access to adequate waste management capacity, including recycling infrastructure and disposal facilities.

A. Solid Waste Generated in Reference Year

Waste generation refers to the volume of materials that enter the waste stream before recycling, composting, landfilling or other waste management. To determine a waste generation, estimate the SWMD collected data from several sources including:

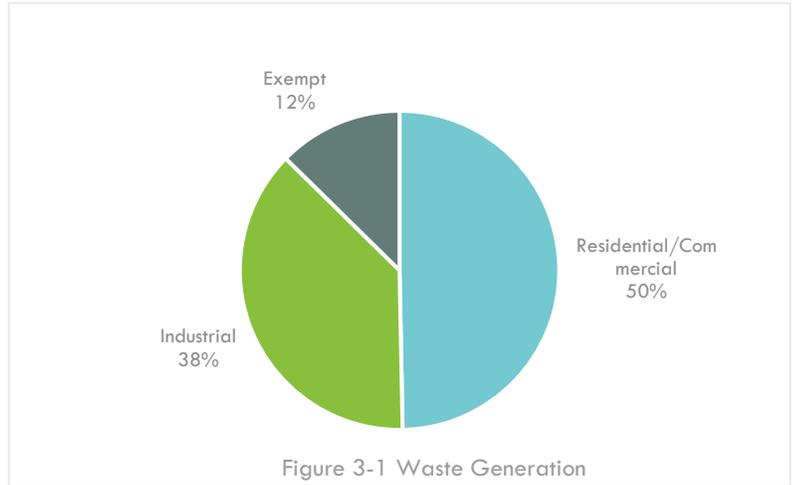
- Ohio EPA Facility Data (some facilities are required to submit annual reports to Ohio EPA)
- Surveys of commercial and industrial businesses recyclers, buybacks, brokers, and scrap dealers (these surveys are voluntary and relies on the willingness of any company to provide the data)
- Ohio EPA MRF reports (Ohio EPA collects data from commercial 'big box stores and material recovery facilities)

$$\text{Waste Generation} = \text{Wastes Disposed} + \text{Wastes Diverted}$$

In 2019, Lawrence-Scioto SWMD generated 251,815 tons of material, as shown in Table and Figure 3-1.

Table 3-1 Solid Waste Generated in the Reference Year

Type of Waste	Quantity Generated (tons)
Residential/ Commercial	125,133
Industrial	94,880
Excluded	31,802
Total	251,815



1. Residential/Commercial Waste Generated in the Reference Year

The District generated 125,133 tons of waste in the residential/commercial sector. This estimated generation indicates each person generates approximately 5.1 pounds per day. Benchmarking Lawrence-Scioto’s per capita generation shows the District’s average is below Ohio’s statewide average and District’s, which means the District is doing well relative to the state and their peers, as shown in Table 3-2. The challenge facing the SWMD is to find ways to reduce waste generation as well as characterizing landfilled waste to identify diversion methods to lower the disposal rate.

Table 3-2 Benchmark Per Capita Residential/Commercial Solid Waste

County Name	Per Capita
Belmont-Jefferson	8.24
Carroll-Columbiana-Harrison	7.95
Defiance-Fulton-Paulding-Williams	6.70
Clark	6.51
Lawrence-Scioto	5.09
Wood	4.01
Ohio Statewide	7.11

2. Industrial Waste Generated in the Reference Year

The industrial sector generated 94,880 tons of waste, accounting for approximately 38% of total waste generated in the District.

3. Excluded Waste Generated in the Reference Year

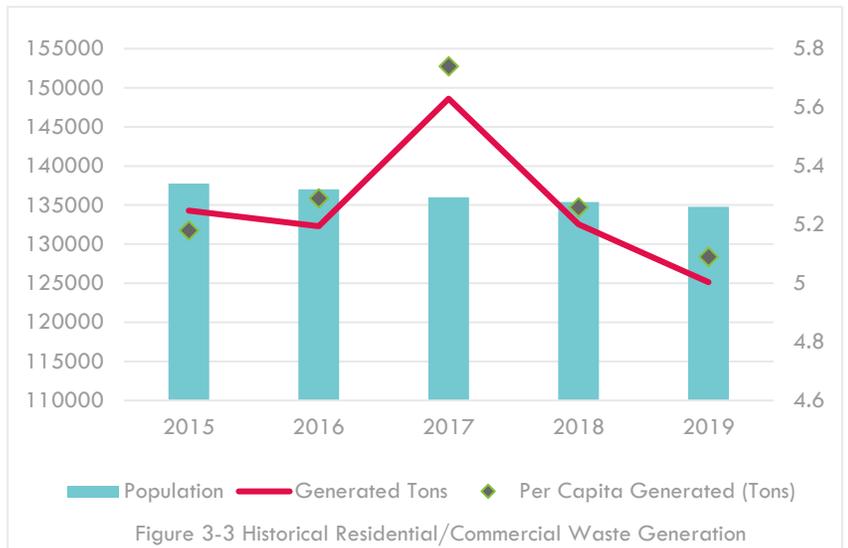
Excluded waste is waste material exempt from the definition of solid waste in ORC 3734.01. All exempt waste is also fee exempt. Ohio EPA Format 4.0 adds a threshold for exempt waste which excludes exempt waste

from calculations if it is less than 10% of total waste generated. Exempt waste for the Lawrence-Scioto District accounts for 19% of the waste generated and is considered in the analysis of this plan.

B. Historical Waste Generated

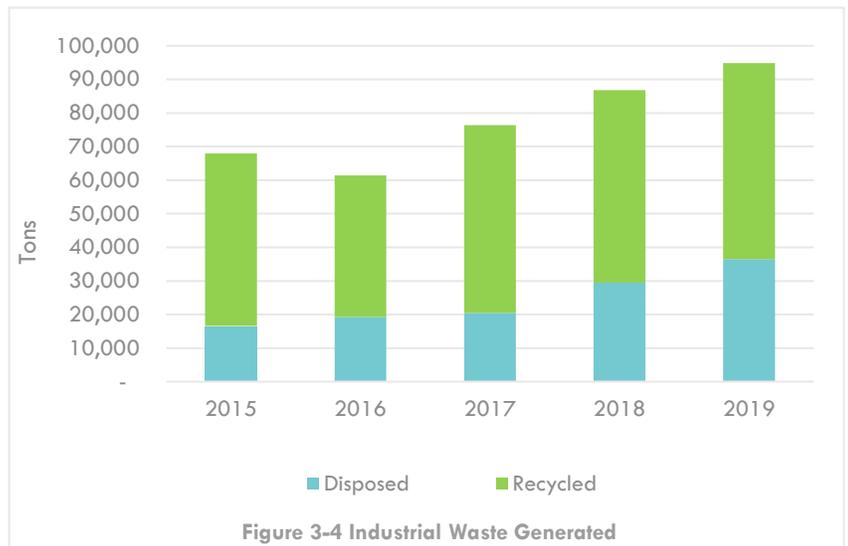
1. Historical Residential/Commercial Waste Generated

Residential/Commercial waste generation has fluctuated over the past five years. Waste generation peaked in 2017 and in 2018 declined back down to prior levels, shown in Figure 3-3. The peak in 2017 was caused by increased residential/commercial disposal tons and excluded tons. Recycling, the other part of the equation, is collected through voluntary data reporting and by nature succumbs to data fluctuations. During this time, population was relatively flat so that generation is not tracking any change in population.



2. Historical Industrial Waste Generated

Industrial generation has increased from 2015 to 2019, with a slight dip in 2016. Looking at the historical data from the past 10 years, including the reference year, 2018 and 2019 appear to be outliers. Desktop research of business economic and employment data do not indicate the SWMD had a substantial increase in industrial activity that would lead to such an increase in waste⁹. The cause of the increase could be due to reporting error or double counting. In 2019 for example, excluded waste dropped by 54% over the 2015 to 2018 average. It is possible that some normally counted excluded waste was counted as industrial waste in 2019 causing a drop in excluded waste and an uptick in industrial waste. The recycling tonnage also increased from 2015 to 2019, with a decrease in 2016 recycling tons which caused the generation total to dip. The District's industrial recycling rate was between 60-75% during the historical period.



⁹ [https://datausa.io/profile/geo/lawrence-county-oh#:~:text=The%20most%20common%20industries%20in,Retail%20Trade%20\(3%2C15%20people\)](https://datausa.io/profile/geo/lawrence-county-oh#:~:text=The%20most%20common%20industries%20in,Retail%20Trade%20(3%2C15%20people)) and <https://datausa.io/profile/geo/scioto-county-oh>

C. Waste Generation Projections

Table 3-2 presents projected waste generation for the first 6 years of the planning period.

Table 3-2 Waste Generation Projections

Year	Residential Commercial Waste	Industrial Waste	Excluded Waste	Total
	Waste (tons)	Waste (tons)	Waste (tons)	Waste (tons)
2023	124,501	95,546	69,686	289,733
2024	124,105	95,732	69,686	289,523
2025	123,712	95,919	69,686	289,317
2026	123,322	96,107	69,686	289,115
2027	122,936	96,296	69,686	288,918
2028	122,553	96,486	69,686	288,725

In the residential/commercial sector the historical and reference year data assists in forecasting waste generation. Residential and commercial waste generation is anticipated to steadily decrease throughout the planning period. This decline in generation projected is based on a slight increase in per capita generation rate so that the decrease in disposal is mainly attributed to the projected population. Diversion is projected to remain stable with the current recycling program options available to District residents.

To project the industrial sector generation, the District looked to economic indicators. Due to COVID-19 pandemic which began in the US in March 2020, predictions expected for gross domestic product are to remain steady. Taking this into consideration, the SWMD is conservatively estimating industrial sector diversion to remain stable so that industrial waste generation will increase slightly throughout the planning period.

Excluded waste disposal average from 2015-2018 is 69,686 tons, with the lowest tonnage documented at 60,000 tons. For projections, the District is not including the 2019 data in historical analysis, as it appears to be an outlier. The 2015-2018 average is projected to remain flat through the planning period.

Estimation and forecasting explanations are provided in more detail in Appendices D, E, F and G.

CHAPTER 4 WASTE MANAGEMENT

Purpose of Chapter 4 (Content in this box is authored by Ohio EPA)

Chapter 3 provided a summary of how much waste the SWMD (refers to both SWMDs and Authorities) generated in the reference year and how much waste the policy committee estimates the SWMD will generate during the planning period. This chapter summarizes the policy committee's strategy for how the SWMD will manage that waste during the planning period.

A SWMD must have access to facilities that can manage the waste the SWMD will generate. This includes landfills, transfer facilities, incinerator/waste-to-energy facilities, compost facilities, and facilities to process recyclable materials. This chapter describes the policy committee's strategy for managing the waste that will be generated within the SWMD during the planning period.

To ensure that the SWMD has access to facilities, the solid waste management plan identifies the facilities the policy committee expects will take the SWMD's trash, compost, and recyclables. Those facilities must be adequate to manage all of the SWMD's solid waste. The SWMD does not have to own or operate the identified facilities. In fact, most solid waste facilities in Ohio are owned and operated by entities other than the SWMD. Further, identified facilities can be any combination of facilities located within and outside of the SWMD (including facilities located in other states).

Although the policy committee needs to ensure that the SWMD will have access to all types of needed facilities, Ohio law emphasizes access to disposal capacity. In the solid waste management plan, the policy committee must demonstrate that the SWMD will have access to enough landfill capacity for all of the waste the SWMD will need to dispose of. If there isn't adequate landfill capacity, then the policy committee develops a strategy for obtaining adequate capacity.

Ohio has more than 30 years of remaining landfill capacity. That is more than enough capacity to dispose of all of Ohio's waste. However, landfills are not distributed equally around the state. Therefore, there is still the potential for a regional shortage of available landfill capacity, particularly if an existing landfill closes. If that happens, then the SWMDs in that region would likely rely on transfer facilities to get waste to an existing landfill instead of building a new landfill.

Finally, SWMD has the ability to control which landfill and transfer facilities can, and by extension cannot, accept waste that was generated within the SWMD. The SWMD accomplishes this by designating solid waste facilities (often referred to flow control). A SWMD's authority to designated facilities is explained in more detail later in this chapter.

A. Waste Management Overview

Lawrence Scioto SWMD manages waste through a combination of landfills, recycling programs and facilities, transfer stations, and composting facilities. Figure 4-1 depicts total waste generation management in the reference year. More than 70% of the waste generated is diverted— meaning the majority of generation is being recycled or composted.

Table 4-1 presents projected waste generation for the first 6 years of the planning period. The District is expecting slight growth in recycling and composting and a slight decline in landfilling.

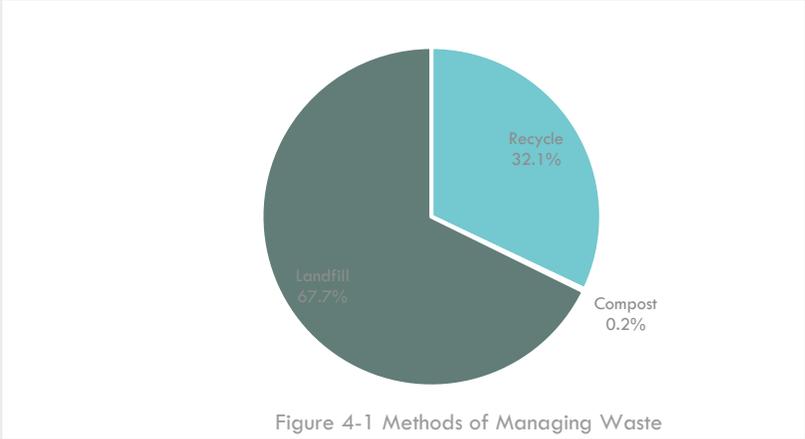


Table 4-1 Methods for Managing Waste Projections

Year	Generate ¹	Recycle ²	Compost ³	Transfer ⁴	Landfill ⁵
2019	280,795	80,705	576	28,980	170,535
2023	289,733	81,508	576	35,287	207,649
2024	289,523	81,483	576	35,255	207,464
2025	289,317	81,460	576	35,224	207,281
2026	289,115	81,439	576	35,193	207,101
2027	288,918	81,420	576	35,163	206,922
2028	288,725	81,403	576	35,133	206,747

Source:

¹Reference Year Appendix Table G-1 and Projections Table G-2

²Reference Year Appendix Table E-5 and Projections Table K-3 subtracting compost

³Reference Year Appendix Table B-5 and Projections Table E-7

⁴Reference Year Appendix Table D-2 and Projections Table D-5

⁵Reference Year Appendix Table D-3 and Projections Table D-5

Includes exempt waste and Landfill column includes Transfer waste.

Sample Calculation:

Generate = Recycle + Compost + Landfill

B. Profile of Waste Management Infrastructure

This next section identifies waste management infrastructure and identifies gaps and needs to handle the expected growth.

1. Landfill Facilities

A wide variety of wastes are disposed in municipal solid waste landfills and includes waste generated from households, commercial businesses, institutions, and industrial plants. In addition, asbestos (if permitted to do so), construction and demolition debris, dewatered sludge, contaminated soil, and incinerator ash may also be disposed in municipal solid waste landfills. Industrial waste includes excluded wastes and are classified as slag, uncontaminated earth, non-toxic fly ash, spend non-toxic foundry sand and material from mining, construction, or demolition operations.

Public, private haulers or self-haul provide waste collection service in the SWMD. Waste flows to landfills either by direct haul or through a transfer facility. Direct hauled waste is disposed in in-state and out-of-state landfill facilities.

Waste is either direct hauled or transferred to a landfill. About one-third, 35%, of the residential/commercial solid waste direct hauled for disposal was hauled to in-state landfills. The rest of the residential/commercial was hauled out of state to Kentucky landfills to the facilities Boyd County Sanitary Landfill, 27%, and Green Valley Landfill, 38%.

2. Transfer Facilities

Transfer facilities are conveniently located where solid waste, delivered by collection companies and residents, is consolidated, temporarily stored, and loaded into semi-trailers for transport. Solid waste is then delivered to a processing facility or disposal site. In cases where waste is hauled from a transfer facility to a landfill, the county of origin is not recorded at the landfill. This means a load of trash disposed in a landfill from a transfer facility could have waste mixed from several counties. When a transfer facility hauls to more than one landfill, it becomes difficult to track which landfill received a county's waste. For planning purposes, the waste hauled through transfer facilities is listed separately identifying possible destination landfills.

Approximately 17% of the SWMD's waste was transferred (Figure 4-3). The vast majority of the waste transferred was from the residential/commercial sector during the reference year, less than 1% came from the industrial sector or was excluded waste.

3. Composting Facilities

The City of Portsmouth is the only political jurisdiction providing yard waste management options for its residents. The City provides curbside collection of leaves seasonally. According to data collected by Ohio EPA for licensed and registered compost facilities, there were no composting facilities within the District.

4. Processing Facilities

Four facilities reported receiving the District recyclable materials. All four are owned by Rumpke. Rumpke's facilities in Columbus and Hamilton County are material recovery facilities (MRF). The other facilities are transfer or consolidation of recyclables to transport to one of the two MRFs.

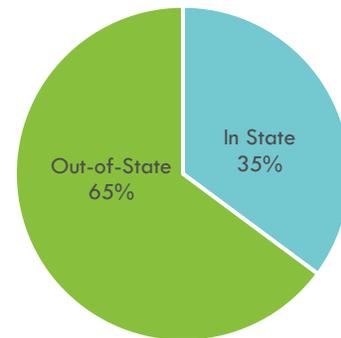


Figure 4-2 Residential/Commercial Direct Hauled Landfill Disposal

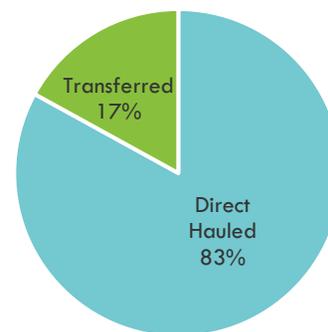


Figure 4-3 Disposal Management Methods

C. Solid Waste Facilities Used in the Reference Year

1. Landfill Facilities

Table 4-2 lists the landfills receiving waste from Lawrence-Scioto in the reference year, which is direct hauled, i.e., not transferred through a transfer facility.

Table 4-2 Landfill Facilities Used by the District in the Reference Year (2019 Direct Hauled)

Facility Name	Location		Waste Accepted from SWMD (tons)	Percent of all SWMD Waste Disposed	Remaining Capacity (years)
	County	State			
In-District					
none		Ohio		0%	
Out-of-District					
Pine Grove Regional Facility	Fairfield	OH	3	0%	11
Gallia County Landfill	Gallia	OH	1	0%	3
Beech Hollow Landfill	Jackson	OH	2,156	2%	86
Suburban Landfill Inc	Perry	OH	2	0%	16
Pike Sanitation Landfill	Pike	OH	56,980	40%	31
Out-of-State					
Misc. Facilities		IN	4	0%	n/a
Boyd County Sanitary Landfill		KY	28,460	20%	133
Green Valley Landfill		KY	53,950	38%	78
Total			141,555	100%	358

Source: "Analytics Solid Waste Flows to Landfills and Incinerators in Ohio" Table 14 Appendix D, Table D-1
 Sample Calculations: Residential/Commercial + Industrial + Excluded = Total

2. Transfer Facilities

Table 4-3 lists the transfer facilities receiving waste from Lawrence-Scioto in the reference year before landfilling.

Table 4-3 Transfer Facilities Used by the District in the Reference Year (2019)

Facility Name	Location		Waste Accepted from District (tons)	Percent of all District Waste Transferred	Landfill Where Waste was Taken to be Disposed
	County	State			
In-District					
Rumpke Waste Inc Lawrence County Transfer Facility	Lawrence	Ohio	13,152	45%	Pike
Portsmouth Solid Waste Transfer Facility	Scioto	Ohio	15,421	53%	Pike
Out-of-District					
Cleveland Transfer / Recycling Station	Cuyahoga	Ohio	4	0%	American Landfill Inc
Rumpke Waste Inc Chillicothe Recycling & Transfer Station	Ross	Ohio	2	0%	Pike
Waste Management of Ohio - Chillicothe	Ross	Ohio	401	1%	Suburban
Out-of-State					
None					

Facility Name	Location		Waste Accepted from District (tons)	Percent of all District Waste Transferred	Landfill Where Waste was Taken to be Disposed
	County	State			
Total			4,418	100%	0

Source: "2019 Ohio Facility Data Report Tables". Ohio EPA.

Appendix D, Table D-2

Sample Calculations: Residential/Commercial + Industrial + Excluded = Total

3. Incinerator Facilities

Table 4-4 lists the incinerator facilities receiving materials from Lawrence-Scioto in the reference year.

Table 4-4 Incinerator Facilities Used by the District in the Reference Year (2019)

Facility Name	Facility Type	Location		Total (tons)
		County	State	
none				
Total				

4. Composting Facilities

Table 4-5 lists the permitted composting facilities receiving materials from Lawrence-Scioto in the reference year.

Table 4-5 Compost Facilities Used by the District in the Reference Year (2019)

Facility Name	Location (County)	Material Composted (tons)	Percent of all Material Composted
In District			
none			
Out-of-District			
none			0%
Total		2,699	100%

Source:

Appendix B, Table B-5

5. Processing Facilities

Table 4-6 lists the processing facilities receiving materials from Lawrence-Scioto in the reference year.

Table 4-6 Processing Facilities Used by the District in the Reference Year (2019)

Name of Facility	Location		Facility Type	Recyclables Accepted from District (tons)
	County	State		
In-District				
Rumpke Recycling Ironton	Lawrence	OH	Transfer Station	1,796

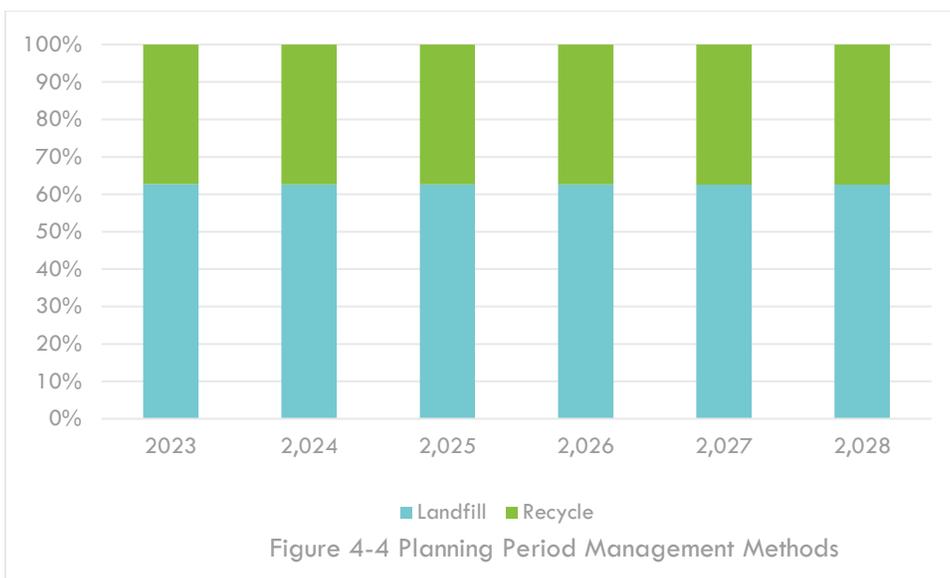
Name of Facility	Location		Facility Type	Recyclables Accepted from District (tons)
	County	State		
Out-of-District				
Rumpke Waste Recycling - Columbus	Franklin	OH	Single Stream MRF	11
Rumpke Center City Recycling - Hamilton County	Hamilton	OH	Single Stream MRF	3,541
Rumpke - Chillicothe	Ross	OH	Buyback, transfer and baling	1
Out-of-State				
None				
Total				5,348

Source:
Appendix B, Table B-7

D. Use of Solid Waste Facilities During the Planning Period

The District continues to support an open market for the collection, transport, and disposal of solid waste. There is sufficient access to municipal solid waste landfill capacity for the planning period and access to transfer facilities to manage waste. Landfill capacity remains abundant and exceeds available volume of waste generated locally.

Lawrence Scioto is not expecting changes in the management of waste through the planning period. Following historical trends, the planning period expects waste to be similarly managed as shown in Figure 4-4. Lawrence Scioto does not expect any changes to the recyclable processing facilities or flows to processing facilities during the planning period. Additional capacity is not needed.



E. Siting Strategy

(Content in this box is authored by Ohio EPA)

As explained earlier, the solid waste management plan must demonstrate that the SWMD will have access to enough capacity at landfill facilities to accept all of the waste the SWMD will need to dispose of during the planning period. If existing facilities cannot provide that capacity, then the policy committee must develop a plan for obtaining additional disposal capacity.

Although unlikely, the policy committee can conclude that it is in the SWMD's best interest to construct a new solid waste landfill facility to secure disposal capacity. In that situation, Ohio law requires the policy committee to develop a strategy for identifying a suitable location for the facility. That requirement is found in Ohio Revised Code Section 3734.53(A)(8). This strategy is referred to as a siting strategy. The policy committee must include its siting strategy in the solid waste management plan. The siting strategy is located in Appendix S.

The District will rely upon the Ohio EPA siting strategy contained in Ohio Administrative Code 3745-27, 3745-30, and 3745-37 as well as other available siting criteria guidance from Ohio EPA's Southwest District Office.

F. Designation

Purpose of Designation (Content in this box is authored by Ohio EPA)

Ohio law gives each SWMD (refers to both SWMDs and Authorities) the ability to control where waste generated from within the SWMD can be taken. Such control is generally referred to as flow control. In Ohio, SWMDs establish flow control by designating facilities. SWMDs can designate any type of solid waste facility, including recycling, transfer, and landfill facilities.

Even though a SWMD has the legal right to designate, it cannot do so until the policy committee specifically conveys that authority to the board of directors. The policy committee does this through a solid waste management plan. If it wants the SWMD to have the ability to designate facilities, then the policy committee includes a clear statement in the solid waste management plan giving the designation authority to the board of directors. The policy committee can also prevent the board of directors from designating facilities by withholding that authority in the solid waste management plan.

Even if the policy committee grants the board of directors the authority to designate in a solid waste management plan, the board of directors decides whether or not to act on that authority. If it chooses to use its authority to designate facilities, then the board of directors must follow the process that is prescribed in ORC Section 343.014. If it chooses not to designate facilities, then the board of directors simply takes no action.

Once the board of directors designates facilities, only designated facilities can take the SWMD's waste. That means, no one can legally take waste from the SWMD to undesignated facilities and undesignated facilities cannot legally accept waste from the SWMD. The only exception is in a situation where, the board of directors grants a waiver to allow an undesignated facility to take the SWMD's waste. Ohio law prescribes the criteria that the board must consider when deciding whether to grant a waiver and how long the board has to make a decision on a waiver request.

If the board of directors designates facilities, then the next section will provide a summary of the designation process and Table 4-6 will list currently designated facilities.

1. Description of the SWMD’s Designation Process

The District is planning to designate facilities to which waste generated in the District must be taken. However, the District reserves the right to establish facility designations in accordance with Section 343.013, 343.014 and 343.015 of the Ohio Revised Code with respect to both in-state and out-of-state facilities. In addition, facility designation will be established and governed by applicable district rules.

The District is authorized to designate solid waste management facilities. If the Board elects to designate facilities, the following waiver process must be followed by any person, municipal corporation, township or other entity that wishes to deliver waste to a solid waste facility not designated by the District.

In the event that any person, municipal corporation, township or other entity requests permission to use a facility, other than a designated facility, for the disposal of solid waste generated within the District, the entity must submit a written request for a waiver of designation to the Board. The request must contain the following information:

- a. Identification of the persons, municipal corporation, township or other entity requesting the waiver;
- b. Identification of the generators(s) of the solid waste for which the waiver is requested;
- c. Identification of the type and quantity (in tons per year) of solid waste for which the waiver is requested;
- d. Identification of the time period(s) for which the waiver is requested;
- e. Identification of the disposal facility(s) to be used if the waiver is granted;
- f. If the solid waste is to be disposed in an Ohio landfill, a letter from the solid waste management district where the solid waste will be disposed, acknowledging that the activity is consistent with that district's current plan;
- g. An estimate of the financial impact to the District that would occur with issuance of the requested waiver; and
- h. An explanation of the reason(s) for requesting the waiver.

Upon receipt of the written request containing all of the information listed above, the District staff will review it and may request additional information necessary to conduct its review. The Board shall act on a waiver request within ninety days following receipt of the request. The Board may grant the request for a waiver only if the Board determines that:

- a. Issuance of the waiver is not inconsistent with projections contained in the District's approved Plan Update under Section 3734.53 (A)(6) and (A)(7) of the Ohio Revised Code;
- b. Issuance of the waiver will not adversely affect implementation and financing of the District's approved Plan Update; and
- c. The entity is willing to enter into an agreement requiring the payment of a waiver fee to the District.

2. List of Designated Facilities

There are no facilities currently designated.

CHAPTER 5 WASTE REDUCTION AND RECYCLING

Purpose of Chapter 5

As was explained in Chapter 1, a SWMD (refers to SWMDs and Authorities) must have programs and services to achieve reduction and recycling goals established in the state solid waste management plan. A SWMD also ensures that there are programs and services available to meet local needs. The SWMD may directly provide some of these programs and services, may rely on private companies and non-profit organizations to provide programs and services, and may act as an intermediary between the entity providing the program or service and the party receiving the program or service.

Between achieving the goals of the state plan and meeting local needs, the SWMD needs to ensure that a wide variety of stakeholders have access to reduction and recycling programs. These stakeholders include residents, businesses, institutions, schools, and community leaders. These programs and services collectively represent the SWMD's strategy for furthering reduction and recycling in its member counties.

Before deciding on the programs and services that are necessary and will be provided, the policy committee (board of trustees for an Authority) performed a strategic, in-depth review of the SWMD's existing programs and services, recycling infrastructure, recovery efforts, finances, and overall expectations. This review consisted of a series of 14 analyses that allowed the policy committee to obtain a holistic understanding of the SWMD by answering questions such as:

- Is the SWMD adequately serving all waste generating sectors?
- Is the SWMD recovering high volume wastes such as yard waste and cardboard?
- How well is the SWMD's recycling infrastructure being used/how well is it performing?
- What is the SWMD's financial situation and ability to fund programs?

Using what it learned, the policy committee drew conclusions about the SWMD's abilities, strengths and weaknesses, operations, existing programs and services, outstanding needs, available resources, etc. The policy committee then compiled a list of actions the SWMD could take, programs the SWMD could implement, or other things the SWMD could do to address its conclusions. The policy committee used that list to make decisions about the programs and services that will be available in the SWMD during the upcoming planning period.

After deciding on programs and services, the policy committee projected the quantities of recyclable materials that would be collected through those programs and services. This in turn allowed the policy committee to project its waste reduction and recycling rates for both the residential/commercial sector and the industrial sector (See Appendix E for the residential/commercial sector and Appendix F for the industrial sector).

A. Solid Waste Management District Priorities

Priority areas to focus efforts in the 2023 Plan include:

Priority Program	Priority Area
Drop-off Program	Expand to add glass. Strategize drop-off locations to optimize volume and cost savings – right size service.
ReUse Corridor Partnership	Setting a goal to be active in the ReUse Corridor.
CHaRM	Open two centers for hard to recycle materials, one in Lawrence County and the other in Scioto County, called CHaRM.
Recycle740	Rebrand, increase recovery outreach campaign

B. Program Descriptions

This section briefly describes major programs and services available during the planning period. Appendix I contains complete descriptions.

1. Residential Recycling Programs

Curbside Recycling Services

The District does not haul curbside recycling or waste services.

Drop-off Recycling Locations

The District does not haul drop-off recycling services.

Table 5-2 Drop-off Recycling Locations

ID	Name	Start Date	End Date	Goal
Full-Time Urban Drop-off – Lawrence County				
FTU1	County Fairgrounds (Co Rd 411, Proctorville)	ongoing	ongoing	1 and 2
FTU2	Food Fair (409 Solida Rd, South Point)	ongoing	ongoing	1 and 2
FTU3	Chesapeake Municipal Court (Co Rd 1, Chesapeake)	ongoing	ongoing	1 and 2
FTU4	Lawrence County Educational Service Center (304 North 2 nd Street, Ironton)	ongoing	ongoing	1 and 2
FTU5	Kroger Plaza (6232 Co Rd 107, Proctorville)	ongoing	ongoing	1 and 2
FTU6	Ohio University Campus (1804 Liberty Ave., Ironton)	ongoing	ongoing	1 and 2
FTU7	Paul Porter Park (221 Lane Street, Coal Grove)	ongoing	ongoing	1 and 2
FTU8	Perry Township Volunteer Fire Department Sheridan (Co Rd 1, Sheridan)	ongoing	2019	1 and 2
FTU9	Rome Trustees Building (9666 St Rt 7, Rome)	ongoing	ongoing	1 and 2
FTU10	Food Fair (7604 St Rt 7, Proctorville)	ongoing	ongoing	1 and 2
FTU11	Burlington-Fayette Fire Department (7681 County Road 1, Burlington)	ongoing	ongoing	1 and 2
FTU12	Ironton City Center (301 South 3 rd St, Ironton)	ongoing	ongoing	1 and 2
Full-Time Urban Drop-off – Scioto County				

FTU13	Valley Methodist Church (4720 Old Scioto Trail, Portsmouth)	ongoing	ongoing	1 and 2
FTU14	Village Hall of New Boston (3980 Rhodes Ave, New Boston)	ongoing	ongoing	1 and 2
FTU15	Barbour Auto Parts (915 11 th St, Portsmouth)	ongoing	ongoing	1 and 2
FTU16	Chevron (109 St Rt 522, Wheelersburg)	ongoing	ongoing	1 and 2
FTU17	Earl Thomas Conley Park (15888 St Rt 52, West Portsmouth)	ongoing	ongoing	1 and 2
FTU18	Kroger (9101 Ohio River Rd, Wheelersburg)	ongoing	ongoing	1 and 2
FTU19	Lowe's (7915 Ohio River Rd, Wheelersburg)	ongoing	ongoing	1 and 2
FTU20	Portsmouth Square (1600-1700 11 th St, Portsmouth)	ongoing	ongoing	1 and 2
FTU21	SOMC Friends Center Lot (17 th & Oak St, Portsmouth)	ongoing	ongoing	1 and 2
FTU22	Scioto County Courthouse (607 7 th St, Portsmouth)	ongoing	ongoing	1 and 2
FTU23	Portsmouth City Hall	ongoing	ongoing	1 and 2

ID	Name	Start Date	End Date	Goal
Full-Time Rural Drop-off – Lawrence County				
FTR1	Wayne National Forest (6518 St Rt 93, Pedro)	ongoing	ongoing	1 and 2
Full-Time Rural Drop-off – Scioto County				
FTR2	IGA (8348 St Rt 335, Minford)	ongoing	ongoing	1 and 2
FTR3	Bloom Vernon High School (10529 Main Street, Minford)	ongoing	ongoing	1 and 2
FTR4	Nile Trustees Building (12215 US 52 West Portsmouth)	ongoing	ongoing	1 and 2
FTR5	Senior Center (144 Gervais Rd, Franklin Furnace)			
FTR6	Valley Township Fire Department (219 Beechwood Ave, Lucasville)	ongoing	ongoing	1 and 2
FTR7	Super Quik (1051 Galena Pike, West Portsmouth)	ongoing	ongoing	1 and 2
FTR8	Westside IGA (2335 Galena Pike, West Portsmouth)			

Drop-off recycling locations are convenient, easy to use, and available 24/7.

Materials accepted include plastic bottles and jugs, metal cans, and paper. Commingled recyclables, i.e. all materials in same container. The SWMD will be exploring adding glass bottles and jars to the drop-off program.

2. Other Residential Recycling Programs

Name	Description
<i>Subscription Curbside Recycling</i>	This strategy intends to engage the City of Ironton and Portsmouth City Managers to discuss options, challenges and potential solutions to developing curbside recycling through a series of meetings.

Name	Description
<i>Drop-off Location Monitoring</i>	Strategize drop-off locations to optimize volume and cost savings – right size service.

Name	Description
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<i>Drop-off Program Operation</i>	On-going program success litter supervisor & crew maintain cleanliness of container locations.
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Name	Description
<i>Drop-off Program Signage Improvement</i>	Assess the signage needs of each site and either install signs that are visible from the street or install signs at the actual drop-off site.

Name	Description
<i>ReUse Corridor Partnership</i>	Be active in the ReUse Corridor by collecting materials to send for aggregation and processing and help to develop processing infrastructure within the SWMD.

3. Commercial/Institutional Sector Reduction and Recycling Programs

These programs are programs directly provided by District staff.

Name	Description
<i>Commercial Technical Assistance</i>	Available to implement and assist with recycling program establishment, growth in awareness, and assist with program implementation.

Name	Description
<i>Waste Assessment & Audits</i>	The District will provide free waste audits or waste assessments to commercial or industrial businesses.

Name	Description
<i>Drop-off Sites for Government Agencies</i>	On-going recycling containers placed in areas close to both Courthouses, Municipal Court Buildings, City Halls, and Village Halls. These containers will also be assessed for right-size services.

Name	Description
<i>School Recycling</i>	Provision of recycling collection containers from the SWMD to establish recycling programs.

4. Industrial Sector Reduction and Recycling Programs

Name	Description
<i>Industrial Technical Assistance</i>	The District is available to assist and promote recycling activity to industrial businesses.

Name	Description
<i>Waste Assessment & Audits</i>	The District will provide free waste audits or waste assessments to commercial or industrial businesses.

Name	Description
<i>Commercial and Industrial Business Surveys</i>	Annual survey of recycling activities.

5. *Restricted/Difficult to Manage Wastes*

Name	Description
<i>CHaRM (Center for Hard to Recycle Materials)</i>	CHaRM is a collection drop-off for hard to recycle materials. The SWMD will locate a CHaRM facility in each county. Residents may bring acceptable materials (list will be maintained on the webpage) and target: HHW, Electronics, Scrap Tires, Lead-Acid Batteries, Document Shredding

Name	Description
<i>Drug take-back Collection</i>	Annual drug take-back event in each county with the local Sheriff's Department.

Name	Description
<i>Yard Waste Management</i>	The SWMD will keep an inventory of the registered compost facilities in the SWMD.

6. *Funding/Grants/Economic Incentives/Market Development*

Name	Description
<i>Tire Amnesty Grant</i>	The District will seek Tire Grants from Ohio EPA.

Name	Description
<i>KAB Cleanup Grant</i>	The District will seek KAB Cleanup Grant.

7. *Open Dumping/Litter Enforcement*

Name	Description
<i>Environmental Enforcement Officer</i>	The District provides funding for a full-time Environmental Officer to investigate and prosecute environmental crimes such as open dumping and littering.

Name	Description
<i>Partnership with Law Enforcement</i>	Coordination between the Environmental Officer and local law enforcement.

8. Open Dump/tire dump cleanup

Name	Description
<i>Community Clean-up</i>	The District provides funding and assists with a variety of community clean-up initiatives.

Name	Description
<i>Litter Control Crew</i>	The SWMD has two crews, one per each county, that operates daily (Monday-Friday) for litter collection.

Name	Description
<i>Recycling Litter Trailer</i>	The District maintains a recycling and litter trailer that is stocked with a variety of tools, equipment, and supplies needed to complete a clean-up or beautification project.

Name	Description
<i>Sponsor-A-Site</i>	The Sponsor-A-Site program is a clean-up program available to any business, church, civic group or scout group within Lawrence or Scioto counties.

Name	Description
<i>Scrap Tire Abatement</i>	The District utilizes Ohio EPA's Consensual Scrap Tire Removal Agreement, which is funded through the State's scrap tire fund, to manage illegally dumped tires throughout Lawrence and Scioto counties.

Name	Description
<i>Program Improvements/Revisions</i>	Public-private partnerships can work together to provide infrastructure related utilities such as solid waste successful arrangements. Opportunities are open and may include (but not limited to) options such as procuring containers, developing and procuring education materials, organics diversion, food waste reduction, recycling or waste reduction technologies. Cardboard, single stream, or food waste are examples of materials that may be targeted with this activity.

9. Outreach, Education, Awareness, and Technical Assistance

Minimum education requirements prescribed by Goal 3:

- District maintains a website at www.lsswmd.org
- District's webpage serves as a resource guide.

- Solid Waste Management Plan and website serve as an infrastructure inventory.
- District staff are available for presentations.

Supplying information and seeking behavior changes is the central objective for the District’s outreach and marketing. The District will employ various collateral and promotions. The key is to integrate communication such that promotional efforts are effective with the marketing activities. Incorporating the strategies and best practices described below provides a multi-layered, multi-faceted marketing and outreach strategy. Flyers, ads, postcards, print/digital advertisements, etc. are all District branded with consistent recognizable look that ties the resident/business back to the District. The following table lists the education/outreach programs.

Education/Outreach Program	Target Audience				
	Residents	Schools	Industries	Institutions and Commercial Businesses	Communities and Elected Officials
Website	X	X	X	X	X
Advertisements and Promotional Item Distribution	X	X	X	X	X
Caught Green Handed Contest	X				
Countywide Curbside Recycling Promotion	X				X
School Classroom Presentations		X			
Illegal Dumping Campaign	X				X
Recycle740	X	X	X	X	X

Name	Description
Advertisements and Promotional Item Distribution	The SWMD will use various media to reinforce messaging. All advertisements and marketing collateral will be developed and branded with SWMD logo, colors and fonts to create and reinforce brand identity.

Name	Description
Social Media Outreach	The SWMD uses Facebook as social media outlet to regularly post information about SWMD events. The SWMD will use postings to drive traffic to the webpage. The type of posts to Facebook will also direct residents to social norms of recycling, composting, and reducing waste.

Name	Description
Caught Green Handed Contest	“Caught Green Handed” promotes the act of recycling with recognition and awards. For a period of four weeks, the SWMD will visit the recycling drop-off locations to “catch” someone recycling. Those “caught” will be photographed and given recycled content prizes

Name	Description
Countywide Curbside Recycling Promotion	This outreach targets local governmental/community officials to develop recycling infrastructure.

Name	Description
School Classroom Presentations	The SWMD is available for presentations to school-age students on recycling, litter prevention, and other solid waste related issues.

Name	Description
Illegal Dumping Campaign	To understand the reasons behind littering and open dumping in the community the SWMD will gather research directly from the people living in the communities, political stakeholders, and experts. After gathering the research to be more effective the SWMD will employ community based social marketing principles for behavior change.

OUTREACH PRIORITY –

Name	Start Date	End Date	Goal
Outreach Priority – Recycle740	2023	Ongoing	4

As part of an effort to position the SWMD as a trusted partner and community resource, the SWMD will refresh the brand. Re-freshening the brand and updating the website will be the first steps the SWMD begins. Steps include a new logo, adopting a new color palette, fonts, appearances, and possibly adding a tag line. As an organization's major graphical representation, a logo anchors a company's brand and becomes the single most visible manifestation of the company. For this reason, a well-designed logo is an essential part of any company's overall marketing strategy.

Multi-layered and multi-faceted means various marketing materials, approaches, and collateral are used. If the SWMD re-brands, then all materials should be updated, and additional collateral developed. **Flyers, ads, postcards,** etc. should be re-branded and have a consistent recognizable look that ties the resident back to the SWMD. Flyer best practices include:

- Limited text with a visible call for action, typically to visit the website for more information.
- Colors consistent with the branding of the SWMD.
- Images that tell the story and compliment the call for action.
- Layout should be easy for the eyes to flow between images and content without overwhelming the user with additional repetitive text.

Flyers designed as a hand-out should include content information that is more static and doesn't change frequently. Including a QR code on a flyer can lead the intended party to a website with the updated information.

The **website** needs to be updated to reflect any branding refresh. The website is an incredible resource of information and needs to have the most up-to-date information on programs, services, and how to properly manage solid waste.

- Education/Outreach – Setting several goals 1) change behavior and cultural of citizens to move beyond “take, make, waste” system 2) increase materials recovered per capita 3) decrease contamination at drop-offs 4) enhance take-back retailers, reuse centers, food donation and food bank infrastructure
 - Develop an outreach plan to achieve each of the 4 goals identified above.
 - Develop a resource guide to donating.
 - Add available outlets for diverting materials on the SWMD website.
 - Enhance SWMD social media outreach.

CHAPTER 6 BUDGET

Purpose of Chapter 6

Ohio Revised Code Section 3734.53(B) requires a solid waste management plan to present a budget. This budget accounts for how the SWMD will obtain money to pay for operating the SWMD and how the SWMD will spend that money. For revenue, the solid waste management plan identifies the sources of funding the SWMD will use to implement its approved solid waste management plan. The plan also provides estimates of how much revenue the SWMD expects to receive from each source. For expenses, the solid waste management plan identifies the programs the SWMD intends to fund during the planning period and estimates how much the SWMD will spend on each program. The plan must also demonstrate that planned expenses will be made in accordance with ten allowable uses that are prescribed in ORC Section 3734.57(G).

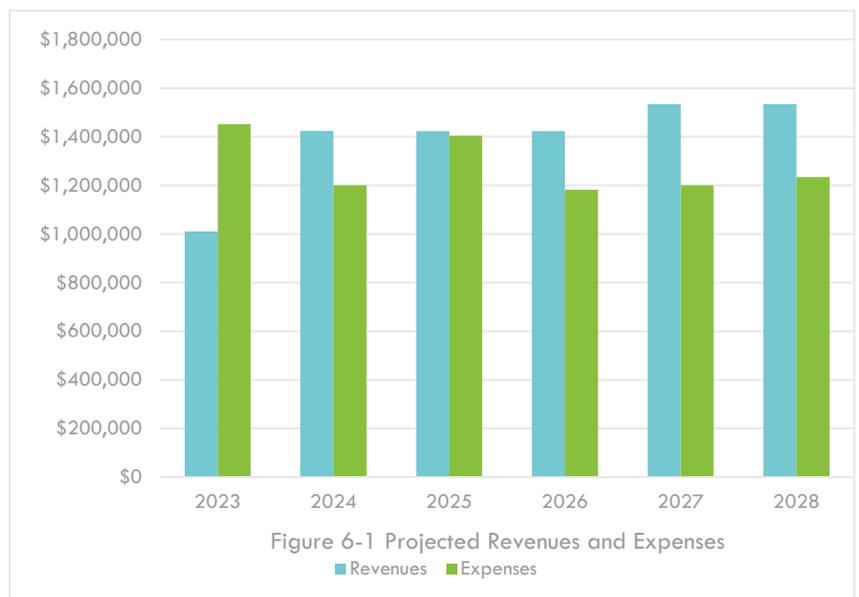
Ultimately, the solid waste management plan must demonstrate that the SWMD will have adequate money to implement the approved solid waste management plan. The plan does this by providing annual projections for revenues, expenses, and cash balances.

If projections show that the SWMD will not have enough money to pay for all planned expenses or if the SWMD has reason to believe that uncertain circumstances could change its future financial position, then the plan must demonstrate how the SWMD will balance its budget. This can be done by increasing revenues, decreasing expenses, or some combination of both.

This chapter of the solid waste management plan provides an overview of the SWMD's budget. Detailed information about the budget is provided in Appendix O.

A. Overview of SWMD's Budget

The activities and services described in Chapter 5 are supported through rates and charges and planned (to begin 2024) designation fees. The District projects to receive an annual average of \$1.4 million in revenues over the first six years of the planning period (2023-2028). The first six years of District expenses are projected to average an annual of \$1.3 million. The District is projecting capital expenses early in the planning period for equipment and facility space.



B. Revenue

Overview of How Solid Waste Management Districts Earn Revenue

There are a number of mechanisms SWMDs can use to raise the revenue necessary to finance their solid waste management plans. Two of the most commonly used mechanisms are disposal fees and generation fees.

Before a SWMD can collect a generation or disposal fee it must first obtain approval from local communities through a ratification process. Ratification allows communities in the SWMD to vote on whether they support levying the proposed fee.

Disposal Fees (See Ohio Revised Code Section 3734.57(B))

Disposal fees are collected on each ton of solid waste that is disposed at landfills in the levying SWMD. There are three components, or tiers, to the fee. The tiers correspond to where waste came from – in-district, out-of-district, and out-of-state. In-district waste is solid waste generated by counties within the SWMD and disposed at landfills in that SWMD. Out-of-district waste is solid waste generated in Ohio counties that are not part of the SWMD and disposed at landfills in the SWMD. Out-of-state waste is solid waste generated in other states and disposed at landfills in the SWMD.

Ohio's law prescribes the following limits on disposal fees:

- The in-district fee must be at least \$1.00 and no more than \$2.00;
- The out-of-district fee must be at least \$2.00 and no more than \$4.00; and
- The out-of-state fee must be equal to the in-district fee.

Generation Fees (see Ohio Revised Code Section 3734.573)

Generation Fees are collected on each ton of solid waste that is generated within the levying SWMD and accepted at either a transfer facility or landfill located in Ohio. The fee is collected at the first facility that accepts the SWMD's waste. There are no minimum or maximum limits on the per ton amount for generation fees.

Rates and Charges (see Ohio Revised Code Section 343.08)

The board of directors can collect money for a SWMD through what are called rates and charges. The board can require anyone that receives solid waste services from the SWMD to pay for those services.

Contracts (see Ohio Revised Code Sections 343.02 and 343.03)

The board of directors can enter into contracts with owners/operators of solid waste facilities or transporters of solid waste to collect generation or disposal fees on behalf of a SWMD.

Other Sources of Revenue

There are a variety of other sources that SWMDs can use to earn revenue. Some of these sources include:

- Revenue from the sale of recyclable materials;
- User fees (such as fees charged to participate in scrap tire and appliance collections);
- County contributions (such as from the general revenue fund or revenues from publicly-operated solid waste facilities (i.e., landfills, transfer facilities));
- Interest earned on cash balances;
- Grants;
- Debt; and
- Bonds.

1. Disposal Fee

The SWMD does not have active operating landfills within the SWMD boundaries and does plan to have operating landfills in the SWMD's borders. Revenues are not collected and will not be collected from disposal fees at this time or during the planning period. However, the SWMD has set in accordance with ORC Section 3734.53(B), its disposal fees at \$1.25 per ton for waste generated in-district and out-of-state, and \$2.50 per ton for waste generated out-of-district.

2. Generation Fee

The District does not receive revenues from generation fees.

3. Fees collected via Designation Agreements

In accordance with Ohio Revised Code 343.014, a solid waste management district may adopt designation fees to assure adequate financing to implement the approved solid waste plan. The SWMD does not currently have designation fees. The SWMD is establishing a per ton contract fee of \$3.00 to begin in 2024. A revenue of just over \$400,000 is anticipated annually.

4. Other Funding Mechanisms Reimbursements

- a. Rates and Charges - In order to maintain its programs and services, the SWMD is planning step increases to the annual charge on each improved parcel. The charge per improved parcel was \$16.00 in 2018. The step increase schedule is as follows: \$18 in 2023, \$20 in 2027, and \$22 in 2031.
- b. Donations: Donations are received by the District's County Court systems. The Court donates funding to offset some of the District's costs for programs involving solid waste law enforcement, litter abatement, and community service programs for legal offenders.
- c. Grants: Grant funding is competitive and not guaranteed. Two grants were awarded in 2014, due to the timing related to the disbursement of grants, one of the grants was actually received in 2015. The grants were for the Recycling/Litter Trailer and one was to purchase surveillance cameras to catch illegal dumpers. The revenue from this source is not stable from year to year and the SWMD does not project receiving any reimbursement revenue during the planning period.
- d. Reimbursements: The SWMD receives revenue from reimbursements from time to time. The revenue from this source is not stable from year to year and the SWMD does not project receiving any reimbursement revenue during the planning period.
- e. Other: Miscellaneous monies resulting from worker's compensation refunds, various rebates, Bureau of Workers Compensation refunds, vehicle sale, etc. The revenue from this source is not stable from year to year and the SWMD does not project receiving any reimbursement revenue during the planning period.

Table 6-1 shows the projected revenues for the first six years of the planning period

Table 6-1 Summary of Revenue

Year	Designation Fees	Rates and Charges	Other Revenue	Total Revenue
2019	\$0	\$852,937	\$1,752	\$854,688
2023	\$0	\$1,010,466	\$0	\$1,010,466
2024	\$413,335	\$1,010,466	\$0	\$1,423,801
2025	\$412,786	\$1,010,466	\$0	\$1,423,252
2026	\$412,244	\$1,010,466	\$0	\$1,422,710
2027	\$411,710	\$1,122,740	\$0	\$1,534,450
2028	\$411,183	\$1,122,740	\$0	\$1,533,923

Source(s) of Information:
 Year 2019 sourced from Quarterly Fee Reports
 Planning period years sourced from Appendix O
 Sample Calculations:
 Total Revenue = Generation Fes + Other Revenue

C. Expenses

Overview of How Solid Waste Management Districts Spend Money

Ohio law authorizes SWMDs to spend revenue on 10 specified purposes (often referred to as the 10 allowable uses). All of the uses are directly related to managing solid waste or for dealing with the effects of hosting a solid waste facility. The 10 uses are as follows:

1. Preparing, monitoring, and reviewing implementation of a solid waste management plan.
2. Implementing the approved solid waste management plan.
3. Financial assistance to approved boards of health to enforce Ohio’s solid waste laws and regulations.
4. Financial assistance to counties for the added costs of hosting a solid waste facility.
5. Sampling public or private wells on properties adjacent to a solid waste facility.
6. Inspecting solid wastes generated outside of Ohio and disposed within the SWMD.
7. Financial assistance to boards of health for enforcing open burning and open dumping laws, and to law enforcement agencies for enforcing anti-littering laws and ordinances.
8. Financial assistance to approved boards of health for operator certification training.
9. Financial assistance to municipal corporations and townships for the added costs of hosting a solid waste facility that is not a landfill.
10. Financial assistance to communities adjacent to and affected by a publicly-owned landfill when those communities are not located within the SWMD or do not host the landfill.

In most cases, the majority of a SWMD’s budget is used to implement the approved solid waste management plan (allowable use 2). There are many types of expenses that a solid waste management district incurs to implement a solid waste management plan. Examples include:

- salaries and benefits;
- purchasing and operating equipment (such as collection vehicles and drop-off containers);
- operating facilities (such as recycling centers, solid waste transfer facilities, and composting facilities);
- offering collection programs (such as for yard waste and scrap tires);

- providing outreach and education;
- providing services; and
- paying for community clean-up programs.

Table 6-2 summarizes the types of expenses the District expects for implementation of this Plan Update. Detailed information regarding expenses is provided in Appendix O.

Table 6-2 Summary of Expenses

Expense Category	Year						
	Reference	Planning Period					
	2019	2023	2024	2025	2026	2027	2028
Plan Monitoring/Preparation	\$0	\$0	\$9,000	\$0	\$34,090	\$9,000	\$0
District Administration	\$452,081	\$556,391	\$524,827	\$570,253	\$589,365	\$609,156	\$629,651
Recycling Collection	\$266,608	\$368,563	\$379,620	\$391,009	\$402,739	\$414,821	\$427,266
Facility Operation	\$0	\$300,000	\$20,000	\$320,000	\$20,000	\$20,000	\$20,000
Special Collections	\$0	\$49,554	\$58,695	\$71,044	\$81,788	\$91,440	\$101,104
Education/Awareness	\$5,868	\$22,096	\$17,298	\$17,790	\$18,295	\$18,815	\$19,350
Dump Clean Up	\$31,802	\$150,853	\$160,853	\$30,853	\$31,730	\$32,632	\$33,560
Other	\$24,474	\$4,000	\$30,000	\$4,000	\$4,000	\$4,000	\$4,000
Total Expenses	\$780,832	\$1,451,458	\$1,200,293	\$1,404,948	\$1,182,008	\$1,199,865	\$1,234,931

Source(s) of Information:
 Year 2019 sourced from Quarterly Fee Reports
 Planning period years sourced from Appendix O
 Sample Calculations:
 Total Expenses = sum of expenses category

D. Budget Summary

Table 6-3 Budget Summary

Year	Revenue	Expenses	Net Difference	Ending Balance
Reference Year				
2019	\$854,688	\$780,832	\$73,856	\$679,893
Planning Period				
2023	\$1,010,466	\$1,451,458	(\$440,992)	\$432,921
2024	\$1,423,801	\$1,200,293	\$223,508	\$656,429
2025	\$1,423,252	\$1,404,948	\$18,304	\$674,733
2026	\$1,422,710	\$1,182,008	\$240,702	\$915,436
2027	\$1,534,450	\$1,199,865	\$334,585	\$1,250,021
2028	\$1,533,923	\$1,234,931	\$298,993	\$1,549,014

Source(s) of Information:
 Year 2019 sourced from Quarterly Fee Reports
 Planning period years sourced from Appendix O
 Sample Calculations:
 Net Difference = Revenue – Expenses
 Ending Balance = Net Difference + Previous Year Ending Balance

E. Major Facility Project

Purpose of a Budget for a Major Facility Project

SWMDs can own and operate solid waste management facilities, and a number already do. Other SWMDs include feasibility studies or strategies to build new or make renovations to existing facilities in their solid waste management plans.

The types of facilities solid waste management districts own and operate include landfills, transfer facilities, material recovery facilities, recycling centers, household hazardous waste collection centers, and composting facilities.

Solid waste facilities represent major financial undertakings that can result in substantial capital investments along with ongoing operating costs. For this reason, when the policy committee decides that the SWMD will develop a new or make extensive renovations to an existing solid waste management facility, the solid waste management plan provides a specific budget for that facility.

This chapter of the solid waste management plan provides a summary of the SWMD's major facility budget. The full details of the budget are provided in Section D of Appendix O.

To create better opportunities for both Scioto and Lawrence County residents, the SWMD is planning to purchase and own a property in each county. The intent is to develop a comprehensive drop-off recycling center in each county, also known as a CHaRM center. Both locations will be functional with an office, garage, and storage space. Staggering the purchase of the properties allows for better use of SWMD resources (staff and finances) as well as time to work through the operational mechanics. The budget projects 2023 and 2025 as the two years for property to be purchased. The budget for this planning period projects the following facility costs and size considerations.

Purchase Costs:

Lawrence County- \$300,000

Scioto County - \$300,000

APPENDIX A MISCELLANEOUS INFORMATION

Appendix A establishes the reference year used for this plan update, planning period, goal statement, material change in circumstances and explanations of differences in data.

A. Reference Year

The reference year for this solid waste management plan is 2019.

B. Planning Period

The planning period for this solid waste management plan is 2023 to 2037.

C. Goal Statement

The District will achieve the following Goal:

Goal 1: The SWMD shall provide its residents and commercial businesses with access to opportunities to recycle solid waste. At a minimum, the SWMD must provide access to recycling opportunities to 80% of its residential population in each county and ensure that commercial generators have access to adequate recycling opportunities.

D. Explanations of differences between data previously reported and data used in the solid waste management plan

- a. Differences in quantities of materials recovered between the annual district report and the solid waste management plan.

The reported waste disposal for the 2019 annual district report differs from this solid waste management plan. The data in the annual district report does not reflect the 82,413 tons of waste disposed in out-of-state landfills.

Facility Name	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Misc. Facilities	IN	2	1		4
Boyd County Sanitary Landfill	KY	19,977	8,482	0	28,460
Green Valley Landfill	KY	27,545	21,611	4,794	53,950
TOTAL		47,525	30,095	4,794	82,413

The reported recycling for the 2019 annual district report differs from the recycling from this solid waste management plan due to minor typing errors and elimination of doubling counting issues in the solid waste plan.

Material	2019 ADR (Tons)	Solid Waste Plan (Tons)	Reason for Difference
Residential and Commercial			
Used Motor Oil	5.33	5.83	Minor Typo in ADR
Scrap Tires	1,551.96	1,354.65	Removal of double counting from ADR tons
Food	579.00	579.64	Minor Typo in ADR

Ferrous	9,014.65	9,125.50	Typo on ADR
Corrugated Cardboard	5,023.19	5,023.91	Minor Typo in ADR
All Other Paper	2,659.47	2,665.97	Typo on ADR
Commingled Recycling	3,547.50	1,650.85	Removal of double counting from ADR tons
Other (Aggregate)	0.12	3.38	ADR omitting counting of the Christmas Tree Recycling Program that is not captured in the Ohio EPA Compost Report.
TOTAL	24,773.12	22,913.22	Adjustments and removal of double counting
Industrial			
Rubber	73.50	73.00	Minor Typo in ADR
Flue Gas Disulfurization	48,249.00	48,249.32	Minor Typo in ADR

b. Differences in financial information reported in quarterly fee reports and the financial data used in the solid waste management plan.

None.

E. Material Change in Circumstances/Contingencies

Ohio law, ORC Section 3734.56 (D), requires district plans to be updated when the District Board of Directors determine that circumstances are materially changed from those addressed in the approved plan. If a plan update is required due to a material change in circumstances, the plan update must address those portions of the plan that need to be modified due to change.

A plan amendment involving fees or designation that does not require modification of any other part of the plan requires ratification, but not Ohio Environmental Protection Agency approval. However, if any other portion of the plan is modified, the entire plan must be updated. Moreover, the updated plan must be ratified, submitted to Ohio EPA, and obtain Ohio EPA's approval prior to becoming effective.

1. Determination Criteria Used for Evaluation:

In determining when a material change has occurred, the Board of Directors will consider the following:

- a. As assessment of changes in waste generation;
- b. Capacity for disposal, transfer, composting, and management for restricted waste streams;
- c. Strategies for waste reduction and/or recycling;
- d. Substantial changes in the availability of waste reduction and recycling opportunities available to District residents;
- e. The availability of revenues for plan implementation;
- f. Procedures to be followed for plan implementation;
- g. Timetable for implementation of programs and/or activities;
- h. Facility designations and the flow of waste. (The addition or remove of a facility from the designated list of facilities need not be a material change, unless capacity availability, revenues for plan implementation or program availability is adversely affected.); and
- i. Any other factor that the Board considers relevant.

2. Monitoring Program:

The criteria listed above will be evaluated on the basis of the District Policy Committee's annual review of the approved plan, and/or information obtained through the District's monitoring program. The staff monitoring program includes the following:

- Quarterly analysis of District revenues.
- Analysis of information acquired by District staff for preparation of the District's Annual Report.
- Information acquired by District staff through follow-up investigations of citizen complaints which indicate the existence of deviations from or noncompliance with the District plan.
- Analysis of information voluntarily provided to the District staff by state or local officials and employees, or owners and operators of solid waste collection, disposal, transfer, or recycling operations, which indicate the existence of deviations from and/or noncompliance with the District's Plan.

3. Timetable for Making the "Material" Change Determination

- The Policy Committee or the District's staff will immediately notify the Board of Directors of any reliable information that is likely to establish that a significant or substantial change in circumstances has occurred from the District's approved plan.
- Within ten (10) days from receipt of notification from the Policy Committee or District staff that there may be a material change of circumstances, the Board of Directors will request the District staff to prepare a Draft Report which discusses the effects that the changed circumstances (identified in the notice to the Board of Directors) using the determination criteria above.
- The District staff shall prepare the Draft Report and submit it to the Board of Directors within thirty (30) days of the Board's request.
- Within ten (10) days after the receipt of the District staff's Draft Report, the Board of Directors will determine whether additional information is necessary for the Board of Directors to determine whether a material change has occurred.
- If the Board of Directors determines that additional information is required, the District staff will revise the Draft Report to include such additional information as necessary and submit its Final Report within twenty (20) days from the Board of Directors' request for additional information.
- Within sixty (60) days after the Board's receipt of the District staff's Final Report, the Board of Directors will make a determination of whether the changed circumstances are material pursuant to the Determination Criteria listed above. During the sixty-day period, the Board of Directors may obtain such information from sources other than the District staff as the Board deems necessary and proper to making its determination of whether a material change has occurred.
- Upon the Board of Directors' determination that a material change has occurred, the Board of Directors shall notify the Policy Committee, in writing, within ten (10) days of the Board's determination. The Board's notification shall request the District Policy Committee to prepare a draft amended solid waste plan, pursuant to ORC Section 3734.56(D), that may be affected directly or indirectly by the material change.

APPENDIX B RECYCLING INFRASTRUCTURE INVENTORY

Appendix B provides an inventory of the recycling infrastructure that existed in the reference year. This inventory covers residential curbside collection services, drop-off recycling sites, mixed waste materials recovery facilities, waste companies providing recycling collection and trash collection services and composting facilities and yard waste management programs.

A. Curbside Recycling Services, Drop-off Recycling Locations, and Mixed Solid Waste Materials Recovery Facilities

1. Curbside Recycling Services

Table B-1a: Inventory of Non-Subscription Curbside Recycling Services Available in the Reference Year

ID #	Name of Curbside Service	Service Provider	County	How Service is Provided	Collection Frequency	Materials Collected	Type of Collection	PAYT (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
None	None									
Total									0	

Source: 2019 District data

No local jurisdictions have curbside recycling programs in the reference year.

Table B-1b: Inventory of Subscription Curbside Recycling Services Available in the Reference Year

ID #	Name of Curbside Service	County	How Service is Provided	Collection Frequency	Materials	Type of Collection	PAYT (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)	
None	None									
Total									0	

Source: 2019 District data

No local jurisdictions have subscription curbside recycling programs in the reference year.

2. Drop-Off Recycling Locations

Table B-2a: Inventory of Full Time, Urban Drop-off Sites Available in the Reference Year

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ^{Error! Bookmark not defined.}	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
FTU1	County Fairgrounds (Co Rd 411, Proctorville)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU2	Food Fair (409 Solida Rd, South Point)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU3	Chesapeake Municipal Court (Co Rd 1, Chesapeake)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU4	Lawrence County Educational Service Center (304 North 2 nd Street, Ironton)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU5	Kroger Plaza (6232 Co Rd 107, Proctorville)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU6	Ohio University Campus (1804 Liberty Ave., Ironton)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU7	Paul Porter Park (221 Lane Street, Coal Grove)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU8	Perry Township Volunteer Fire Department Sheridan (Co Rd 1, Sheridan)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	N

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ^{Error! Bookmark not defined.}	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
FTU9	Rome Trustees Building (9666 St Rt 7, Rome)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU10	Food Fair (7604 St Rt 7, Proctorville)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU11	Fayette Twp Trustees Building (Co Rd 1, Burlington) – CHANGED TO Burlington-Fayette Fire Department (7681 County Road 1, Burlington)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU12	Ironton City Center (301 South 3 rd St, Ironton)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU13	Valley Methodist Church (4720 Old Scioto Trail, Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU14	Village Hall of New Boston (3980 Rhodes Ave, New Boston)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU15	Barbour Auto Parts (915 11 th St, Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ^{Error! Bookmark not defined.}	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
FTU16	Chevron (109 St Rt 522, Wheelersburg)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU17	Earl Thomas Conley Park (15888 St Rt 52, West Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU18	Kroger (9101 Ohio River Rd, Wheelersburg)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU19	Lowes (7915 Ohio River Rd, Wheelersburg)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU20	Portsmouth Square (1600-1700 11 th St, Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU21	SOMC Friends Center Lot (17 th & Oak St, Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU22	Scioto County Courthouse (607 7 th St, Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTU23	Portsmouth City Hall (728 Second St)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ^{Error! Bookmark not defined.}	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
Total								1,566 ¹⁰	

¹⁰Paper includes: Newspaper, Cardboard, Other Paper, Office Paper, Junk Mail. Metal includes steel and aluminum cans.

²Data is 2019 sourced from District.

Table B-2b: Inventory of Part-Time, Urban Drop-off Sites Available in the Reference Year

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU1	None								
Total								0	

Table B-2c: Inventory of Full-Time, Rural Drop-off Sites Available in the Reference Year

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
FTR1	Wayne National Forest (6518 St Rt 93, Pedro)	Rumpke	Lawrence	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTR2	IGA (8348 St Rt 335, Minford)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTR3	Bloom Vernon High School (10529 Main Street, Minford)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTR4	Nile Trustees Building (12215 US 52 West Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y

¹⁰ Tonnage includes drop-off recycling at FTU and FTR sites within the District.

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
FTR5	Senior Center (144 Gervais Rd, Franklin Furnace)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTR6	Valley Township Fire Department (219 Beechwood Ave, Lucasville)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTR7	Super Quik (1051 Galena Pike, West Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
FTR8	Westside IGA (2335 Galena Pike, West Portsmouth)	Rumpke	Scioto	Contract with private sector service provider	24hrs, 7days/week	Metal, Plastic bottles and jugs, Paper, Cardboard, Cartons	Y	Not tracked per location	Y
Total								Included in FTU tonnage	

¹Paper includes: Newspaper, Cardboard, Other Paper, Office Paper, Junk Mail. Metal includes steel and aluminum cans.
²Data is 2019 sourced from District.

Table B-2d: Inventory of Part-Time, Rural Drop-off Sites Available in the Reference Year

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ^{Error! Bookmark not defined.}	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
None	None								
Total								0	

3. Mixed Municipal Solid Waste Material Recovery Facility

Table B-3: Mixed Municipal Solid Waste Material Recovery Facility

Name of Material Recovery Facility	Location (County, City)	Communities Served	Types of Materials Recovered	Weight of Materials Recovered (tons)	Waste Processed (tons)	Bypass Waste (tons)	Total Waste (tons)	Recovery Rate in Reference Year (percent)
None							0	0

A mixed solid waste materials recovery facility provides residents with access to recycling opportunities by removing recyclables from the trash for the residents. The District does not use a mixed waste material recovery facility (aka dirty MRF) to separate recyclables from trash.

B. Curbside Recycling and Trash Collection Service Providers

Table B-4: Inventory Curbside Recycling and Trash Collection Service Providers in the Reference Year

Name of Provider	Counties Served	Trash Collection Services				Curbside Recycling Services		
		PAYT (Y/N)	Residential	Commercial	Industrial	Residential	Commercial	Industrial
All Tech (aka Republic Services)	Ironton, Pedro, Scioto County	N	X					
Republic	Lawrence County	N	X	X	X		X	X
D&K Sanitation	Ironton	N	X					
Hart Sanitation	Lawrence County	N		X				
Fuller Waste	Proctorville	N	X					
Collection Services Inc.	Chesapeake, Proctorville	N	X					
Mountain State Waste	South Point, Chesapeake	N	X	X	X			
On-Time Garbage (aka Rumpke)	Lawrence and Scioto County	N	X	X	X			
Buckeye Sanitation	Scottown, Proctorville, Chesapeake	N	X					
Skaggs Garbage	Pedro, Kitts Hill, Deering	N	X					
Elkins Waste Services (aka Rumpke)	Lawrence and Scioto County	N	X	X	X			
Dickess Garbage	Lawrence County	N	X	X				
Get Er Done	Ironton, Coal Grove	N	X					
ZJ-Bee's Enterprises	Lawrence County	N	X	X				
Rumpke	Lawrence and Scioto County	N	X	X	X		X	X
Shawnee Sanitation (aka Rumpke)	Lawrence and Scioto County	N	X	X				
Waste Management	Lawrence and Scioto County	N	X	X	X		X	X
Gahm Sanitation	Scioto, Lawrence	N	X	X	X			
City of Portsmouth	Portsmouth	N	X	X	X			
City of Ironton	Ironton	N	X	X				
CJW	Scioto County	N	X					

Source: 2021 web and desktop research

There is a total of 21 haulers operating in the District. Since the 2016 Plan, 2 haulers are new and 11 haulers are no longer operating. A gap in hauling is the collection of recyclables.

C. Composting Facilities

Table B-5: Inventory of Compost Facilities Used in the Reference Year

Facility Name	Compost Facility Classification	Publicly Accessible (Y/N)	Location	Food Waste (tons)	Yard Waste (tons)	Total
None				0	0	0
Total				0	0	0

Source: 2019 Ohio EPA Compost Facility Planning Analytical Report

Yard waste is a valuable organic material and when diverted from the landfill has beneficial use such as soil conditioners, erosion control, etc. To better understand the landscape of yard waste programs, a web search of each political jurisdiction was conducted. The City of Portsmouth is the only political jurisdiction providing yard waste management options for its residents. The City provides curbside collection of leaves seasonally.

Facility information for the licensed and registered compost facilities that accepted food and yard waste during the reference year was obtained from Ohio EPA.

D. Other Food Waste and Yard Waste Management Programs

Table B-6: Inventory of Other Food and Yard Waste Management Activities Used in the Reference Year

Facility or Activity Name	Activity Type	Location	Food Waste (tons)	Yard Waste (tons)
Hauler/Grocer Food Waste Data	Collection, Commercial	Lawrence	379	0
Hauler/Grocer Food Waste Data	Collection, Commercial	Scioto	196	0
Total			576	0

Source: 2019 Ohio EPA Compost Facility Planning Analytical Report

Hauler/Grocer food waste diverted was obtained from Ohio EPA.

E. Material Handling Facilities Used by the SWMD in the Reference Year

Table B-7: Inventory of Material Handling Facilities Used in the Reference Year

Facility Name	County	State	Type of Facility	Weight of Material Accepted from SWMD (tons)
Rumpke Waste Recycling - Columbus	Franklin	Ohio	Single Stream MRF	11
Rumpke Center City Recycling - Hamilton County	Hamilton	Ohio	Single Stream MRF	3,541
Rumpke Recycling	Lawrence	Ohio	Transfer Station	1,796
Rumpke - Chillicothe	Ross	Ohio	Buyback, transfer and baling	1
Total				5,348

Source: Ohio's Material Recovery Facilities", Ohio EPA, January 25, 2019
 Material Recovery Facility and Commercial Recycling Data", Ohio EPA, June 19, 2020.
 Note: SS = single stream, MS = multi stream, MRF = material recovery facility

Four facilities reported receiving the District recyclable materials. All four are owned by Rumpke. Rumpke's facilities in Columbus and Hamilton County are material recovery facilities (MRF). The other facilities are transfer or consolidation of recyclables to transport to one of the two MRFs.

APPENDIX C POPULATION DATA

A. Reference Year Population

Table C-1a: Reference Year Population Adjustments

	Lawrence
Before Adjustment	59,463
Additions	0
Subtractions	0
After Adjustment	59,463

Source: "2019 Ohio County Population Estimates" prepared by Ohio Development Services Agency, Office of Research

Table C-1 b: Reference Year Population Adjustments

	Scioto
Before Adjustment	75,314
Additions	0
Subtractions	0
After Adjustment	75,314

Source: "2019 Ohio County Population Estimates" prepared by Ohio Development Services Agency, Office of Research

Table C-1b: Total Reference Year Population

Unadjusted Population	Adjusted Population
134,777	134,777

Reference year population is taken from Ohio Development Services Agency Office of Statistical Research (ODSA, OSR). OSR provided estimate populations for 2019 based on the 2010 census data by governmental unit. Note: Ohio law requires that the entire population of a municipality located in more than one solid waste management district be added to the solid waste management district containing the largest portion of the jurisdiction's population. The District has no communities that are located in more than one solid waste management District so that no additions or subtractions were made to the population.

B. Population Projections

Table C-2: Population Projections

Year	Lawrence	Scioto	Total District
2019	59,463	75,314	134,777
2020	59,329	74,950	134,279
2021	59,195	74,588	133,783
2022	59,061	74,227	133,288
2023	58,927	73,869	132,796
2024	58,794	73,512	132,306

Year	Lawrence	Scioto	Total District
2025	58,662	73,157	131,818
2026	58,529	72,803	131,332
2027	58,397	72,451	130,848
2028	58,265	72,101	130,366
2029	58,133	71,753	129,886
2030	58,002	71,406	129,408
2031	57,871	71,061	128,932
2032	57,740	70,718	128,458
2033	57,610	70,376	127,986
2034	57,480	70,036	127,516
2035	57,350	69,698	127,047
2036	57,220	69,361	126,581
2037	57,091	69,026	126,116

Source: Office of Research, Ohio Development Services Agency, "2019 Population Estimates by County, City, Villages and Township", May 2020
Sample Calculations:

Projected population in Lawrence 2020 = 59,329
Projected population in Lawrence 2030 = 58,002
Annual population change in Lawrence = $(59,329 - 58,002) / 59,329 = -0.2\%$
Projected population in Scioto 2020 = 74,950
Projected population in Scioto 2030 = 71,406
Annual population change in Scioto = $(71,406 - 74,950) / 74,950 = -0.5\%$

Projections of population through the planning period are based on the latest population projections from the Ohio Development Services Agency (ODSA), Office of Statistical Research. The ODSA Planning Research and Strategic Planning Office provided year 2010 census data and projected estimates for 2015, 2020, 2025, 2030, 2035, and 2040. To determine population estimates between these years, straight-line interpolation was used.

Population projections gauge future demand for services, but in projection calculations there are room for errors due to the difficulty associated with forecasting. As projected by ODSA, population is expected to decline in Lawrence County by 0.2% annually and in Scioto County by 0.5% annually.

APPENDIX D DISPOSAL DATA

Appendix D provides an inventory of where waste was managed in the reference year, 2019, calculates the total waste disposed in the reference year, analyzes historical waste disposal quantities, and projects waste to be disposed.

A. Reference Year Waste Disposed

Table D-1a: Waste Disposed in Reference Year – Publicly Available Landfills (Direct Haul)¹

Facility Name	Location		Waste Accepted from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Pine Grove Regional Facility	Fairfield	OH	0	0	3	3
Gallia County Landfill	Gallia	OH	0	0	1	1
Beech Hollow Landfill	Jackson	OH	828	1,323	5	2,156
Suburban Landfill Inc	Perry	OH	0	2	0	2
Pike Sanitation Landfill	Pike	OH	24,945	5,091	26,944	56,980
Misc. Facilities	Unk.	IN	2	1	0	4
Boyd County Sanitary Landfill	Boyd	KY	19,977	8,482	0	28,460
Green Valley Landfill	Boyd	KY	27,545	21,611	4,794	53,950
Total			73,298	36,510	31,747	141,555

¹ The facilities listed in Table D-1 a and identified as able to accept waste from the SWMD (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).

Excluded wastes are classified as slag, uncontaminated earth, non-toxic fly ash, spend non-toxic foundry sand and material from mining, construction, or demolition operations.

Source:

Source(s) of Information: Ohio EPA 2019 Ohio Facility Data Report Tables.

Sample Calculations: Residential/Commercial + Industrial + Excluded = Total

A wide variety of wastes are disposed in municipal solid waste landfills and includes waste generated from households, commercial businesses, institutions, and industrial plants. In addition, asbestos (if permitted to do so), construction and demolition debris, dewatered sludge, contaminated soil, and incinerator ash may also be disposed in municipal solid waste landfills. Industrial waste includes excluded wastes and are classified as slag, uncontaminated earth, non-toxic fly ash, spend non-toxic foundry sand and material from mining, construction, or demolition operations.

Public, private haulers or self-haul provide waste collection service in the SWMD. Waste flows to landfills either by direct haul or through a transfer facility. Direct hauled waste is disposed in in-state and out-of-state landfill facilities.

Waste is either direct hauled or transferred to a landfill. About one-third, 35%, of the residential/commercial solid waste direct hauled for disposal was hauled to in-state landfills - Pike Sanitation Landfill, 34%, and Beech Hollow Landfill, 1%. The rest of the residential/commercial was hauled out of state to Kentucky landfills to the facilities Boyd County Sanitary Landfill, 27%, and Green Valley Landfill, 38%. Table D-1 a depicts the landfills used for

waste disposal in the reference year waste. Roughly half, 54% of the district’s residential/commercial waste is disposed in in-state landfills and 46% is disposed in out-of-state landfills.

Figure D-1 Residential/Commercial Landfill Direct Hauled and Transferred

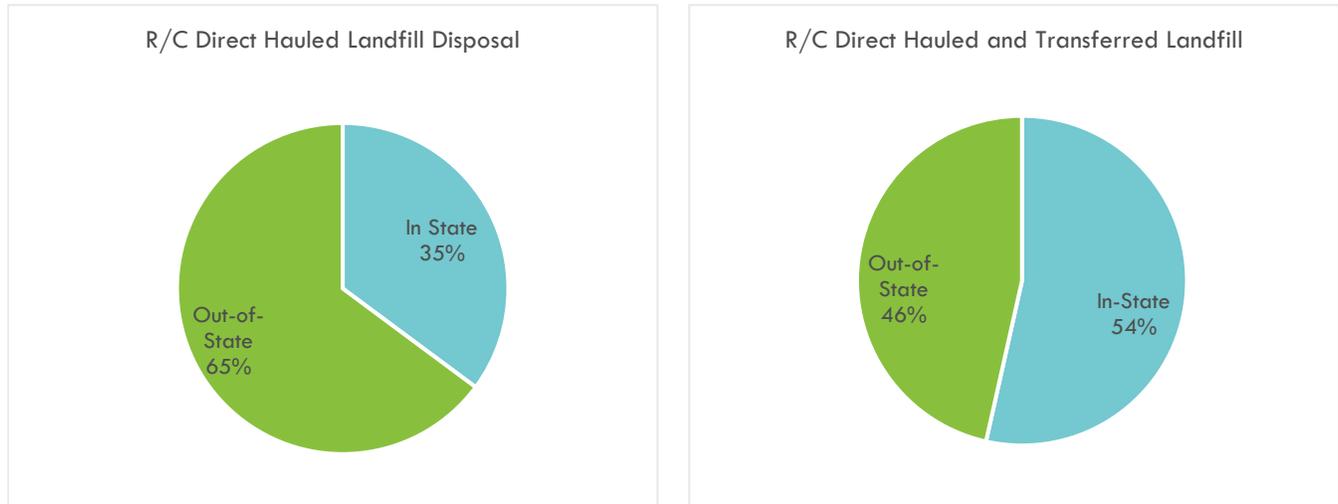


Table D-1b: Waste Disposed in Reference Year – Captive Landfills¹

Facility Name	Location		Waste Accepted from the District		
	County	State	Industrial (tons)	Excluded (tons)	Total (tons)
None.					0
Total			0	0	0

¹ The facilities listed in Table D-1a and identified as able to accept waste from the SWMD (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).

Source(s) of Information:

Ohio EPA. “2019 Ohio Facility Data Report Tables”. February 17, 2021.

Ohio EPA. “Disposal Recycling and Generation Analytic. Summary for 2019”

Captive landfills are landfills used to dispose of waste generated exclusively by the manufacturing company that owns the landfill. District waste was not disposed in a captive landfill in the reference year.

Table D-1c: Total Waste Disposed in Landfills (Direct Haul)

Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total
73,298	36,510	31,747	141,555

Excluded wastes are classified as slag, uncontaminated earth, non-toxic fly ash, spend non-toxic foundry sand and material from mining, construction, or demolition operations.

Source(s) of Information:

Ohio EPA. “2019 Ohio Facility Data Report Tables”. February 17, 2021.

Ohio EPA. “Disposal Recycling and Generation Analytic. Summary for 2019”

Sample Calculations:

Residential/Commercial + Industrial + Excluded = Total

In the reference year, a total of 141,555 tons were direct hauled from the SWMD. Over half of the direct hauled solid waste was from the residential/commercial sector.

Table D-2 Reference Year Waste Transferred¹

Facility Name	Location		Waste Received from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded ² (tons)	Total (tons)
Cleveland Transfer / Recycling Station	Cuyahoga	OH	4	0	0	4
Rumpke Waste Inc Lawrence County Transfer Facility	Lawrence	OH	13,097	0	55	13,152
Rumpke Waste Inc Chillicothe Recycling & Transfer Station	Ross	OH	2	0	0	2
Waste Management of Ohio - Chillicothe	Ross	OH	398	3	0	401
Portsmouth Solid Waste Transfer Facility	Scioto	OH	15,421	0	0	15,421
Total			28,922	3	55	28,980

¹ The facilities listed in Table D-2 and identified as able to accept waste from the SWMD (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).

Source(s) of Information:

Ohio EPA. "2019 Ohio Facility Data Report Tables". February 17, 2021.

Ohio EPA. "Disposal Recycling and Generation Analytic. Summary for 2019"

Sample Calculations: Residential/Commercial + Industrial + Excluded = Total

Transfer facilities are conveniently located where solid waste, delivered by collection companies and residents, is consolidated, temporarily stored, and loaded into semi-trailers for transport. Solid waste is then delivered to a processing facility or disposal site. In cases where waste is hauled from a transfer facility to a landfill, the county of origin is not recorded at the landfill. This means a load of trash disposed in a landfill from a transfer facility could have waste mixed from several counties. When a transfer facility hauls to more than one landfill, it becomes difficult to track which landfill received a county's waste. For planning purposes, the waste hauled through transfer facilities is listed separately identifying possible destination landfills.

The vast majority of the waste transferred was from the residential/commercial sector during the reference year, less than 1% came from the industrial sector or was excluded waste.

There are two in-district transfer stations located in the SWMD. In 2019, transfer facilities managing the SWMD's waste identified using the following disposal facilities:

Transfer Station	Destination Landfill	Location
Cleveland Transfer / Recycling Station	American Landfill, Inc.	Out of District
Rumpke Waste Inc Lawrence County Transfer Facility	Pike Sanitation Landfill	In District
Rumpke Waste Inc Chillicothe Recycling & Transfer Station	Pike Sanitation Landfill	Out of District
Waste Management of Ohio - Chillicothe	Suburban Landfill Inc	Out of District
Portsmouth Solid Waste Transfer Facility	Pike Sanitation Landfill	In District

Table D-3 Waste Incinerated/Burned for Energy Recovery in Reference Year¹

Facility Name	Facility Type	Location		Waste Accepted from the SWMD			
		County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
None				0	0	0	0
Total				0	0	0	0

¹ The facilities listed in Table D-3 and identified as able to accept waste from the SWMD (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).

Source(s) of Information:

Ohio EPA. "2019 Ohio Facility Data Report Tables". February 17, 2021.

Ohio EPA. "Disposal Recycling and Generation Analytic. Summary for 2019"

No waste to energy facilities were used in the reference year to manage the SWMD's waste.

Table D-4 Incinerated and Excluded Waste Percentages of Total Waste Disposed

	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)	% of Total Waste Disposed
Direct Hauled	73,298	36,510	31,747	141,555	83%
Transferred	28,922	3	55	28,980	17%
Incinerated	0	0	0	0	0%
Total	102,220	36,513	31,802	170,535	100%
Percent of Total	60%	21%	19%	100%	

Source(s) of Information:

Ohio EPA. "2019 Ohio Facility Data Report Tables". February 17, 2021.

Ohio EPA. "Disposal Recycling and Generation Analytic. Summary for 2019"

Sample Calculations:

% of Total Waste Disposed = Total Direct Hauled / Total Disposed * 100%

= 141,555 / 170,535 * 100%

= 83% Direct Hauled Waste

According to Ohio EPA Format 4.0, if excluded waste is 10% or less of total disposal in the reference year, then SWMDs are not required to account for excluded waste in the solid waste management plan. For the SWMD, excluded waste accounts for 19% of total disposal in 2019 and will be included.

Approximately 83% of the waste was direct hauled, meaning a refuse truck picked up waste from clients and directly hauled that waste to a landfill for disposal. Combining the direct haul and transfer disposal data for the reference year, 50% of the SWMD's waste (including residential/commercial, industrial, and excluded waste) was disposed at Pike Sanitation Landfill, in-state. Two out-of-state landfills (located in Kentucky) accepted the majority of the rest of the SWMD's waste, Green Valley Landfill, 32%, and Boyd County Sanitary Landfill, 17%. Combined these three landfills accepted 98% of the SWMD's waste.

B. Historical Waste Analysis

Table D-5 Historical Disposal Data

Year	Population	Residential/ Commercial Solid Waste		Industrial Solid Waste	Excluded Waste	Total Waste
		Rate (ppd)	Weight	Weight	Weight	Weight
			(tons)	(tons) ²	(tons) ³	(tons) ⁴
2015	141,949	3.91	101,374	16,582	59,779	177,735
2016	136,960	4.07	101,743	19,255	63,980	184,978
2017	141,949	4.77	123,693	20,460	72,158	216,311
2018	137,952	4.20	105,781	29,519	82,826	218,126
2019	134,777	4.16	102,220	36,513	31,802	170,535

Source(s) of Information: Ohio EPA ADR Review Forms for 2015, 2016, 2017, 2018 and 2019 for population and waste disposal data. The 2019 data is from the 2019 AD Review Form and 2019 SWMD Exports spreadsheet, which includes the exported waste out of state.

Sample Calculation: Residential/Commercial + Industrial + Excluded = Total Waste

((Residential/Commercial tons * 2,000 pounds per ton) / 365 days) / Population = Residential/Commercial disposal rate

Table D-5a Annual Percentage Change

	Residential / Commercial	Industrial Solid Waste	Excluded Waste	Total Waste
2015	-	-	-	-
2016	0%	16%	7%	4%
2017	22%	6%	13%	17%
2018	-14%	44%	15%	1%
2019	-3%	24%	-62%	-22%

Table D-5b Annual Change in Tons Disposed

	Residential / Commercial	Industrial Solid Waste	Excluded Waste	Total Waste
2015	-	-	-	-
2016	369	2,673	4,201	7,243
2017	21,950	1,205	8,178	31,333
2018	-17,912	9,059	10,668	1,815
2019	-3,561	6,994	-51,024	-47,591

Table D-5c Average Annual Percentage Change

Average Annual Percentage Change	
Residential/Commercial	1.0%
Industrial Waste	22.6%
Excluded Waste	-6.8%

Table D-5d Average Annual Change in Tons Disposed

Average Annual Change in Tons Disposed	
Residential/Commercial	212
Industrial Waste	4,983
Excluded Waste	-6,994

Table D-5e Average Per Capita Disposal Over Time

Average Per Capita Disposal Over Time (5 Years)	
Residential/Commercial	4.22



As seen in Figure D-2, total waste disposed in 2015 and 2016 was around 180,000 tons before increasing to a high point in 2017 and 2018, with total tons reaching around 217,000 tons. The tons dropped dramatically in the reference year to around 170,000 tons. The disposal rate is not consistent with changes in population, which has on average declined 1% during the same time period.

The uptick in 2017 was in large part due to about 20,000 tons more of residential/commercial waste and 10,000 tons more of excluded waste. In 2018, industrial and excluded waste was higher

than average. While industrial waste increased drastically in the reference year, excluded waste dropped by more than half.

As shown in Figure D-2, residential/commercial has remained relatively consistent around 102,000 tons with the exception of 2017. Industrial waste has had a consistent growth every year since 2015. Excluded waste also showed consistent growth from 2015 to 2018, with an anomalous drop in 2019. The following analysis will explore these patterns in more detail.

1. Residential/Commercial

Figure D-3 shows the total residential and commercial tons of waste disposed in the District from 2015 through 2019. The population of the district during this period decreased an average of 1%. The tonnage disposed remained consistent slightly above 100,000 except for in 2017. The increase in tonnage appears to be from an addition of approximately 20,000 tons disposed in out-of-state landfills. Population changes or commercial activity does not appear to explain this uptick. The data from 2017 might have had reporting errors, attributing waste to the wrong counties or double counting.

The 2017 Plan projected lower disposal amounts than actually seen for years 2015 through 2019. The 2017 Plan showed the average tonnage from 2009 to 2013 had declined. This pattern continued into 2014, with tonnages averaging approximately 85,000. In 2015 the amount of residential/commercial material disposed increased to over 100,000 and continued at or above this level.

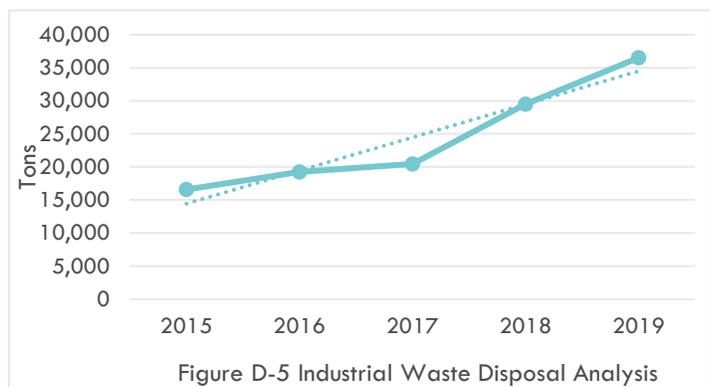
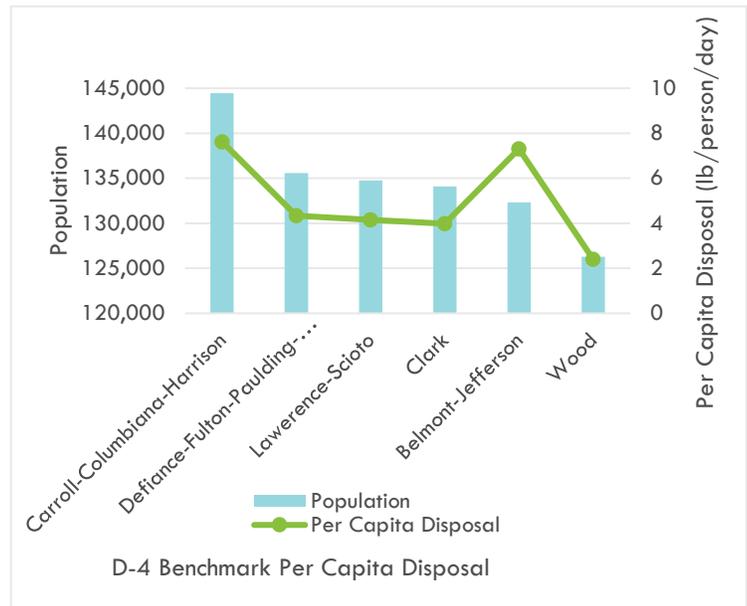
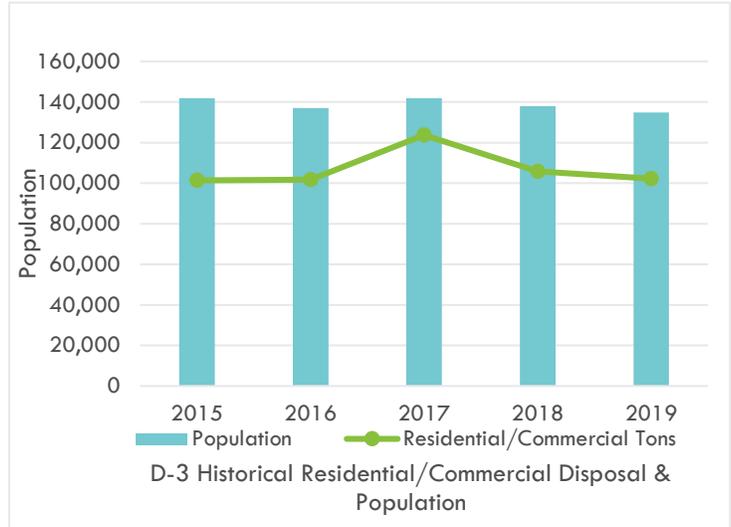
The lowest point in the District in terms of disposal was in 2011, with around 73,000 tons of residential/commercial material landfill.

The roughly 25% increase from 2014 to 2015 could be explained in part by a change in definition of what constitutes industrial waste. In 2015, while residential/commercial waste increased 25%, industrial waste decreased 19%.

The SWMD's residential and commercial per capita disposal was compared to other districts' in Ohio with similar populations as shown in Figure D-4. On average, the residential and commercial disposal for compared districts was 4.97 pounds per person per day. The SWMD's residential and commercial per capita disposal is below that at 4.16 pounds per person per day. The District's per capita disposal falls between Ohio's 2019 statewide average of 4.68 pounds per person per day and the national average of 2.31 pounds per person per day¹¹.

2. Industrial Waste

Industrial waste is a major component of the SWMD's disposal stream, accounting



¹¹ US EPA. "Advancing Sustainable Materials Management: 2017 Fact Sheet." November 2019.

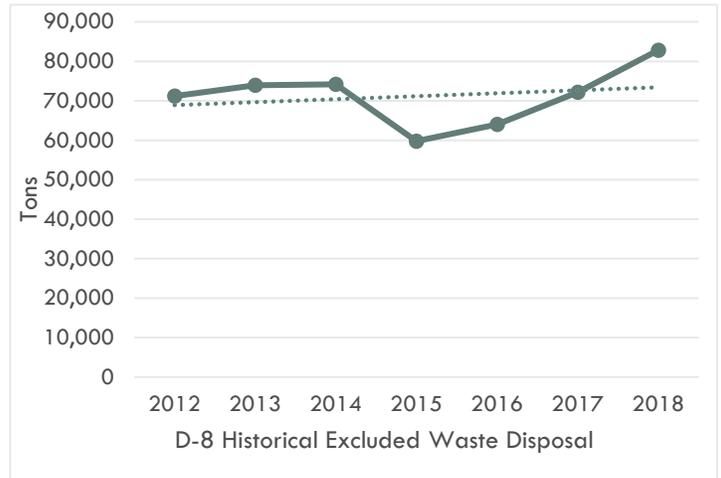
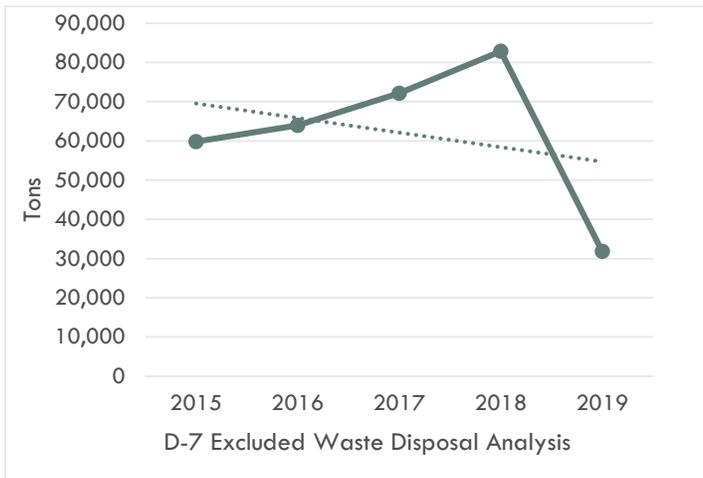
for 21% of the waste disposed in the reference year. Figure D-5 shows that industrial waste has been growing at an average annual rate of 23% during the reference year and four years prior.

However, looking at the historical data from the past 10 years, including the reference year, 2018 and 2019 appear to be outliers (see Figure D-6). Desktop research of business economic and employment data do not indicate the SWMD had a substantial increase in industrial activity that would lead to such an increase in waste¹². The cause of the increase could be due to reporting error or double counting. In 2019 for example, excluded waste was dropped by 54% over the 2015 to 2018 average. It is possible that some normally counted excluded waste was counted as industrial waste in 2019 causing a drop in excluded waste and an uptick in industrial waste.



3. Excluded Waste

Excluded waste contributed between 33% to 38% of total disposal annually in the SWMD over the past 5 years with exception of 2019. In 2019, the excluded waste disposed dropped in 2019 by 62% compared to high point in 2018 (see Figure D-7). Excluded wastes includes slag, uncontaminated earth, non-toxic fly ash, spent non-toxic foundry sand and material from mining, construction, or demolition operations. Looking at historic excluded waste disposal, without 2019 data, excluded waste has increased slightly over time, averaging around 70,000 tons (Figure D-8).



¹² [https://datausa.io/profile/geo/lawrence-county-oh#:~:text=The%20most%20common%20industries%20in,Retail%20Trade%20\(3%2C15%20people\)](https://datausa.io/profile/geo/lawrence-county-oh#:~:text=The%20most%20common%20industries%20in,Retail%20Trade%20(3%2C15%20people)) and <https://datausa.io/profile/geo/scioto-county-oh>

C. Disposal Projections

There are several methods that can be used for projecting waste disposal through the planning period, such as historical per capita, historical averages and historical trends. After conducting the historical analysis and considering factors that could change historical disposal trends, waste disposal for the planning period is projected in Table D-6.

Table D-6 Waste Disposal Projections

Year	Residential/ Commercial Solid Waste	Industrial Solid Waste	Excluded Waste	Total Waste	Waste Transferred (as part of Total Disposal)	Waste Transferred (as part of Total Disposal)
	Weight	Weight	Weight	Weight	Weight	Percent
	(tons)	(tons)	(tons)	(tons)	(tons)	17%
2019	102,220	36,513	31,802	170,535	28,980	
2020	101,842	36,693	69,686	208,221	35,384	
2021	101,466	36,876	69,686	208,028	35,351	
2022	101,091	37,060	69,686	207,837	35,319	
2023	100,718	37,246	69,686	207,649	35,287	
2024	100,346	37,432	69,686	207,464	35,255	
2025	99,976	37,619	69,686	207,281	35,224	
2026	99,608	37,807	69,686	207,101	35,193	
2027	99,240	37,996	69,686	206,922	35,163	
2028	98,875	38,186	69,686	206,747	35,133	
2029	98,511	38,377	69,686	206,574	35,104	
2030	98,148	38,569	69,686	206,403	35,075	
2031	97,787	38,762	69,686	206,235	35,046	
2032	97,428	38,956	69,686	206,069	35,018	
2033	97,069	39,151	69,686	205,906	34,990	
2034	96,713	39,346	69,686	205,745	34,963	
2035	96,358	39,543	69,686	205,586	34,936	
2036	96,004	39,741	69,686	205,430	34,910	
2037	95,652	39,939	69,686	205,277	34,884	

Source(s) of Information: 2019 Ohio EPA ADR Review Form.

Sample Calculation: Residential/Commercial Solid Waste = (365 days * population * 4.16 lbs/person/day) / 2000 lbs/ton

Industrial Solid Waste = 2019 tonnage used as a base rate with 5.97 tons / employee / year as the rate of change

Excluded Waste = Average of 2015-2018 tonnage held constant, 2019 tonnage was an outlier

Total Waste = Residential/Commercial Solid Waste + Industrial Solid Waste + Excluded Waste

There are several methods that can be used for projecting waste disposal through the planning period, such as historical per capita, historical averages and historical trends. After conducting the historical analysis and considering factors that could change historical disposal trends, waste disposal for the planning period is projected in Table D-6.

Transfer projections are a constant percentage of total waste disposed. The percentage used, 17%, is the percentage of total waste disposed in the reference year that was routed through transfer facilities prior to being taken to a landfill. Based on analysis of available capacity for disposing of the SWMD's waste, the SWMD did not identify any reasons to suspect that the amount of waste routed through transfer stations will change.

1. Residential/Commercial Waste Projections

For the reference year and the 4 years prior, the residential and commercial waste disposal in the district ranged between 101,000 to 106,000 ton per year with the exception of 2017 where the disposed ton jumped to 124,000 tons. There is a not a clear explanation as to why the disposal jumped about 20,000 tons in 2017. Outside of that year the disposal rate has remained consistent. Disposal projections were based on the Districts' 2019 disposal per capita rate of 4.16 lbs/person/day.

2. Industrial Waste Projections

From 2015 to 2019, industrial waste disposal follows an increasing trendline. Manufacturing employment from 2015 to 2018 in the district also increased by 117 employees according to the U.S. census American Community Survey. The Ohio Southeast Economic Development and Appalachian Partnership for Economic Growth (APEG) report investments to retain, attract and prepare sites for companies. With continued planned investments in the region, the District expects industrial establishments and employment growth will continue. Historical (2015 to 2018) growth in employment is 0.5% per year. Using the per year employment historical growth projection applied to estimate employment projections. Based on the employment and 2019 tons of waste disposal a 5.97 tons disposed per employee rate is calculated. This rate is applied to the projected employee growth to estimate the planning period industrial waste disposal.

3. Excluded Waste Projections

From 2012 to 2018 excluded waste tonnages disposed reported as high as 82,826 tons (in 2018) and as low as 59,779 tons (in 2015). In fact, waste increased from 2012 to 2014, dipped in 2015 and then increased up to the 2018 reported tonnages. Based on this wave cycle, it doesn't appear that 2019 documented tonnages of 31,802 tons is an outlier to ignore. Tonnages will most likely increase from the 2019 tonnage reports. In the most recent waste disposal data reports, 2020 data now available is reporting 24,283 tons of excluded waste disposed. This is another decline in excluded waste instead of an increase. Thus, holding the average tonnage over the planning period most likely overestimates the excluded waste disposal. For planning purposes this would be a conservative scenario for determining waste disposal capacity. Revenue streams are not generated on excluded waste.

The 2015-2018 average is projected to remain flat through the planning period.

APPENDIX E RESIDENTIAL/COMMERCIAL RECOVERY DATA

Appendix E provides an inventory of materials recovered from the residential/commercial sector in the reference year, adjusted quantities for double counting, total adjusted quantities of material recovered in the reference year, historical quantities recovered and projected quantities to be recovered.

A. Reference Year Recovery Data

Tables E-1 through E-4 account for all material being credited to the waste reduction and recycling rate for the residential/commercial sector. These tables were adjusted for double counting. Double counting occurs when the same material is reported by more than one survey respondent, typically both the generator of the material and the processor that receives the material from the generator. Material is “double counted” if the quantities from both respondents are credited to total recovery. In those instances, the total quantity recovered was adjusted to subtract the quantity reported by one source or the other to avoid crediting the material twice.

Table E-1 Commercial Survey Results

NAICS ¹	Appliances/White Goods	Electronics	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Wood	Commingled Recyclables	Yard Waste	Used Motor Oil	Scrap Tires	Oil (Cooking)	
42			0	0	0	3	2	178	0	76	3	0	0	0	0	0	
44			19	4	2	37	218	65	0	11	5	1	2	3	161	4	
51			0	0	0	0	3	50	50	0	0	0	0	0	0	0	
54			0	0	0	11	3	0	0	0	0	0	2	2	4	0	
56			0	0	0	0	0	0	0	0	0	785	0	0	0	0	
62			0	0	0	1	0	0	5	0	0	0	0	0	0	0	
<i>Other</i>			0	0	0	8,964	713	702	473	0	0	0	0	0	0	0	
Unadjusted Total	0	0	19	4	2	9,015	938	994	528	87	8	786	4	5	164	4	12,557
Adjustments												785			164	4	953
Adjusted Total	0	0	19	4	2	9,015	938	994	528	87	8	1	4	5	0	0	11,603

¹ NAICS stands for The North American Industry Classification System and is used by the United States, Canada, and Mexico to classify businesses by industry Source(s) of Information: District surveys conducted to gather 2019 recycling data.

Sample Calculation:

Unadjusted Total – Adjustments = Total

19 – 0 = 19

Table E-1 is reserved for commercial data obtained from SWMD survey efforts. The SWMD issued a recycling survey to capture 2019 diversion data for the commercial sector. Adjustments were needed to exclude recycling that was reported from processors and transporters.

Table E-2 Data from Other Recycling Facilities

Program and/or Source of Materials/Data	Appliances/White Goods	Electronics	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Commingled Recyclables (Mixed)	
Buybacks												
None												
Scrap Yards												
Non												
Brokers												
None												
Processors/MRF's												
Rumpke Waste Recycling - Columbus					2	0	0	2	5	1	0	
Rumpke Center City Recycling - Hamilton County					542	111	62	726	1,828	273	0	
Rumpke Recycling					0	0	0	97	35	13	1,650	
Rumpke - Chillicothe					0	0	0	1	0	0	0	
Unadjusted Totals	0	0	0	0	544	111	62	826	1,869	287	1,650	5,348
Adjustments						0			0		1,566	1,566
Adjusted Totals	0	0	0	0	544	111	62	826	1,869	287	84	3,782

Source(s) of Information: 2019 Ohio EPA Material Recovery Facility and Commercial Recycling Data. SWMD surveys to gather 2019 data for Buybacks, Scrap Yards, and Brokers.

*Hauler reports include commercial clients. This is not all residential.

Sample Calculation:

Unadjusted Total – Adjustments = Total

544 – 0 = 544

Assumptions: None

Quantities reported in Table E-2 were obtained from buyback surveys and Ohio EPA reports on processors. Processors, buybacks, and MRFs capture the recyclables and process them to in preparation for recycling. Adjustments were made to remove drop-off recyclable tonnages from MRF data (commingled recycling mixed) to avoid double counting.

Table E-3 Data Reported to Ohio EPA by Commercial Businesses

Ohio EPA Data Source	Glass	Plastic	Newspaper	Cardboard	Mixed Paper	Nonferrous	Ferrous	Wood	Other
LAWRENCE COUNTY									
Walmart Recycling in Ohio		19.32		666.57	1.69	99.79		0.00	18.79
Lowe's Companies, Inc.		0.00		60.69	0.00	0.00		82.14	0.00
Dollar General Corporation		0.00		153.28	1.44	0.00		0.00	0.00
Kroger		3.66		115.11	0.00	0.00		0.00	2.93
Sam's Club		18.61		443.16	1.63	0.08		116.88	26.23
United States Postal Service		2.32		6.82	127.45	0.00		0.00	0.00

Ohio EPA Data Source	Glass	Plastic	Newspaper	Cardboard	Mixed Paper	Nonferrous	Ferrous	Wood	Other	
SCIOTO COUNTY										
Walmart Recycling in Ohio		17.47		785.21	1.53	0.07		0.00	53.82	
Lowe's Companies, Inc.		0.00		73.67	0.00	0.00		56.29	0.00	
Dollar General Corporation		0.00		244.21	2.06	0.00		0.00	0.00	
Kroger		19.29		648.36	0.00	0.00		0.00	9.79	
United States Postal Service		2.32		6.82	127.45	0.00		0.00	0.00	
Unadjusted Total	0	83	0	3,204	263	100	0	255	112	4,017
Adjustments									0	0
Adjusted Total	0	83	0	3,204	263	100	0	255	112	4,017

Source(s) of Information: 2019 Ohio EPA Material Recovery Facility and Commercial Recycling Data

Sample Calculation:

Unadjusted Total – Adjustments = Total

83 – 0 = 83

Assumptions: None

Quantities reported in Table E-3 were obtained from Ohio EPA reports.

Table E-4 presents quantities diverted through programs and services in the reference year. This table includes all residential/commercial programs and services through which materials being credited to total diversion were recovered. Adjustments exclude recycling that was reported from processors shown on Table E-2 and other data collected. Most materials collected from programs are recycled to a processor listed on Table E-2, thus are credited to the processor to avoid double counting recycling quantities. Scrap tires collected from the scrap tire collection events are reported with Ohio EPA Scrap Tire data, and to avoid double counting the tons of scrap tires collected via HHW and scrap tire collection events are removed from the final tonnage reported by the Ohio EPA. This was done so that the scrap tire program data can be shown in this appendix without double counting tonnages.

Table E-4 Other Recycling Programs/Other Sources of Data

Other Programs or Sources of Data	Appliances/Refrigerators	HHW	Used Motor Oil	Electronics	Scrap Tires	Dry Cell	Lead-Acid	Food	Glass	Ferrous	Non-Ferrous	Corrugated	All Other	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Christmas Trees	Unadjusted Total	Adjustments	Adjusted Total
Drop-off Recycling Program																		1,566		1,566		1,566
Ohio EPA Scrap Tire Data					1,355															1,355	17	1,337
Other Food and Yard Waste Management Activities								576												576		576
Annual Electronics Collection Event				3																3		3
HHW			1				1													1		1
Document Shredding Event													7							7		7
Scrap Tire Events					17															17		17
Christmas Tree																			3	3		3
Unadjusted Total	0	0	1	3	1,372	0	1	576	0	0	0	0	7	0	0	0	0	1,566	3	3,528	17	3,511
Adjustments					17															17		
Adjusted Total	0	0	1	3	1,355	0	1	576	0	0	0	0	7	0	0	0	0	1,566	3	3,511		

Source(s):
 Ohio EPA 2019 Compost Facility Report
 Ohio EPA 2019 Scrap Tire Data
 2019 District recorded program data.
 Sample Calculation:
 Unadjusted Total – Adjustments = Total
 3 – 0 = 3
 Assumptions: None

Other sources and/or programs for diverting waste are included in Table E-4. The yard waste and food waste data are from Ohio EPA’s Compost Facility Reports and the hauler/grocer report. Scrap tire data is from the Ohio EPA’s Scrap Tire reports and from SWMD hosted collection events. Adjustments were made to exclude tonnages from the SWMD hosted collection events since the contracted providers already report to Ohio EPA.

Table E-5 Reference Year Residential/Commercial Material Reduced/Recycled

Material	Quantity (tons)
Appliances/ "White Goods"	0
Household Hazardous Waste	0
Used Motor Oil	6
Electronics	3
Scrap Tires	1,355
Dry Cell Batteries	0
Lead-Acid Batteries	19
Food	580
Glass	546
Ferrous Metals	9,126
Non-Ferrous Metals	1,100
Corrugated Cardboard	5,024
All Other Paper	2,666
Plastics	456
Textiles	0
Wood	263
Rubber	0
Commingled Recyclables (Mixed)	1,651
Yard Waste	4
Other (Aggregated)	115
Total	22,913

Source(s) of Information: Tables E-1, E-2, E-3, and E-4

The District diverted 22,913 tons from the residential/commercial sector. Table E-5 reports quantities of each material diverted. Cardboard, commingled recyclables, and scrap tires are the three largest recycling categories in the reference year.

Table E-6 Quantities Recovered by Program/Source

Program/Source of R/C Recycling Data	Quantities (Tons)
Commercial Survey	11,603
Data from Other Recycling Programs	3,782
Data Reported to Ohio EPA by Commercial Businesses	4,017
Drop-off Recycling Program	1,566
Ohio EPA Scrap Tire Data	1,337

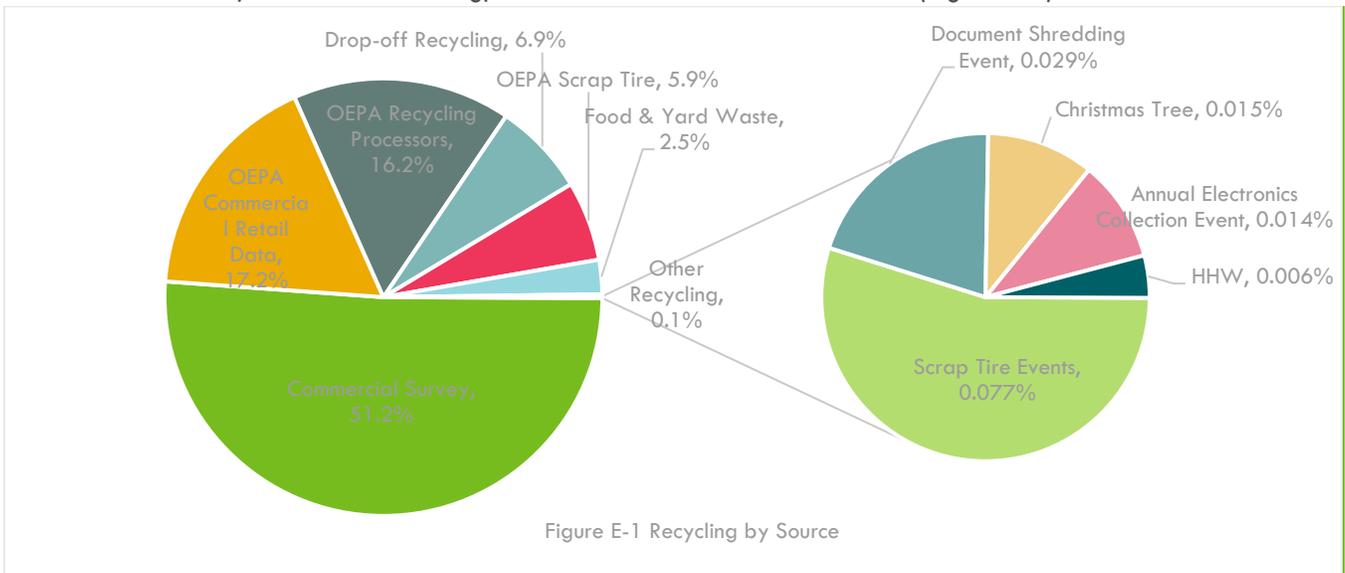
Program/Source of R/C Recycling Data	Quantities (Tons)
Other Food and Yard Waste Management Activities	576
Annual Electronics Collection Event	3
HHW	1
Document Shredding Event	7
Scrap Tire Events	17
Christmas Tree	3
Total	22,913

Source(s) of Information: Tables E-1, E-2, E-3 and E-4
Assumptions:

Table E-6 reports tonnages diverted for each program/source. This table attempts to attribute recycling to a program for data analysis shown in Tables E-7 through E-7a6.

B. Historical Recovery

In the reference year, the three largest sources of recycling data for the District are the commercial survey, Ohio EPA commercial retail data, and the Ohio EPA recycling processors data, accounting for 85% of all recycling data reported. The remaining recycling information comes from District programs including drop-off recycling, Ohio EPA scrap tire report, food and yard waste programs, and events held by the District such as scrap tire, HHW, electronics collection, document shredding, and Christmas tree collection events (Figure E-1).



Tables E-7 through E-7a6 show historical programmatic data for the District. The challenge with analyzing the programmatic data is that each year there are slight differences in how the data was recorded. For instance in 2015 and 2016, scrap tire collection events were included in the Ohio EPA Scrap Tire Data category. In the remaining years the scrap tire collection event totals were excluded. These differences in allocations can result in variations annually when looking at trends. Also, survey response impacts the tonnages reported on a yearly basis and cause for fluctuations seen on Table E-7a7. Data is only as good as the response.

Table E-7 Historical Residential/Commercial Recovery by Program/Source

Year	Commercial Survey	Data from Other Recycling Programs	Data Reported to Ohio EPA by Commercial Businesses	Drop-off Recycling Program	Ohio EPA Scrap Tire Data	Other Food and Yard Waste Management Activities	Annual Electronics Collection Event	HHW	Document Shredding Event	Scrap Tire Events	Christmas Tree	Totals
2015	21,267	4,901	2,919	1,836	1,506	482	2	0	5	0	4	32,922
2016	19,322	4,548	2,930	1,920	1,439	376	3	0	7	0	6	30,549
2017	13,180	4,588	3,561	1,555	1,294	556	5	23	5	75	0	24,915
2018	15,829	4,212	3,507	1,521	1,301	356	6	17	5	22	0	26,776
2019	11,603	3,782	4,017	1,566	1,337	576	3	1	7	17	3	22,913

Table E-7a1 Annual Percent Change in Tons Recovered

2015												
2016	-9%	-7%	0%	5%	-4%	-22%	66%	#DIV/0!	0%	#DIV/0!	25%	-7%
2017	-31%	1%	22%	-19%	-10%	48%	70%	#DIV/0!	-30%	#DIV/0!	-100%	-18%
2018	19%	-8%	-2%	-4%	1%	-36%	27%	-27%	6%	-71%	#DIV/0!	7%
2019	-27%	-10%	15%	4%	3%	62%	-44%	-92%	30%	-20%	#DIV/0!	-14%

Table E-7a2 Average Percentage Change in Tons Recovered

	-12%	-6%	9%	-3%	-3%	13%	30%	-	2%	-	-	-8%
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Table E-7a3 Annual Change in Tons Recovered

2015												
2016	-1,945	-353	11	84	-67	-106	1	0	1	0	1	-2,373
2017	-6,142	40	631	-365	-144	180	2	23	-2	75	-6	-5,634
2018	2,649	-376	-54	-55	7	-200	1	-6	0	-53	0	1,861
2019	-4,226	-430	510	66	36	219	-3	-16	2	-4	3	-3,863

Table E-7a4 Annual Per Capita Recovery Rate (pounds/person/day)

2015	0.82	0.19	0.11	0.07	0.06	0.02	0.00	0.00	0.00	0.00	0.00	1.27
2016	0.77	0.18	0.12	0.08	0.06	0.02	0.00	0.00	0.00	0.00	0.00	1.22
2017	0.51	0.18	0.14	0.06	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.96
2018	0.63	0.17	0.14	0.06	0.05	0.01	0.00	0.00	0.00	0.00	0.00	1.06
2019	0.47	0.15	0.16	0.06	0.05	0.02	0.00	0.00	0.00	0.00	0.00	0.93

Table E-7a5 Average Per Capita Recovery Rate

	0.64	0.17	0.13	0.07	0.06	0.02	0.00	0.00	0.00	0.00	0.00	1.09
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Table E-7a6 Average Tons of Material Recovered

	16,240	4,406	3,387	1,675	1,375	469	4	8	6	23	3	27,611
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Sources:

2015, 2016, 2017, 2018, 2019 Annual District Reports.

Commercial Survey from District survey efforts

Data from other recycling facilities from Ohio EPA MRF report

LS SWMD 2023 Plan

Draft August 2022

Ohio EPA commercial retail data from Ohio EPA MRF report
 Yard Waste composted from Annual District Report
 Food waste hauled reported from Annual District Report
 Ohio EPA scrap tire data from Ohio EPA reports
 Specific program data from historical Annual District Reports

As seen in Tables E-7 through E-7a6 the five-year average tons of material recovered is approximately 27,600 tons with an average annual decline of -8 percentage change. Commercial Survey documents the biggest decrease of average percent change in tons recovered at -12%. Evaluating the earlier years data compared to more current data, it appears the earlier years data may have been inflated or double counted. Annual Electronics Collection Event documents the biggest increase of average percent change in tons recovered at 30%.

To provide additional analysis, the District developed Table E-7a7 to historically benchmark material tonnages recovered from 2013 to 2019.

Table E-7a6 Historical Residential/Commercial Recovery by Program/Source

	2013	2014	2015	2016	2017	2018	2019	Correlations
Appliances / "White Goods"		-		-	-	-	-	
Household Hazardous Waste	23.00	23.35		23.24	-	16.92	-	The trend is flat with a slight decrease in 2018.
Used Motor Oil	17.00	7.50	7.00	7.80	8.30	7.33	5.83	Except for year 2013, slight fluctuations.
Electronics	4.00	4.00	2.00	3.65	5.00	5.75	3.20	Slight fluctuations.
Scrap Tires	921.00	1,042.71	1,647.00	1,438.46	1,369.22	1,323.10	1,354.65	Averages approximately 1,300 tons annually recovered.
Dry Cell Batteries			-	-	-	-	-	
Lead-Acid Batteries	20.00	16.10	14.00	12.34	11.34	19.65	19.35	Slight fluctuations. Averages approximately 16 tons annually recovered.
Food	329.00	595.51	573.00	521.53	715.09	474.73	579.64	Except for the peak in 2017, recovery of food is following a flat trend.
Glass	800.00	888.80	705.00	636.40	641.00	623.10	545.90	About 99% of the data collected for glass recovery is reported from a MRF processor. The fluctuations in the tonnages through the years are following a declining trendline. The changing waste stream away towards plastic materials could explain some of the decline. It is also possible that some commercial businesses may no longer be serviced.
Ferrous Metals	9,788.00	8,848.24	7,616.00	6,081.90	8,129.00	9,124.22	9,125.50	Ferrous metals took a dip in 2015 and 2016. Since recovered tonnages depends on commercial and processor surveys, at times the tonnage is lower than expected.
Non-Ferrous Metals	3,254.00	1,862.50	875.00	884.63	941.17	1,009.12	1,099.99	Nonferrous metals took a dip in 2015 and 2016. Since recovered tonnages depends on commercial and processor surveys, at times the tonnage is lower than expected.
Corrugated Cardboard	3,198.00	5,070.57	5,081.00	4,848.80	5,259.00	4,829.64	5,023.91	Excluding 2015, cardboard recovery had a couple dips but otherwise held relatively flat.
All Other Paper	3,037.00	3,415.89	3,454.00	3,303.19	3,371.00	2,853.24	22,665.97	Paper was holding flat until 2018 when recovered tonnages began a decline. Then further dropped in another 14% in 2019.
Plastics	428.00	498.78	672.00	694.62	670.00	530.67	456.18	Plastic recovery increased in 2015, 2016 and 2017 before leveling back down to about 450 tons. The tonnage increase in

	2013	2014	2015	2016	2017	2018	2019	Correlations
								2015, 2016 and 2017 came from one commercial business reporting.
Textiles		-	-	-	-	-	-	
Wood	50.00	71.70	32.00	43.00	61.00	41.03	263.31	In 2019, the large increase was documented from a commercial businesses reporting data to Ohio EPA.
Rubber	1.00	2.00	2.00	18.00	-	-	-	
Commingled Recyclables	2,145.00	12,156.03	12,076.00	11,860.66	3,564.00	5,915.15	1,650.85	Commingled recovery trend is difficult to follow. In 2104, 2015 and 2016 the commingled recyclables recovery increased about 6 times traditional historical tonnages seen. The District believes it was an issue with double counting or reporting from haulers that resulted in the elevated tonnages for those years.
Yard Waste	229.00	180.66	86.00	86.00	85.00	2.00	4.00	In 2013 and 2014 there were 2 registered compost facilities operating in the District. The Villages did not continue maintaining those registrations and yard waste diversion declined.
Other	134.00	307.52	80.00	85.00	85.10	0.20	114.94	Other fluctuates depending on the tonnages reported from commercial businesses.
TOTAL	24,378.00	34,991.86	32,922.00	30,549.22	24,915.22	26,775.85	22,913.22	Average annual recovery is 27,611 tons and demonstrates an 8% decrease from 2015 to 2019.

An additional challenge of examining historical recycling data and using that information to project future recycling is that the waste stream is evolving causing a decline in recycling tonnages due to materials becoming lighter overall. Certain heavier materials such as glass, newspaper, and paper have declined significantly in the recycling stream from 1990 to 2017 while during that same time period lightweight materials such as plastic containers, packaging, and films have increased. As a result, a greater volume of material must be collected to reach one ton of recycling. Plus, as manufacturers seek to use less energy and materials for greater savings along the production and distribution chains, the weight of lighter feedstock is also decreasing. Thinking into the future, this means that recycling programs will need to collect more volume in order to maintain tonnages.

C. Residential/Commercial Recovery Projections

There are many factors that come into play for when considering projections for residential/commercial recovery in this planning period. Considerations regarding the District’s projections include:

Evolving Ton

The “evolving ton” is a term being used to describe the shift in the overall composition of the recyclable material stream over the past 20 years. One of the trends responsible for this evolution has been the light weighting of packaging, especially through the use of materials like plastics and aluminum that have displaced materials like glass and steel. More recently, even rigid plastic packaging formats have started to be displaced by rapidly growing formats in flexible packaging. Plastics are not alone in driving the waste shift: electronic media have played a major role in changing the composition of our recyclable stream by reducing the quantity of newspaper and office paper. In addition, there has been an increase in corrugated cardboard from the residential sector caused by an increase in online purchases that is shipped in boxes (“Amazon Effect”).

It’s also critical to understand that while more types of plastics are getting collected, complexity has increased even within the resin types the recycling system has traditionally handled. In response to growing pressure to recycle more, many companies are shifting to “recyclable” materials, often defining them as those accepted in community recycling programs. One of the best examples of this trend has been Polyethylene Terephthalate (PET) replacing Polyvinyl Chloride (PVC) or Polystyrene (PS) thermoforms and heavier jar and container material like glass. The unforeseen consequence of this well-intentioned transition is the recent diversification of PET in the recycling stream, a phenomenon that has lowered the yield of usable materials (the PET used in plastic clamshell packages (ex: Strawberry container), blister packs (ex: over-the-counter medicine) and ketchup bottles is not the same as that used in a soda bottle).

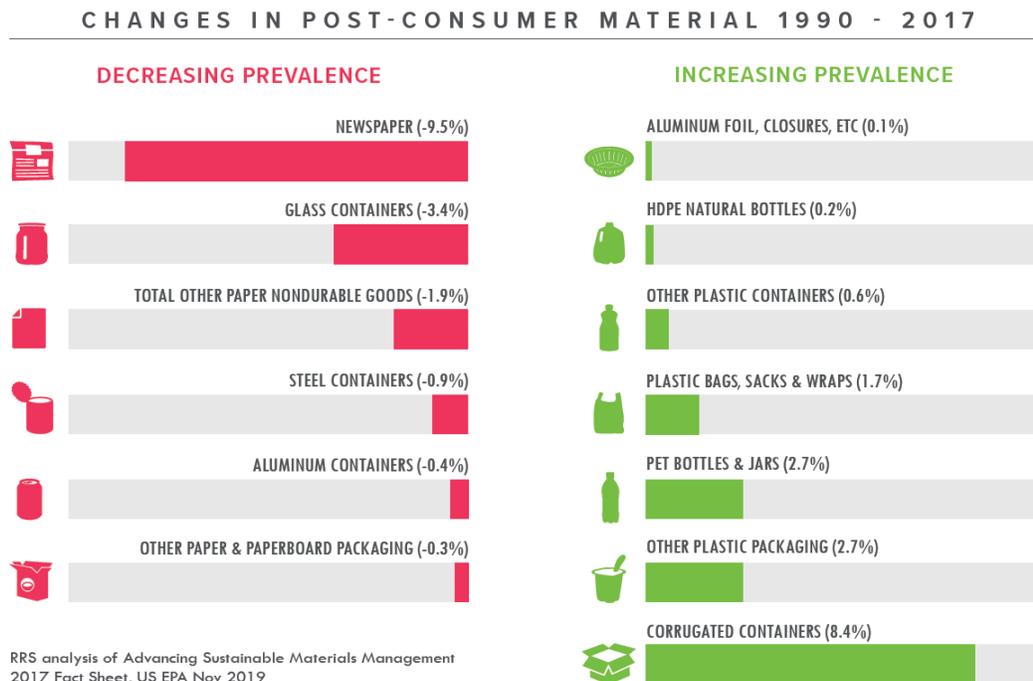


Figure E-2 The Evolving Ton

Recycling Market Trends

The orderly supply chain for the previously healthy recycling commodities market has experienced an overall price decline, as indicated in the Average Commodity Revenue (ACR) shown in Figure E-3. Freight and shipping costs have spiked as new markets are developed that do not have the advantages related to the Chinese export market

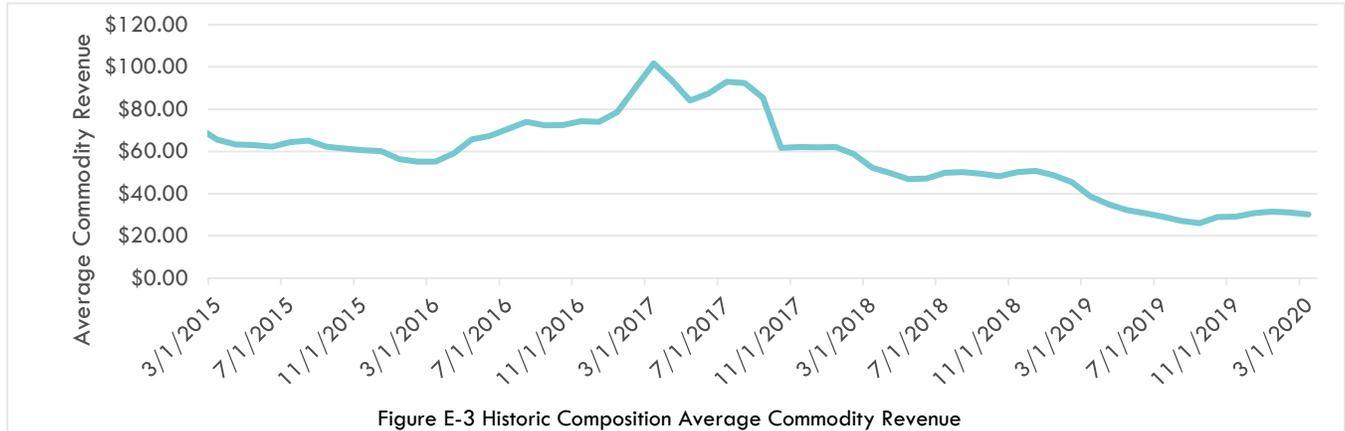
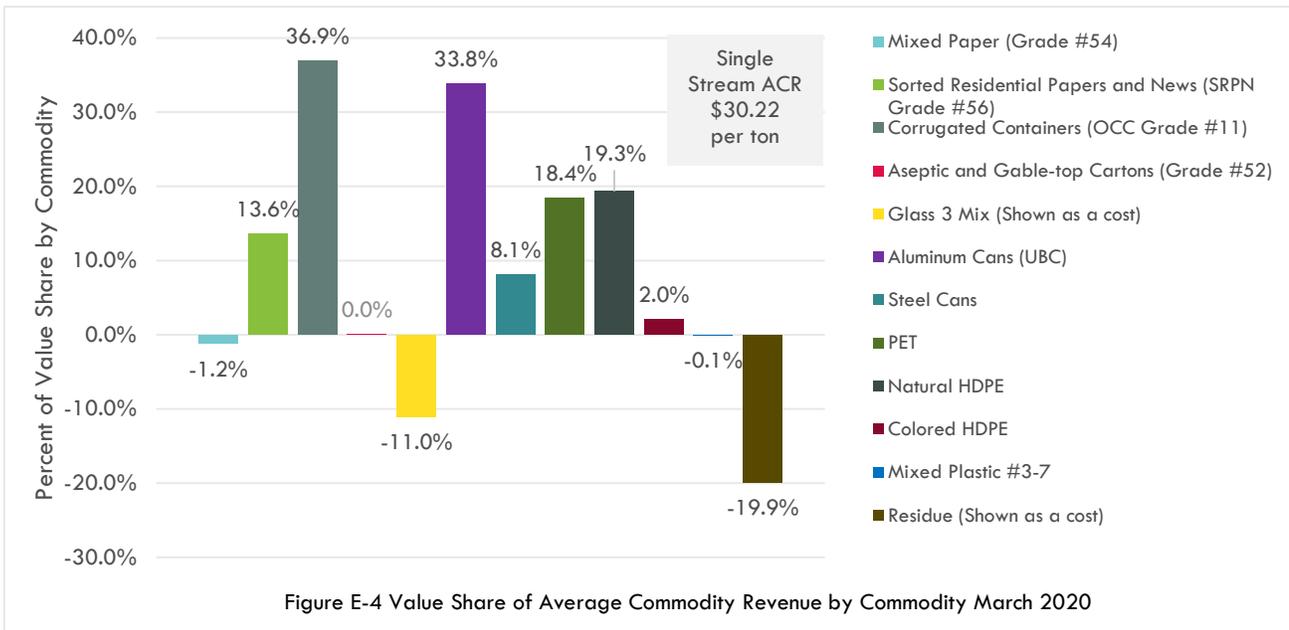


Figure E-3 Historic Composition Average Commodity Revenue

(demand, infrastructure, freight backhaul). In March 2020, the ACR was \$30.22 per ton, less than half of what it was five years ago at \$65.64 per ton in March of 2015. Each commodity plays a role in setting the ACR as shown in Figure E-4.

The overriding story for recycled commodity markets has been the complete imposition of Chinese inspections and enforcement initiatives under the branded “National Sword” and “Blue Sky 2018” campaigns, and the Chinese World Trade Organization (WTO) ban on unsorted mixed recovered materials and all “human consumed” packaging and post-consumer plastic grades. Heavy rejections of all imported materials, especially bales from MRFs, along with lower import quotas given to Chinese mills, have even curtailed old corrugated container and aluminum scrap shipments to China. The Chinese ban has resulted in an oversupply of paper that has caused prices to plummet for all bulk paper grades by over 50 percent through March 2018, compared to 2017 prices. Additionally, the July 2018-announced WTO ban forced sellers to scramble for new homes. These conditions especially target and limit markets for post-consumer MRF materials.



Further, the United States, through current administration and court actions, has imposed a series of tariffs and trade sanctions affecting newsprint, aluminum, and steel. In addition, regulations that limit truck driver productivity has created shipping constraints that impact the supply chain. Together these conditions are increasing costs and availability for reliable freight to move recovered materials. The short-term effect of these conditions is to price marginal markets out of both domestic and export opportunities.

These factors directly affect pricing for North American recovered materials and have caused unexpected market movement and profit changes. For instance, recovered paper producer costs have sharply risen with the need for more sorting and the higher freight; while, conversely, metal prices have spiked to record highs for all domestic scrap grades. The recycling commodities market is in a very volatile state. Dramatic price changes are the norm in this fractal space right now, and price conditions can quickly change. World demand and the world economy are still growing for consumer goods and recovered paper, yet prices are languishing under the above pressures.

COVID 19 Pandemic

The COVID-19 pandemic has had numerous impacts on municipal solid waste systems. Changes in consumption and waste disposal patterns and behaviors during the lockdown period have produced new challenges for solid waste management and diversion activities. SWANA’s Executive Director, David Biderman, reported residential waste increased by 20-25% with some local governments suspending curbside programs (recycling and bulky) due to trash volume collection needs. As of September 2020, about half of the local governments restored their programs as resident volume decreased. Mr. Biderman also reported commercial waste went down 20-25%. The shutdown of businesses and stores eliminated the major source of recovered paper. Paper mills in US need material and the value of corrugated cardboard (OCC) doubled and peaked at about \$110 per ton¹³.

The fluctuations and changes over the past 3 years (2018, 2019 and 2020) in waste management add challenges to projecting future generation, disposal, and recovery. The final full year data is not yet available to show the extent of the COVID-19 pandemic impacts to waste and recycling. The percentage fluctuation between commercial

¹³ Biderman, David. Ohio Buckeye Chapter Annual Meeting, September 16, 2020, 10am ET, Virtual Zoom Meeting. “Impact of COVID-19 on the Waste Industry”.

and residential waste is roughly equal presuming impacts may be neutralized. Which may be case for the waste landfilled, but reports from mills and material recovery facilities ascertain limited supply and a demand need.

Projections

Table E-8 Residential/Commercial Recovery Projections by Program/Source

Year	Commercial Survey	Data from Other Recycling Programs	Data Reported to Ohio EPA by Commercial Businesses	Drop-off Recycling Program	Ohio EPA Scrap Tire Data	Other Food and Yard Waste Management Activities	Annual Electronics Collection Event	HHW	Document Shredding Event	Totals
2019	11,603	3,782	4,017	1,566	1,337	576	3	1	7	22,913
2020	11,561	4,261	4,602	1,566	1,337	576	3	1	7	23,934
2021	11,518	4,245	4,585	1,566	1,337	576	3	1	7	23,838
2022	11,475	4,229	4,568	1,613	1,337	576	3	1	7	23,810
2023	11,433	4,214	4,552	1,661	1,337	576	3	1	7	23,783
2024	11,391	4,198	4,535	1,711	1,337	576	3	1	7	23,759
2025	11,349	4,183	4,518	1,763	1,337	576	3	1	7	23,736
2026	11,307	4,167	4,501	1,816	1,337	576	3	1	7	23,715
2027	11,265	4,152	4,485	1,870	1,337	576	3	1	7	23,696
2028	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2029	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2030	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2031	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2032	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2033	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2034	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2035	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2036	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678
2037	11,224	4,136	4,468	1,926	1,337	576	3	1	7	23,678

Sources:

Years 2019 data sources: Commercial Survey from District survey efforts, Data from other recycling facilities from Ohio EPA MRF report, Ohio EPA commercial retail data from Ohio EPA MRF report, Ohio EPA compost data from Ohio EPA Compost report (includes food waste), Ohio EPA scrap tire data from Ohio EPA reports, Specific program data from historical Annual District Reports

Sample Calculations:

Commercial Survey Projection 2020: 0.47 pounds per person recovery (2019) * 2020 population / 2000 * 365 = 11,561 tons

The 2019 Annual per capita recovery rate was applied to calculate projections from 2020 through 2027. Holding the rate flat allows changes in population to guide the recovery projection. Year 2019 recovery rate is used because it reflects the declining trend documented.

Data from Other Recycling Programs Projection 2020: 0.17 pounds per person (average annual recovery rate) * 2020 population / 2000 * 365 = 4,261 tons

The Average Annual per capita recovery rate was applied to calculate projections from 2020 through 2027. Holding the rate flat allows changes in population to guide the recovery projection. Average annual recovery rate is used because it reflects the declining trend documented.

Data Reported to Ohio EPA by Commercial Businesses Projection 2020: 0.16 pounds per person recovery (2019) * 1.15 * 2020 population / 2000 * 365 = 4,602 tons

The 2019 Annual per capita recovery rate was applied and then increased 15% annually to reflect the rising trend from 2018 to 2019.

Projections are estimated from 2020 through 2027.

Drop-off Recycling Program Projection 2020 & 2021: held constant

Drop-off Recycling Program Projection 2022: 1.03 * 2021 tonnage = 1,613 tons

The District is setting a goal of 3% annual increases due to program outreach to begin in 2022 and continue annually.

Ohio EPA Scrap Tire Data Projection 2020: held constant

Other Food and Yard Waste Management Activities Projection 2020: held constant

Annual Electronics Collection Event 2020: held constant

HHW 2020: held constant

Document Shredding Event Projection 2020: held constant

APPENDIX F INDUSTRIAL WASTE REDUCTION AND RECYCLING DATA

Appendix F contains an inventory of materials recovered from the industrial sector in the reference year, adjusts quantities for double counting, calculates total adjusted quantities of material recovered, analyzes historical quantities recovered and projects quantities to be recovered.

A. Reference Year Recovery Data

Tables F-1 through F-4 account for all material being credited to the waste reduction and recycling rate for the industrial sector.

Table F-1 Industrial Survey Results

NAICS	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables	Ash	Non-Excluded Foundry Sand	Flue Gas Desulfurization	Light Bulbs	Other: Batteries	Other: Stone/Clay/San	Other: Sludge	Other: Shrink Film	
21		0	230	7	10	3	1		0	1	3	0	0	0		0	200	0		
23		1	5,022	665	5	1	18		0	0	220	0	0	0		1	0	0		
31		0	8	143	57	3	41		0	0	35	0	0	0		0	0	0	2	
32		0	291	60	4	1	0		901	7	148	0	0	0		0	28	0		
33		0	250	78	326	0	2		0	62	50	0	0	48,249		0	2	110		
Other:		0	15	3	1	1	0		2	4	0	1,200	207	0		0	32	0		
Other:																				
Other:																				
Other:																				
Unadjusted Total	0	1	5,816	956	403	9	62	0	903	73	456	1,200	207	48,249	0	1	262	110	2	58,708
Adjustments																1	230	110		341

1 NAICS stands for The North American Industry Classification System and is used by the United States, Canada, and Mexico to classify businesses by industry

Source(s) of Information: Calendar year 2019 survey data as reported by industrial businesses.

(s): District industrial survey results.

Table F-1 accounts for material credited for waste reduction and recycling as reported by industrial businesses. In some instances, an industrial business did not respond to the reference year survey, but did respond to a previous survey. Some materials reported as recycled are considered non-creditable. These materials include train boxcars, construction and demolition debris, metals from vehicles, liquid industrial waste, and hazardous waste. Adjustments were made on Table F-1 to exclude these materials and to remove double counting.

Data on Table F-1 is organized by North American Industry Classification System (NAICS). Manufacturing industries are classified under sectors 31-33. Table F-1 aggregates the quantities from all returned surveys for an NAICS code.

Table F-2 Data from Other Recycling Facilities

Program and/or Source of Materials/Data	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Ash	Non-Excluded Foundry Sand	Flue-Gas Desulfurization Waste
Buybacks														
none														
Scrap Yards														
none														
Brokers														
none														
Processors/MRF's														
none														
Unadjusted Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjustments														0
Adjusted Totals	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source(s) of Information:
 Calendar year 2019 survey data as reported by industrial businesses.
 Ohio EPA Material Recovery Facility data 2019

Table F-2 data is obtained from the district’s industrial surveys and Ohio EPA’s reports on processors. There was only one processor/MRF that reported industrial diversion from in-district sources for the reference year.

Table F-3 Other Recycling Programs/Other Sources of Data

Other Recycling Programs or Other Sources of Data	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables	Ash	Non-Excluded Foundry Sand	Flue-Gas Desulfurization Waste
None														
Unadjusted Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Adjustments														0
Adjusted Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Source(s): Ohio EPA. District recorded program data.

Other recycling programs or sources of recycling data are reported in Table F-3 for industrial material. No other sources of industrial data were found for the District.

Table F-4 Industrial Waste Reduced/Recycled in Reference Year

Material	Quantity (tons)
Food	0
Glass	1
Ferrous Metals	5,816
Non-Ferrous Metals	956
Corrugated Cardboard	403
All Other Paper	9
Plastics	62
Textiles	0
Wood	903
Rubber	73
Commingled Recyclables (Mixed)	456
Ash	1,200
Non-Excluded Foundry Sand	207
Flue Gas Desulfurization	48,249
Other (Aggregated)	34
Total	58,367

Source(s) of Information:
 Calendar year 2019 survey data as reported by industrial businesses.
 Ohio EPA Material Recovery Facility data 2019

The SWMD diverted 58,367 tons from the industrial sector. Table F-4 reports quantities of each material diverted.

Table F-5 Quantities Recovered by Program/Source

Program/Source of Industrial Recycling Data	Quantity (Tons)
Industrial survey	58,367
Data from other recycling facilities	0
Total	58,367

Source(s) of Information:
 Calendar year 2019 survey data as reported by industrial businesses.
 Ohio EPA Material Recovery Facility data 2019

Table F-5 reports the total tons diverted for each program/source.

B. Historical Recovery

Table F-6 Historical Industrial Recovery by Program/Source

Year	Industrial survey	Data from other recycling facilities	Totals
2015	51,351.7	0	51,352
2016	42,130.4	0	42,130
2017	55,955.5	0	55,956
2018	57,290	0	57,290
2019	58,367	0	58,367

Table F-6a1 Annual Percentage Change in Tons Recovered

2015			
2016	-18%	-	-18%
2017	33%	-	33%
2018	2%	-	2%
2019	2%	-	2%

Table F-6a2 Average Annual Percentage Change in Tons Recovered

5%	-	5%
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Table F-6a3 Tonnage Change/Year

2015			
2016	-9,221	0	-9,221
2017	13,825	0	13,825
2018	1,334	0	1,334
2019	1,077	0	1,077

Table F-6a4 Average Tonnage Change/Year

1,754	0	1,754
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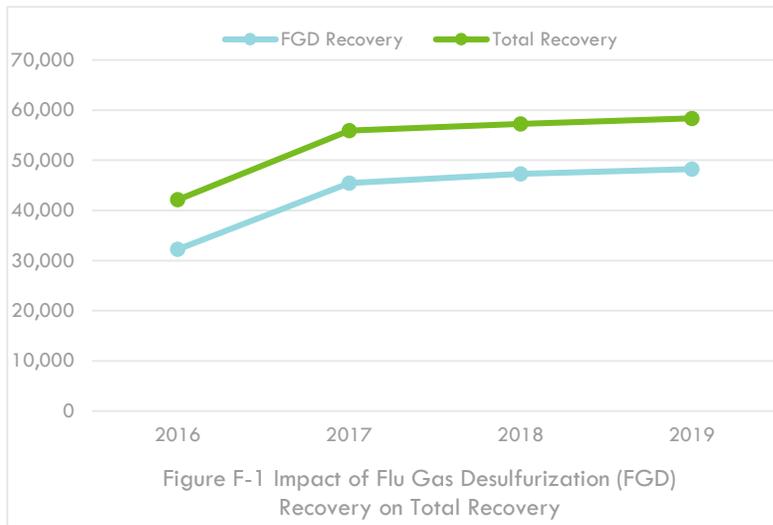
Table F-6a5 Average Tons of Material Over 5 Years

53,019	0	53,019
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Source(s): District Industrial Surveys for 2015 – 2019, "Material Recovery Facility and Commercial Recycling Data" for 2015-2019

Data from the industrial sector is obtained from surveys and Ohio EPA MRF data, as seen from Table F-6. Average industrial recovery from 2015 to 2019 is 53,019 tons and increased an average of 5% annually. Excluding the dip in 2016, industrial recovery shows a steady increasing trendline. Over 80% of the recovered industrial stream is flue gas desulfurization. Flue gas desulfurization (FGD) is a process that removes sulfur dioxides

from flue gas produced by coal-fired power plants. The process generates a solid material that can be recovered and used in wallboard manufacturing. The FGD material is being recovered and use in a beneficial manner in the District. However, the reporting and tracking for this material may change in the coming years. As seen in Figure F-1, volume fluctuations of this material is the driving factor for the industrial recovery annual tonnages and will impact future projected recovery.



Another method of estimating potential industrial sector recycling is to examine historic manufacturing establishments and employment. The average number of manufacturing establishments in Lawrence County has been fairly constant in the past five years, averaging 36 establishments. In Scioto County, manufacturing establishments have increased slightly in the past couple years from a low of 43 in 2016 and 2017 to 51 in 2019. At the same time however, manufacturing employment which is a main driver of waste generation has declined from 1,498 employees in 2016 to 1,370 in 2019, so that even while the number of

manufacturing establishments were increasing the total employment was declining. Manufacturing employment data was only available for Lawrence County for years 2015 and 2016 and the average number of employees was 597¹⁴.

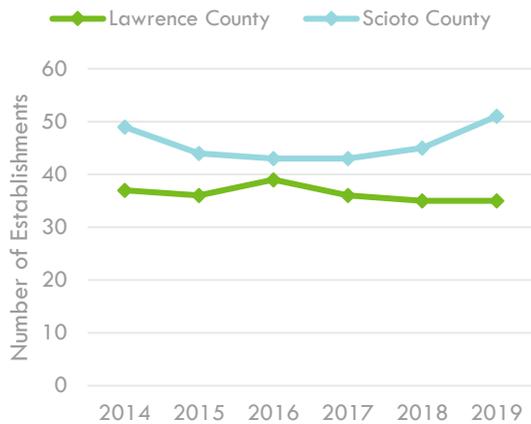


Figure F-2 Manufacturing Businesses

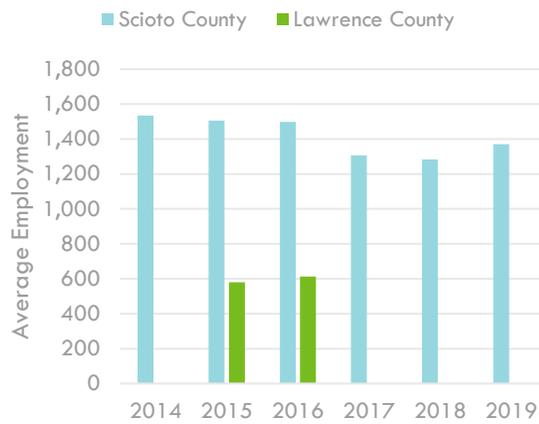


Figure F-3 Manufacturing Employment

Looking to the future, Ohio

Manufacturing employment data is not available for Lawrence County in 2014, 2017, 2018, and 2019.

manufacturing employment in the Southeast Region of Ohio (region Lawrence and Scioto Counties fall under) will decline 4.5% from 2016 to 2026¹⁵.

¹⁴ Data source: Office of Research. "Ohio County Profiles – Lawrence and Scioto Counties 2014 through 2019."

¹⁵ Ohio Department of Job and Family Services. "2026 Job Outlook, JobsOhio Network West Ohio". July 2019.

C. Industrial Recovery Projections

Table F-7 Industrial Recovery Projections by Program/Source

Year	Industrial survey	Data from other recycling facilities	Totals
2019	58,367	0	58,367
2020	58,300	0	58,300
2021	58,300	0	58,300
2022	58,300	0	58,300
2023	58,300	0	58,300
2024	58,300	0	58,300
2025	58,300	0	58,300
2026	58,300	0	58,300
2027	58,300	0	58,300
2028	58,300	0	58,300
2029	58,300	0	58,300
2030	58,300	0	58,300
2031	58,300	0	58,300
2032	58,300	0	58,300
2033	58,300	0	58,300
2034	58,300	0	58,300
2035	58,300	0	58,300
2036	58,300	0	58,300
2037	58,300	0	58,300

Source(s) of Information: Table F-6

Assuming generation at the power plant holds steady the industrial recovery projections are held constant through the planning period.

APPENDIX G WASTE GENERATION

A. Historical Year Waste Generated

Table G-1 Reference Year and Historical Waste Generated

Year	Population	Residential/ Commercial				Industrial			Excluded (tons)	Total (tons)
		Disposed (tons)	Recycled (tons)	Generated (tons)	Per Capita Generated (ppd)	Disposed (tons)	Recycled (tons)	Generated (tons)		
2015	141,949	101,374	32,922	134,296	5.18	16,582	51,352	67,934	59,779	262,009
2016	136,960	101,743	30,549	132,292	5.29	19,255	42,130	61,385	63,980	257,658
2017	141,949	123,693	24,915	148,608	5.74	20,460	55,956	76,416	72,158	297,182
2018	137,952	105,781	26,754	132,535	5.26	29,519	57,290	86,809	82,826	302,170
2019	134,777	102,220	22,913	125,133	5.09	36,513	58,367	94,880	31,802	251,815

Source(s) of Information:

Disposed from Appendix D

Recycled from Appendices E and F

Populations: Annual district reports

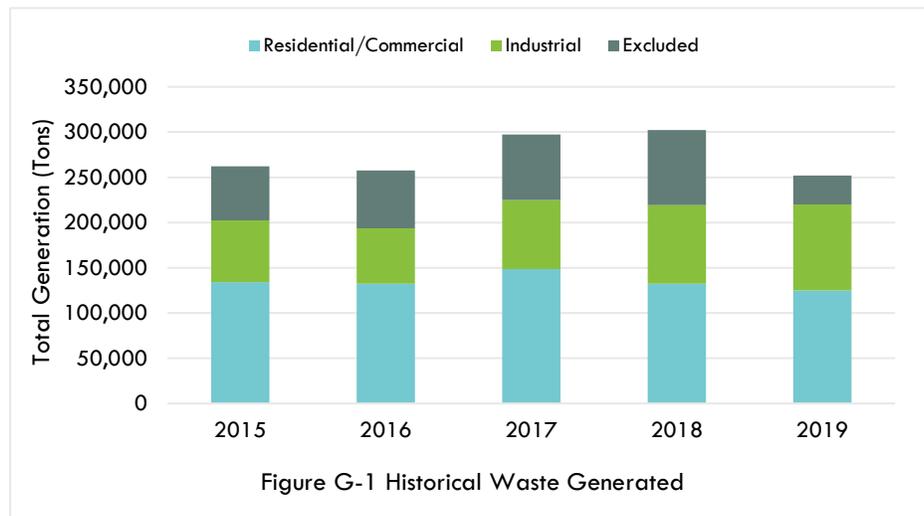
Sample Calculations:

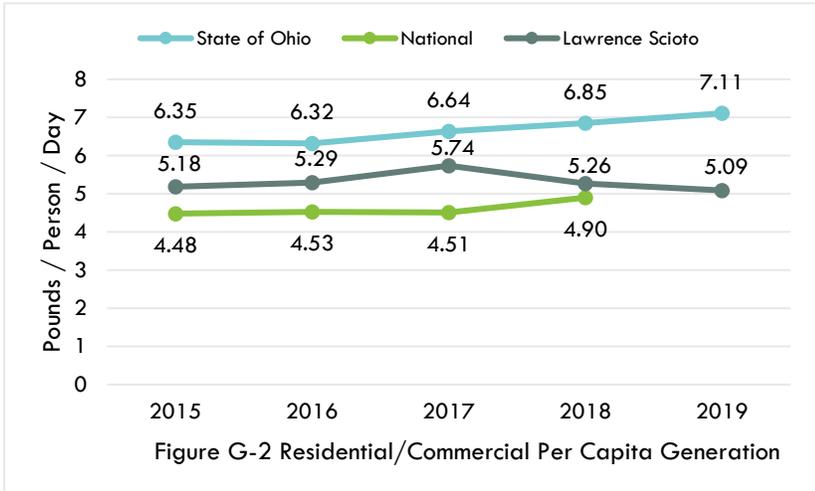
Waste Generation = disposed + recycled = generated

Per Capita Generation = ((generated * 2,000) / 365) / population

$$\text{Waste Generated} = \text{Waste Disposed} + \text{Waste Recycled}$$

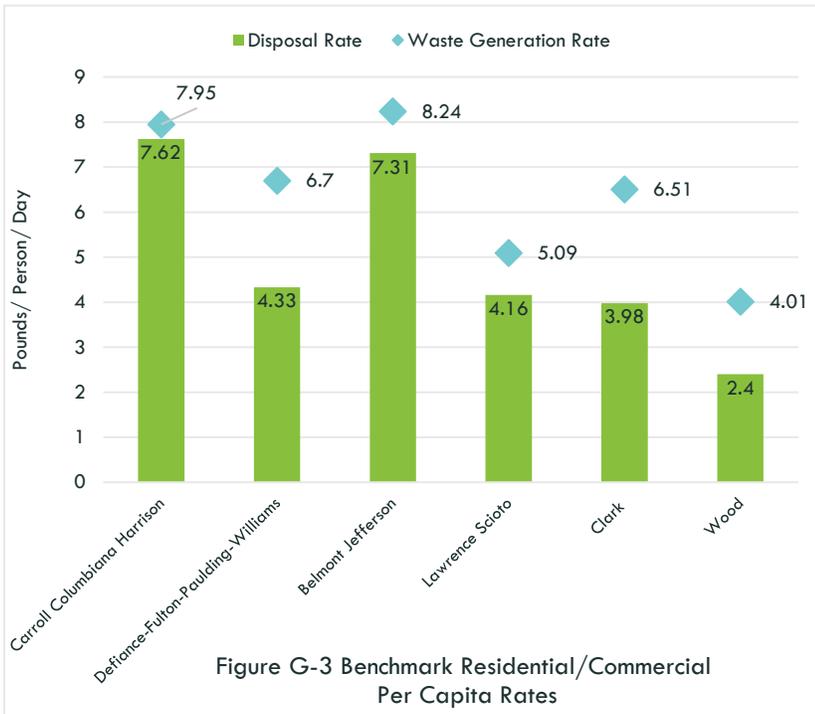
Total waste generation by the District was calculated by adding the quantities of waste disposed from Appendix D and quantities of recycled from Appendices E and F. Quantities resulting from the disposal and recycling as presented in Figure G-1 accurately represent waste generation for the SWMD. Waste generation peaked in 2017 and 2018 and declined back down to prior levels in the reference year, shown in Figure G-1. The peak in 2017 was caused by increased in residential/commercial disposal tons and excluded tons. The peak in 2018 was due to an increase in industrial recycling tons and excluded tons.





Note: National average per capita generation 2019 data was not published as of this report.
 Source(s) of information:
 National Average per Capita Date: EPA National Overview: Facts and Figures on Materials, Wastes and Recycling, <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/national-overview-facts-and-figures-materials#GenerationTrends>
 Ohio State per Capita Data: Ohio EPA Solid Waste Generated in Ohio – 2019
https://epa.ohio.gov/portals/34/document/guidance/gd_1017.pdf

The SWMD’s historical residential/commercial generation per capita data was compared to the EPA’s national average and the Ohio EPA’s state average data. Seen in Figure G-2, the District’s per capita generation rate falls in between the national and state average. The District’s rate has not followed the Ohio’s trend of increasing from 2016 onward, nor has it followed the national average uptick in 2018. (Note the national per capita generation data from 2019 was not published as of writing this report). The SWMD’s highest rate was in 2017 with an average of 5.74 pounds of material generated per person per day.



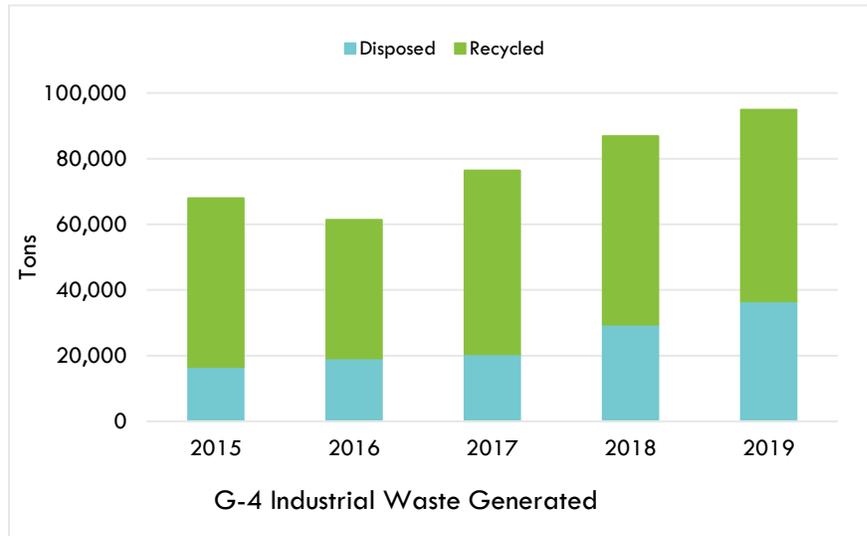
Of the 5.09 per capita generation in 2019 about 1 pound of that is diverted and 4 pounds per day is landfilled. Comparing Lawrence-Scioto with other similar population sized districts, the District’s per capita generation rate is below the 6.42 average rate, which means the District is doing well relative to peers (Figure G-3).

In terms of per capita disposal rate, just focusing on the amount landfilled per person, Lawrence-Scioto is also below the six-district average rate of 4.97.

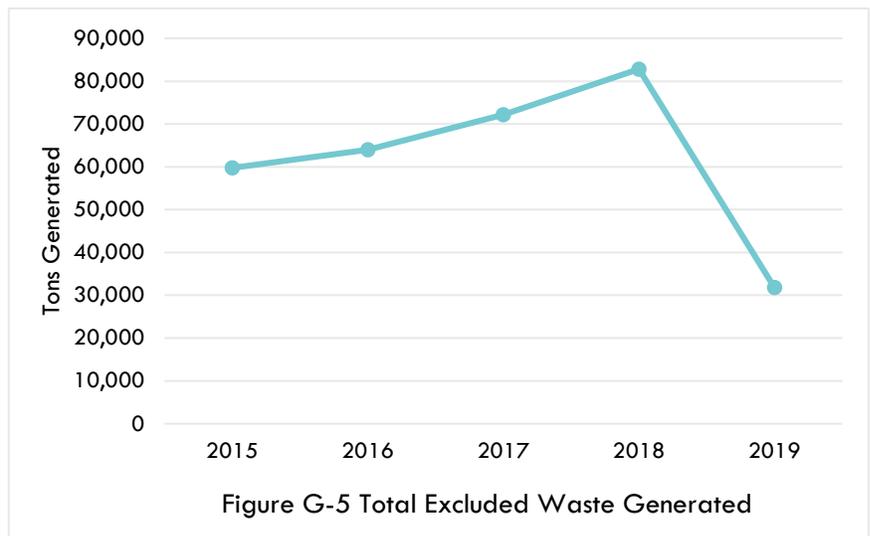
However, three of the Districts, Clark, Wood and Defiance-Fulton-Paulding-Williams, have residential/commercial recycling rates twice that of Lawrence-Scioto’s 18% diversion rate. To increase the SWMD’s recycling rate, the District

should continue to find ways to reduce waste generated and reduce waste disposed at landfills. Without strong recycling programs, the District will continue to struggle with high relative disposal rates.

Industrial generation has increased from 2015 to 2019, with a slight dip in 2016. The cause of the increase in industrial generation is mainly due to the increase in the tons disposed, especially the jumps from 2017 to 2018 and from 2018 to 2019. There is not a clear reason for this increase in tons of industrial waste disposed. The recycling tonnage has also demonstrated increases from 2015 to 2019, except for a decrease in 2016 recycling tons which caused the generation total to dip. The District's industrial recycling rate was between 60-75% during the historical period.



The total tons of excluded waste generated in the District is shown in Figure G-5. The total tons generated increased from about 60,000 tons in 2015 to over 80,000 tons in 2018. In 2019, there was a dramatic decrease in tonnage to less than half of the 2018 total. Ohio EPA waste flow data did not include 2019 excluded waste sent to Kentucky when annually this is a substantial amount.



B. Generation Projections

Table G-2 Generation Projections

Year	Population	Residential/ Commercial				Industrial			Excluded Waste (tons)	Total (tons)
		Disposal (tons)	Recycle (tons)	Generation (tons)	Per Capita Generation (ppd)	Disposal (tons)	Recycle (tons)	Generation (tons)		
2019	134,777	102,220	22,913	125,133	5.09	36,513	58,367	94,880	31,802	251,815
2020	134,279	101,842	23,934	125,777	5.13	36,693	58,300	94,993	69,686	290,455
2021	133,783	101,466	23,838	125,304	5.13	36,876	58,300	95,176	69,686	290,166
2022	133,288	101,091	23,810	124,901	5.13	37,060	58,300	95,360	69,686	289,947
2023	132,796	100,718	23,783	124,501	5.14	37,246	58,300	95,546	69,686	289,733
2024	132,306	100,346	23,759	124,105	5.14	37,432	58,300	95,732	69,686	289,523
2025	131,818	99,976	23,736	123,712	5.14	37,619	58,300	95,919	69,686	289,317
2026	131,332	99,608	23,715	123,322	5.15	37,807	58,300	96,107	69,686	289,115
2027	130,848	99,240	23,696	122,936	5.15	37,996	58,300	96,296	69,686	288,918
2028	130,366	98,875	23,678	122,553	5.15	38,186	58,300	96,486	69,686	288,725

Year	Population	Residential/ Commercial				Industrial			Excluded Waste (tons)	Total (tons)
		Disposal (tons)	Recycle (tons)	Generation (tons)	Per Capita Generation (ppd)	Disposal (tons)	Recycle (tons)	Generation (tons)		
2029	129,886	98,511	23,678	122,189	5.15	38,377	58,300	96,677	69,686	288,552
2030	129,408	98,148	23,678	121,827	5.16	38,569	58,300	96,869	69,686	288,381
2031	128,932	97,787	23,678	121,465	5.16	38,762	58,300	97,062	69,686	288,213
2032	128,458	97,428	23,678	121,106	5.17	38,956	58,300	97,256	69,686	288,047
2033	127,986	97,069	23,678	120,748	5.17	39,151	58,300	97,451	69,686	287,884
2034	127,516	96,713	23,678	120,391	5.17	39,346	58,300	97,646	69,686	287,723
2035	127,047	96,358	23,678	120,036	5.18	39,543	58,300	97,843	69,686	287,565
2036	126,581	96,004	23,678	119,682	5.18	39,741	58,300	98,041	69,686	287,409
2037	126,116	95,652	23,678	119,330	5.18	39,939	58,300	98,239	69,686	287,255

Source(s) of Information:

Disposal from Appendix D

Recycled from Appendices E and F

Populations: Annual district reports

Sample Calculations:

Waste Generation = disposed + recycled = generated

Per Capita Generation = ((generated * 2,000) / 365) / population

In the residential/commercial sector the historical and reference year data assists in forecasting waste generation. Residential and commercial waste generation is anticipated to decline at a slow rate throughout the planning period. This decline projected is based on a steady per capita generation rate so that the decrease in disposal is mainly attributed to the decreasing projected population. Diversion is projected to remain stable with the current recycling program options available and increase slightly with the new special collection drop-off opportunities.

APPENDIX H STRATEGIC EVALUATION

The state solid waste management plans establish recycling and reduction goals for solid waste management districts. At the time of the SWMD's 2017 Plan Update, Ohio had issued a 2009 State Plan but was lacking a new Format for solid waste management districts to follow. While it was encouraged districts incorporate 2009 State Plan goals it was not a requirement and Districts could submit plans following the 2001 State Plan. The SWMD's 2017 Plan demonstrated compliance with the 2001 State Plan. Programs and strategies approved by Ohio EPA in the 2017 Plan are evaluated in this Appendix H. In this Appendix, the Policy Committee completed a strategic process of evaluating its reduction and recycling efforts. To do this, the status of the reduction and recycling efforts were evaluated in the context of factors presented in the 14 analyses described in Format 4.0. The strategic program evaluation was performed on the following:

- Residential Recycling Infrastructure Analysis
- Commercial Sector Analysis
- Industrial Sector Analysis
- Waste Composition Analysis
- Economic Incentive Analysis
- Restricted and Difficult to Manage Waste Analysis
- Diversion Analysis
- Special Program Needs Analysis
- Financial Analysis
- Regional Analysis
- Population Analysis
- Data Collection Analysis
- Education and Outreach Analysis
- Processing Capacity Analysis

1. Residential Recycling Infrastructure Analysis

This evaluation of the SWMD's existing residential recycling infrastructure determines whether the needs of the residential sector are being met and if the infrastructure is adequately performing. There are many materials that can be recycled. The SWMD's waste management system relies on various collection systems and programs to divert materials from the landfill to be recycled. The residential recycling infrastructure consists of curbside programs, drop-off recycling programs, special event drop-offs, take-back retailers, reuse centers, thrift stores, and network of food rescue (church organizations, etc.) and a donation bank. The SWMD's role instituting this network of available opportunities varies.

a. Evaluation

CURBSIDE

One of the first metrics analyzed is recycling collection infrastructure. There is a lack of curbside service to County residents. Curbside recycling has been and continues to be a challenging service offering in both Lawrence and Scioto Counties. Both counties are predominantly rural (8% developed land in Lawrence, 7% in Scioto) and have low population densities (137.7 persons per square mile Lawrence, 130 persons per square mile Scioto). In addition, the cost of service is another barrier for households and/or communities. Communities feel the economic pressures of a local recycling program when other programs

compete for budgets. The SWMD and communities have seen a minority of citizens placing high value curbside recycling. Both counties need a culture change or shift with citizens and political stakeholders.

There are 3 private sector service providers offering curbside service to households. It is uncertain if they even service the entire Counties or only the higher population centers. Both counties support an open market system, which means customers have a choice of any waste hauler because the system is open to competition. In the past when curbside programs have been explored the economic challenges of providing services cost effectively has been difficult to overcome. Both Ironton and Portsmouth have higher population bases that could provide an economy of scale for curbside service.

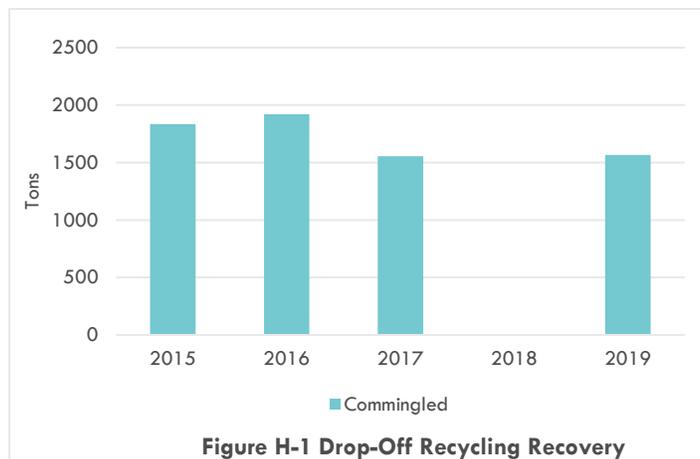
Curbside programs throughout the two Counties could demonstrate higher recovery and greater convenience. According to The Recycling Partnership’s (TRP) 2016 study, on average, Americans recycle 143-pounds per person per year via curbside recycling¹⁶. In their survey, TRP found that high performing communities captured approximately 160 pounds per person per year and that the vast majority of those communities had universal (no sign up required) single-stream cart-based curbside programs with automatic collections. For reference, on average American generates 320 to 400 pounds of recyclables per year per capita.

DROP-OFF

The SWMD contracts with a private sector service provider to service all the community drop-offs. Service contracted includes provision of container, collection, and processing of drop-off recycling to 23 urban and 8 rural locations throughout the county (in the reference year 2019). Each single stream drop-off container is 8-yards. The number of containers per site varies depending on usage. All locations are serviced weekly.

All locations are available because a host allows the drop-off containers to be placed on their property. At any time, the drop-offs are subject to change if the host requests the containers to be removed. All drop-off sites are located along transportation routes. The service provider’s containers are marked with stickers/signs showing and stating (photos and words) the acceptable materials to include in the containers. Containers are available 24/7.

The drop-offs accept plastic bottles, jugs and jars; cans (metal, aluminum), paper (magazines, newspaper) and cardboard in a single stream. Glass bottles, jugs and jars is not an acceptable item at the drop-offs. According to Ohio EPA, glass was not accepted at the request of a previous District director. The current service provider accepts glass in other surrounding solid waste management districts and would accept glass in the SWMD’s program too. The SWMD has consistent messaging for materials which is a common characteristic for successful programs.



Note: 2018 data was not reported to the District.

¹⁶ The 2016 State of Curbside Report by The Recycling Partnership: <https://recyclingpartnership.org/wp-content/uploads/2018/05/state-of-recycling-report-Jan2017.pdf>

The contract for servicing drop-offs provides total tons for all sites and does not report quantities of material collected per drop-off. After a decline was seen in 2017, the total recovery tonnage measures fairly consistent as shown in Figure H-2. The drop-off program came to a halt in October 2018 when the contractor could not fulfill contract requirements. In January 2019 the SWMD signed with a different contractor to re-instate service to the program. Due to the contract issues the SWMD also did not receive the tonnage data for 2018 and thus has no way to compare tonnages and impacts of service disruption. For comparison purposes, tonnages collected in 2019 were up about 0.7% from 2017 tonnages. Assuming the entire county population, the average pounds per capita recovered through the drop-off program is approximately 23 pounds per person per year in 2019.

Benchmarking costs and program recovery, the SWMD’s program was compared to two other solid waste management districts. Gallia Jackson Meigs Vinton, a neighboring district, and Fayette Highland Pickaway Ross both contract with the same service provider. Like the SWMD, both benchmarked districts’ drop-off programs are available 24/7.

Normalizing on a per ton or per capita level, the SWMD pays more per ton and recovers less per person to the benchmarked SWMD’s. However, this comparison may not be a straight apples-to-apples comparison in contract service costs per ton. Data was sourced from quarterly fee reports which could include additional costs in the drop-off line item, such as clean-up costs, monitor costs, enforcement, etc.

Table H-1 Benchmarked Drop-off Program (2018 data)

SWMD	Cost per Ton	Ton Per Location	Per capita Recycling (Pounds per Person per Year)
Lawrence Scioto	\$170.25	50.5	23.2
Gallia Jackson Meigs Vinton	\$142.95	59.1	30.5
Fayette Highland Pickaway Ross	\$104.51	73.0	33.2

Source:

Lawrence Scioto 2019 data obtained from SWMD.
 Fayette Highland Pickaway Ross phone survey June 2020.
 Gallia Jackson Meigs Vinton is 2018 data.

Even though the containers are well marked with stickers/signs, contamination is an issue at some of the sites.

Like other solid waste management district’s, the SWMD has taken various measures to combat contamination including enforcement. Four cameras are used to monitor problem sites and are moved as needed. Video footage can be retrieved via computer located in the SWMD office. The cameras have night vision and can be magnified to obtain license numbers, etc. Open dumping at drop-offs is investigated by the Environmental Officer. Following the investigation, a citation may be issued. Citations will result in the case going through the Prosecutor's office. Cases are tried in a combination of municipal and common pleas courts. Littering and clean air violations are tried in the municipal court, while open dumping is a felony and is tried in common pleas court.

Additionally, litter crew supervisors visit the site locations Monday through Friday to maintain cleanliness of the locations.

A question the SWMD has been considering lately is how best to combat contamination. Either users are misinterpreting the acceptable materials, or the users may be avoiding the cost of disposal. Roughly, 80% of Lawrence County and 73% of Scioto County households must subscribe to trash service meaning these households are not covered by a competitively bid waste service contract. Only 2 communities, Portsmouth and Ironton have municipal collected trash services providing services to their residents. The SWMD did not take a deeper dive into residential services to check for special pick up or bulky pick-up services. It is suspected that subscribers must pay additional fees for bulky pick-up items. This could be leading to a high percentage of subscriber collection service adding to the illegal dumping and contamination in the recycling programs so households are avoiding the costs of disposal.

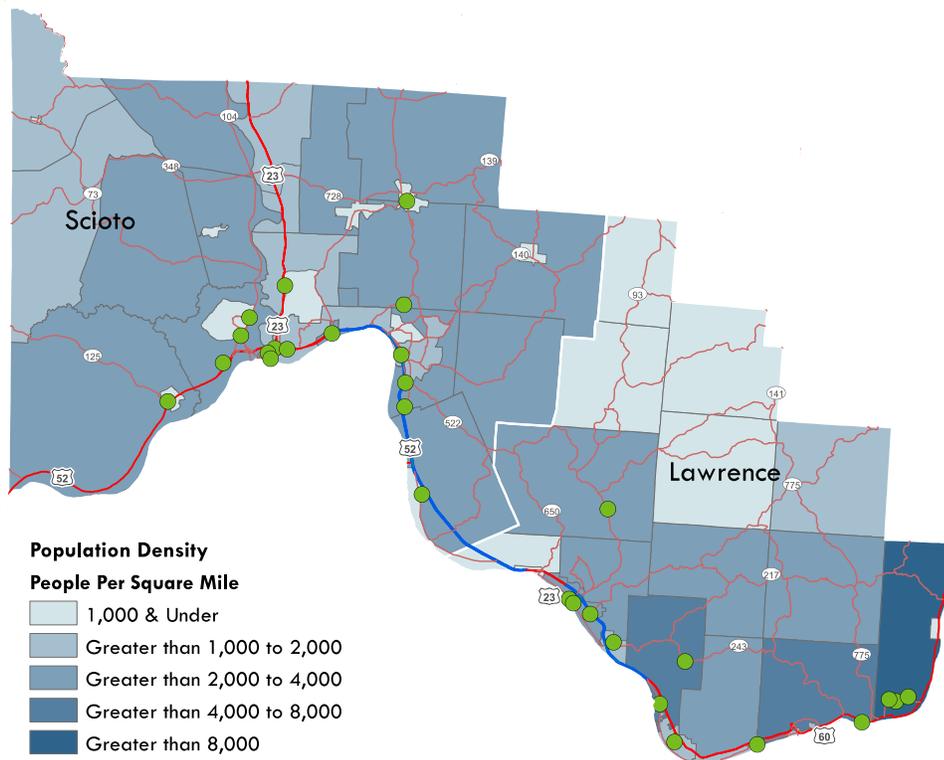


Figure H-2 Drop-off Locations (2019)

In both counties, the drop-off locations are concentrated along main transportation routes and in the more densely populated areas.

TAKE-BACK RETAILERS

Take-back retailers are other outlets for diversion. The SWMD surveys these businesses; however, if a survey is not returned, the recovery of materials to be recycled or reused is not captured. The SWMD maintains a list of take-back retailers, as well as other collection points for materials such as batteries, used oil, etc. The SWMD could identify these retailers on the SWMD website as available outlets for diverting materials.

REUSE AND THRIFT STORES

Reuse and thrift stores are available throughout both counties with this infrastructure heavily falling on non-profits and their development of reuse centers. One of the strengths shared by the two counties is that people identify with the traditional value of reuse. In fact, the Appalachian region shares this commonality. ReUse Corridor spanning Kentucky, West Virginia and Ohio was formed through grants from Appalachian Regional Commission and USDA Rural Utilities Service. ReUse Corridor is a logistics system for e-waste, cardboard, plastics, compostables, mattresses, construction materials, batteries, and medical equipment. They connect communities with supply or demand and by reintegrating the traditional values of reuse into their business models, to create jobs and financial returns.

Founding member Rural Action networked with Coalfield Development Company, who is a lead strategic partner responsible for advancing the ReUse Corridor initiative. Coalfield Development Company operates in diverse capacities ranging from financing and planning to construction to lead and collaborate on community- based revitalization projects in the Appalachian region. The ReUse Corridor initiative is a multi-stakeholder effort relying on partnerships to help obtain the goals and objectives outlined in the [Strategic Plan](#). The ReUse Corridor is hosting collection events to collect materials, to supply materials needed by other member facilities. For instance, PureCycle has a demand for #5 plastic (polypropylene). Network collection events collect the material and direct to PureCycle.

The opportunity for economic impact in ReUse exists within every supply chain. The ReUse Corridor connects the supply so if a company in Nelsonville can process mattresses and another in Ashland can handle textiles, communities throughout the region can send their recyclables there. The SWMD could collaborate with the ReUse Corridor to explore opportunities such as supply chains, collection points, etc.

Additionally, an area of focus that could be expanded is the SWMD's role to encourage support of reuse and thrift stores. Additionally, education to address waste minimization for residents and businesses could be enhanced and added to the website and across social media.

FOOD BANKS AND FOOD DONATION CENTERS

The US EPA food recovery hierarchy, shown in Figure H-3, moves from preferred to least preferred food recovery methods reinforcing the highest and best use of food waste. The top management hierarchy is reducing waste at the source. The second is feeding hungry people, where food banks and food donation centers fall. The SWMD does not actively serve a role in the management or education or food recovery, but there are synergies where the SWMD could be a resource. Could the SWMD serve an organizational role to bring all stakeholders to the table to explore the management methods available in each county? Could the SWMD develop a network? Could the SWMD provide educational support? These are avenues to explore as the Policy Committee looks at programming in the next plan update.

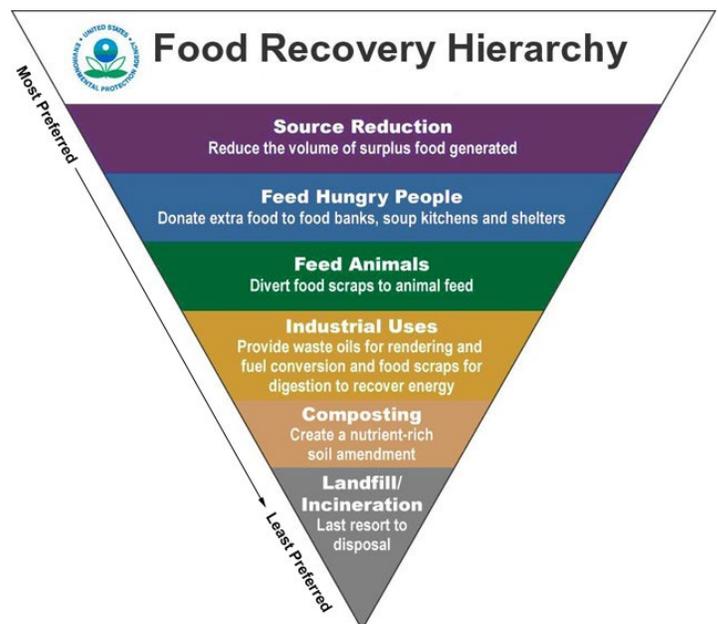


Figure H-3 U.S EPA's Food Recovery

b. Conclusions/Findings

The SWMD is averaging about a 19% diversion rate. One area to focus improvements is collection - getting materials from generators to the MRF for processing. Curbside recycling is the most convenient and demonstrated higher return of per capita recovery. The SWMD will evaluate setting a goal of achieving at least 1 curbside program in the two counties as a vision to work towards. The drop-off program is providing access to the citizens however, contamination/illegal dumping at drop-offs is abuse. Additionally, there seems to be opportunities to work with the service provider to accept glass – a material usually serviced by current service provider. The SWMD will evaluate measures needed to combat contamination/illegal dumping and material expansion. Education/outreach are a huge part of any programs success and also needs evaluation for best practices.

While take-back retailers, reuse centers, food donation and food banks offer a collection style of service to divert away from the landfill they need little support from the SWMD in their program operations. Since they do support diversion and reduction, the SWMD should explore whether they can serve a role to help promote and educate residents about the values of waste minimization, repair and reuse. The ReUse Corridor is an opportunity to take an active role in providing and promoting service which could help keep the supply chain local and help to create local jobs.

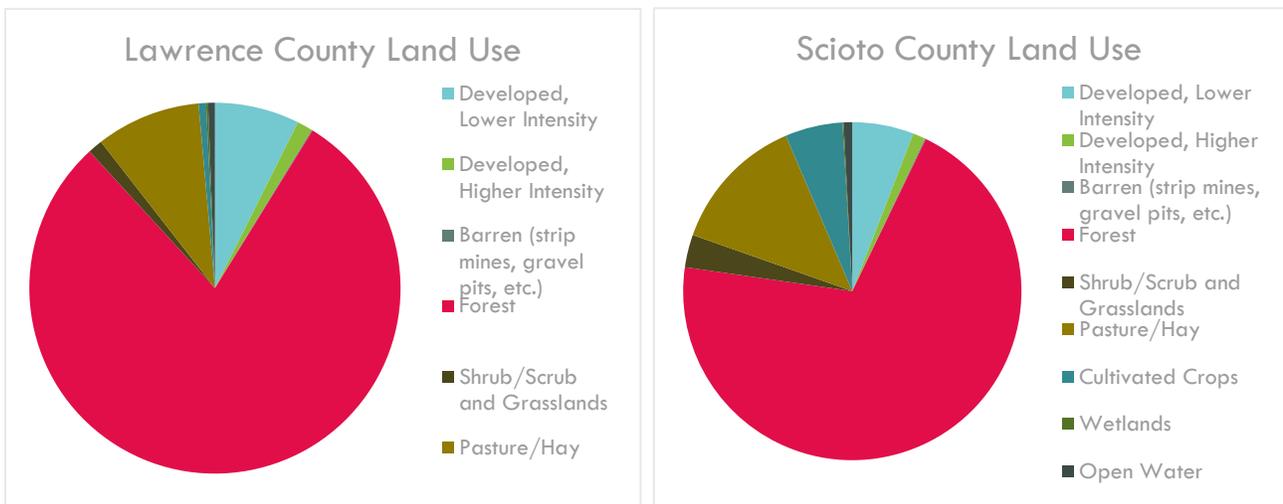
Opportunities to explore as programs for this 2023 Plan Update:

- Curbside Recycling Initiative – Setting a goal to achieve 1 curbside program in either county, here are steps the SWMD could implement.
 - Engage community stakeholders and determine the barriers for curbside recycling programs.
 - Engage service providers and explore various collection models: franchising, preferred hauler, volume-based billing, etc.
 - Conduct a community interest survey of citizens/households.
 - Explore whether the SWMD can offer economic incentive or financial support to new curbside programs.
 - Offer technical assistance (education, cost analysis, contract assistance, grant writing assistance, face-to-face meetings, etc.) to design curbside recycling programs and seek third party grant funding. For instance, The Recycling Partnership offers grants for single stream curbside lidded carts. Additionally, Ohio EPA offers Community Grants which could be applied for curbside recycling programs.
- Drop-off Program – Setting a goal to expand to add glass.
 - Engage with drop-off service provider to add glass to the accepted material list.
- Drop-off Program – Strategize drop-off locations to optimize volume and cost savings – right size service.
 - Visit all sites weekly to observe container fullness. Complete log reports, visual capacity reports, and chart to determine if any containers are being underutilized and which locations are over contaminated.
 - Based on data re-configure drop-off containers to optimize volume.
- Education/Outreach – Setting several goals 1) change behavior and cultural of citizens to move beyond “take, make, waste” system 2) increase materials recovered per capita 3) decrease contamination at drop-offs 4) enhance take-back retailers, reuse centers, food donation and food bank infrastructure
 - Develop an outreach plan to achieve each of the 4 goals identified above.
 - Develop a resource guide to donating.
 - Add available outlets for diverting materials on the SWMD website.

- Enhance SWMD social media outreach.
- ReUse Corridor Partnership – Setting a goal to be active in the ReUse Corridor by collecting materials to send for aggregation and processing and help to develop processing infrastructure within the SWMD to fill gaps identified by the ReUse Corridor
 - Engage with the ReUse Corridor to identify supply/demand gaps.
 - Pilot a collection point in one county to fill supply.
 - Explore with county economic development agencies and start-ups for technologies and entrepreneurs that could fill a supply/demand gap.

2. Commercial/Institutional Sector Analysis

This evaluation of the District’s existing commercial/institutional recycling determines if existing programs are adequate to serve the sector or if there are needs that are not being met. The analysis conducted here for this plan update evaluates the strengths and weaknesses of existing programs. The ultimate goal is to determine gaps and if there is more the District can do to address the commercial sector. Commercial/institutional sector within the District consists of the following (non-exhaustive list): commercial businesses, schools and universities, government agencies, office buildings, stadiums, amusement parks, event venues (stadiums, concert halls), hospitals and non-profit



organizations.

a. Evaluation

GEOGRAPHICAL

What is rural and urban is defined after each decennial census using specific criteria related to population thresholds, density, distance, and land use. In general, rural areas are sparsely populated, have low housing density, and are far from urban centers.

Over 90% of the District’s land is undeveloped and forested area. Much of the commercial base is located within urbanized areas such as Ironton City Portsmouth, Scioto Dale, Wheelersburg, and New Boston. These developed areas are located north/northeast of the

Figure H-4 Land Use

Ohio River which separates Ohio and Kentucky. Within Lawrence, Ironton City holds the county chair and contains the largest portion of the county population with approximately 10,000 people and the highest amount of developed land. There is also a large portion of the population within Rome Township placed around Athalia. Ironton City houses Ohio University’s Southern Campus. Scioto County’s most densely populated area is Portsmouth City with approximately 20,000 people and the town holds the seat for Scioto County. Both Lawrence and Scioto Counties are predominately rural with small portions of urban and developed land. Outside of the district’s cities the commercial basis is small with concentrated districts or parcels near villages and township town centers. The SWMD is the southernmost district in Ohio and is directly bordered by Kentucky on this southside. Lawrence County is a part of Appalachian Ohio and contains a significant portion of Wayne National Forest. Scioto county also contains portions of Wayne National Forest in addition to Shawnee State Park located in the western half of the county.

The top sectors for employment for both Lawrence and Scioto counties are Health Care and Social Assistance, Educational Services, Retail Trade, and Accommodation and Food Service. Education and health services expanded 18% in their number of establishments from 2013 to 2018 for Scioto County and 21.8% for Lawrence County. The Leisure and hospitality sector also saw an increase in total wages from 2013 to 2018 in both counties. Lawrence County increased by 19.4% and Scioto County increased by 20.2%. Notable sectors that saw a decrease in establishments, employment and wages include Natural Resources/mining (Scioto County), and Informational Services (both Counties).

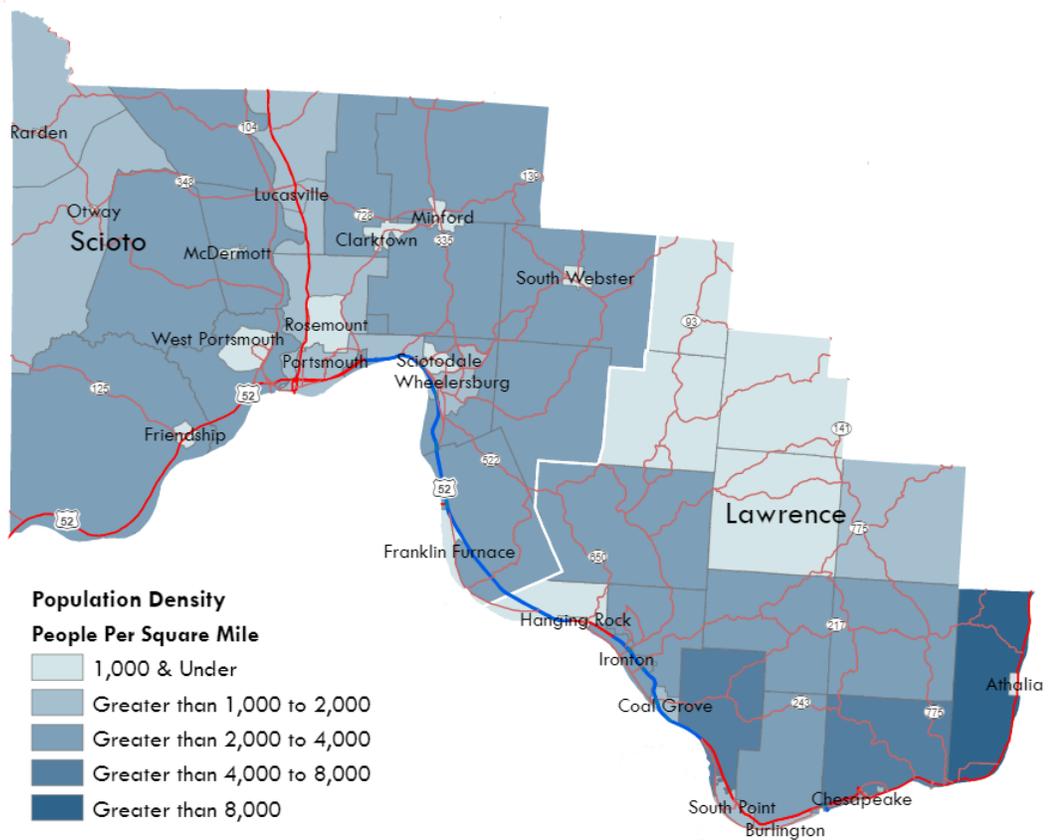


Figure H-5 Population Density

DIVERSION

Management of residential and commercial recycling makes separating commercial data from residential data challenging. Measurables obtained from this sector include recorded diversion data obtained from commercial surveys, brokers, haulers, and Ohio EPA sourced data from commercial businesses and material recovery facilities (MRFs). Using these data sources, as show in Table H-2, a total of 22,913 tons are estimated as residential/commercial recycling activities.

Table H-2 Estimated Commercial Recycling

Program/Source of R/C Recycling Data	Quantities (Tons)
Commercial Survey	11,603
Ohio EPA Commercial Data	4,017
Other Recycling Programs	3,782
Drop-off Recycling Program	1,566
Ohio EPA Scrap Tire Data	1,337
Food and Yard Waste Management	576
Other	32
Total Commercial Recycling	22,913

While the estimations are rough, this demonstration shows 51% of the residential/commercial recycling is attributed to the commercial sector

FUNCTIONALITY

Commercial businesses, schools and universities, government agencies, office buildings, stadiums, event venues (stadiums, concert halls), hospitals and non-profit organizations rely on private sector haulers for diversion programs. Businesses can request recycling service from local and/or brokerage companies. The SWMD maintains a list of local haulers providing recycling services. Local haulers collect materials and transport them to a materials recovery facility for processing. Brokerage companies handle the selling of recyclables on behalf of the commercial clients. Commercial businesses generating recyclables contact a broker to collect and deliver to an end processor. Most of the SWMD's recycling assistance to this sector focuses on one-on-one education delivered through waste audits or as requested by the school or business. The SWMD offers free "waste audits" to help establish goals prior to recycling programs implementations to schools and businesses. The waste audit is presented to the school or business to educate the importance of recycling, evaluate the waste stream, and establish program goals and monitor/define success. This program was slated to begin in 2017 but did not come to fruition. The commercial sector encompasses a variety of businesses. For purposes of the 2023 Plan, it makes sense to organize the sector into groups for analysis.

Event Venues and Parks: Public space recycling is a gap for event venues and parks throughout the SWMD. Benefits of having public space recycling is a commitment to the environment and gives the same opportunities households have at home in an away from home location. Before launching blindly into public space recycling, the SWMD would need to learn how to make public space recycling successful, cost-effective, environmentally beneficial, and consistent with the values reflected in the public spaces throughout both counties. The SWMD would need to conduct research because the infrastructure is not currently set up to accommodate recycling collection. In that research it would be good to identify the characteristics, or things that are unlikely to change, and challenges, things that can change. Research will inform the design and implementation of public space recycling. Additionally starting with a pilot program (small) will allow the SWMD to build on what was learned.

Commercial Businesses: Commercial businesses have the opportunity to contract with local haulers for recycling dumpster service. The SWMD facilitates this by offering technical assistance. Commercial businesses in Lawrence

County may be serviced with recycling from Hart Sanitation, Allied Waste, and City of Ironton. Commercial businesses in Scioto County may be serviced with recycling from Rumpke, Shawnee Sanitation, Bakers Sanitation, All Tech, Pike Sanitation, and the City of Portsmouth.

Schools, Universities, Institutions: Lawrence County has 22 public school buildings at an estimated enrollment of 8,912 and 2 private schools with 211 students enrolled. Scioto County has 29 school buildings at an estimated enrollment of 10,901, in addition to a 4-year public university, University of Ohio Southern Campus. Most of these schools are in and around the towns of Portsmouth and Ironton with a speckling of schools in the northern rural areas. A total of 37 schools (13 from Lawrence and 24 from Scioto) obtained recycling collection containers from the SWMD to establish recycling programs. The SWMD provides 33-gallon cans for large areas such as cafeterias, gyms, and kitchens and 23-gallon space-saving rectangular containers for office areas. Many schools choose to use boxes decorated by students for recycling containers in classrooms. Collection is provided either by the school directly hauling to a drop-off bin or the school contracting with a service provider.

Some schools serve as a host site for SWMD drop-off recycling containers. These are for public use as well as school use. For public schools there is currently no model in place to track or measure amounts collected with a private service provider. If they use the SWMD drop-offs their volume is included in the SWMD amounts.

There is an on-going partnership with Ohio University. Ohio University is an active site of a public recycling drop off; in addition, the school offers recycling receptacles throughout all buildings on campus. The associated Environmental Club has been established and participate in community cleanup and beautification efforts. The SWMD plans to increase waste tracking and partnerships with educational institutions across the district.

Table H-2 Inventory of School Buildings with Recycling Programs

Public/Private School District	Building	County	Recycling Program
Ironton City School District	Ironton Middle School	Lawrence	Y
Ironton City School District	Ironton High School	Lawrence	N
Ironton City School District	Ironton Elementary School	Lawrence	Y
Chesapeake Union Exempted Village	Chesapeake High School	Lawrence	N
Chesapeake Union Exempted Village	Chesapeake Middle School	Lawrence	N
Chesapeake Union Exempted Village	Chesapeake Elementary School	Lawrence	N
Dawson-Bryant Local	Dawson-Bryant High School	Lawrence	Y
Dawson-Bryant Local	Dawson-Bryant Middle School	Lawrence	Y
Dawson-Bryant Local	Dawson-Bryant Elementary School	Lawrence	N
Fairland Local	Fairland West Elementary School	Lawrence	Y
Fairland Local	Fairland East Elementary School	Lawrence	N
Fairland Local	Fairland High School	Lawrence	N
Fairland Local	Fairland Middle School	Lawrence	N
Rock Hill Local	Pre-school	Lawrence	Y
Rock Hill Local	Rock Hill Elementary School	Lawrence	Y
Rock Hill Local	Rock Hill Middle School	Lawrence	Y
Rock Hill Local	Rock Hill Sr High School	Lawrence	Y
South Point Local	Burlington Elementary School	Lawrence	N
South Point Local	South Point Elementary School	Lawrence	N
South Point Local	South Point High School	Lawrence	N
South Point Local	South Point Middle School	Lawrence	N
Symmes Valley Local	Symmes Valley Elementary School	Lawrence	N
Symmes Valley Local	Symmes Valley Middle School	Lawrence	N
Symmes Valley Local	Symmes Valley High School	Lawrence	N
New Boston Local	Glenwood High School	Scioto	N
New Boston Local	Oak Intermediate Elementary School	Scioto	N
New Boston Local	Stanton Primary Elementary School	Scioto	N
Portsmouth City	East Portsmouth Elementary	Scioto	

Public/Private School District	Building	County	Recycling Program
Portsmouth City	Portsmouth Junior High School/Portsmouth High School	Scioto	N
Portsmouth City	Portsmouth Elementary	Scioto	N
Bloom-Vernon Local	South Webster Jr/Sr High School	Scioto	Y
Bloom-Vernon Local	Bloom-Vernon Elementary School	Scioto	Y
Clay Local	Clay High School	Scioto	Y
Clay Local	Clay Elementary School	Scioto	Y
Clay Local	Clay Middle School	Scioto	Y
Green Local	Green Elementary School	Scioto	Y
Green Local	Green High School	Scioto	Y
Green Local	Green Primary Elementary School	Scioto	Y
Minford Local	Minford Primary Elementary School	Scioto	Y
Minford Local	Minford High School	Scioto	Y
Minford Local	Minford Middle School	Scioto	Y
Northwest Local	Northwest High School	Scioto	Y
Northwest Local	Northwest Middle School	Scioto	Y
Northwest Local	Northwest Elementary School	Scioto	Y
Valley Local	Valley Elementary School	Scioto	N
Valley Local	Valley High School	Scioto	Y
Valley Local	Valley Middle School	Scioto	N
Washington-Nile Local	Portsmouth West High School	Scioto	Y
Washington-Nile Local	Portsmouth West Elementary School	Scioto	Y
Washington-Nile Local	Portsmouth West Middle School	Scioto	Y
Wheelersburg Local	Wheelersburg Elementary School	Scioto	Y
Wheelersburg Local	Wheelersburg High School	Scioto	Y
Wheelersburg Local	Wheelersburg Middle School	Scioto	Y
Scioto County Career Tech	High School	Scioto	N
St Joseph, Ironton	High School	Lawrence	Y
St Lawrence	Elementary	Lawrence	Y
Sugar Creek Academy	K-10	Lawrence	N
Notre Dame	High School	Scioto	Y
Notre Dame	Elementary	Scioto	Y
COLLEGES			
Ohio University, Ironton		Lawrence	Y
Ohio University, Proctorville		Lawrence	Y
Shawnee State		Scioto	Y
TOTAL NUMBER OF BUILDINGS			61
TOTAL NUMBER OF BUILDINGS WITH SERVICE			37

Government Agencies, Office Buildings: Both Courthouses, Municipal Court Buildings, City halls and Village Halls have recycling containers placed in close proximity. This allows for convenient recycling opportunities for government employees.

Challenges/Barriers

- Collection service cost barriers
- Distance of rural commercial businesses and institutions from reasonable collection facilities
- Low survey response rates
- Lack of waste audit requests
- SWMD website contains limited information and resources
- Low interest in recycling from businesses
- Gap in waste data from private haulers

b. Conclusions/Findings

The SWMD is averaging about a 18% diversion rate and it's estimated the commercial sector is contributing about 51%. Schools are typically large generators of paper, cardboard and other materials so adding more schools with collection programs could increase the diversion rate. Education is also proven to increase diversion. Two areas to focus education is directly to users to participate in already existing programs and directly to stakeholders (administration, environmental services, etc.) to develop the programs.

Opportunities to explore as programs for this 2023 Plan Update:

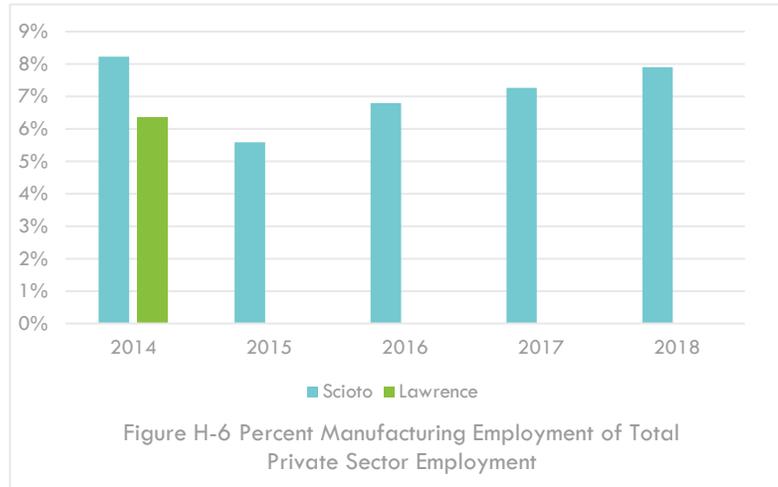
- Commercial/Industrial Education and Technical Assistance – this is an existing program. Consider modifying as follows:
 - Instead of relying on commercial businesses to contact the SWMD, actively commit to reaching at least 5 businesses a year to conduct a waste audit, help set up a recycling programs, etc.
 - Target working with 2 school districts a year incorporate the entire school district with recycling programs. Begin with districts that have some buildings with programs. Target audience is top management level within the school district. Continue to provide in-school large area recycling receptacles.
 - Develop a tool kit for how to start a recycling program at your place of work.
 - Add a designated business resource page to the SWMD website.
 - Include business recycling and resource posts to the social media posts.
 - To increase participation to users with existing programs add a material-specific campaigns drive.
- ReUse Corridor Partnership – There could also be a need for electronic recycling from the health care and the educational sectors. Setting a goal to be active in the ReUse Corridor by collecting materials to send for aggregation and processing and help to develop processing infrastructure within the SWMD to fill gaps.
 - Engage with the businesses to inventory need for e-waste recycling.
- Public Space Recycling - Research to identify the characteristics, or things that are unlikely to change, and challenges, things that can change.

3. Industrial Sector Analysis

This evaluation of the industrial sector determines if existing programs (offered either through the SWMD or other entities) are adequate to serve that sector and determine if additional programs are needed to support the industrial manufacturers in Logan County.

a. Evaluation

As shown in Figure H-6, manufacturing employment in both counties is less than 10% of total employment. (Note: Lawrence County Data was not available after 2014.) Earlier in this plan update, Appendix F concluded the average number of manufacturing establishments in both County’s has been fairly constant in the past five years. The 2026 Ohio Jobs Outlook estimates that in Southeast Ohio (in which both counties are grouped) a projected loss of 4.5% employment in manufacturing.



Manufacturing employment data is not available for Lawrence County in 2014, 2017, 2018, and 2019.
 Source: Ohio Office of Research “Ohio County Profiles, Lawrence County.” Years 2016-2020.
 And Ohio Office of Research “Ohio County Profiles, Scioto County.” 2020. Years 2016-2020.

According to web-based research, the largest industries by employment in the SWMD include the following:

Table H-3 SWMD Major Manufacturing Employers

Company	County
JennMar McSweeney Inc	Lawrence
Liebert Corp/Vertiv	Lawrence
McGinnis Inc	Lawrence
G&J Pepsi-Cola Bottlers Inc.	Scioto
OSCO Industries	Scioto
SunCoke Energy	Scioto
Taylor Lumber Inc.	Scioto

Source: Ohio Office of Research “Ohio County Profiles, Lawrence County.” 2020. Ohio Office of Research “Ohio County Profiles, Scioto County.” 2020.

The Districts’ industrial sector businesses are primarily situated along the Ohio River. The Point Industrial Park is a major industrial area in Lawrence County, also along the Ohio River. The Park has key transportation location benefits being on the water, being on a rail line and being nearby a major interstate highway.

In 2018, HarbisonWalker opened a new 130,000 sq. ft. refractories facility at the Park, which brought in an additional 40 new jobs. It is unknown whether this Point Industrial Park offers recycling or waste management services to the businesses located in the park.

Some of the industries operating in the District, particularly the national and multi-national corporations, have sustainability plans (corporate responsibility reports), environmental stewardship, or recycling activities in place. Industries are financially responsible for implementing their own recycling programs. The industrial survey provides some information on total recycling of the responding manufacturers; however, little is known about waste disposed by these companies.

A 2018 study by JUST Capital analyzed 875 of the largest companies in the U.S. and found that only 136 of those companies disclosed the total amount of waste produced and recycled in a given year, and that the average recycling rate for the companies that did report was 54%¹⁷. These results show that many large companies have considerable work to do regarding waste transparency and reporting and recycling efforts.

While some information on recycling is known through the voluntary survey effort, there are challenges with area industries disclosing recycled data and collecting responses from surveys. The SWMD conducts annual surveys, reaching out to a list of industrial businesses to gather recycling data. The number of responding industries is flat at 16 industries responding (Table H-4).

Table H-4 Number of Survey Responding Industries

Survey Year	Number
2017	16
2018	16
2019	16
2020	16

Most of the recycling programs implemented by the industrial sector were spearheaded by those entities with no intervention from the SWMD. The District is available as a resource for industrial generators in the County. Engagement with this sector is challenging because waste streams generated are specialized, manufacturing is proprietary, and / or businesses have on-site staff to manage the waste stream.

The average recycling / recovery rate from 2015 to 2019 was 68%. The largest recovered product from the industrial stream was flue gas desulfurization (FGD) material which accounted 80% of the recovery stream. FGD is a process that removes sulfur dioxides from flue gas produced by coal-fired power plants. The process generates a solid material that can be recovered and used in a beneficial manner in the District. The recovery FGD in the District comes from the Suncoke Energy facility located in Scioto County. The reporting and tracking for this material may change in the coming years, which could heavily impact the District's recovery rate.

The SWMD does not offer assistance to industrial businesses. The District could work to partner with The Point Industrial Park and the Lawrence Economic Development Corporation (LEDC) to establish a workgroup for industrial waste issues. The District could help with educational trainings and collateral depending on the needs of the group.

b. Conclusions/Findings

The SWMD has not prioritized the industrial sector in its efforts to boost recovery in the District. The SWMD will need to provide at least three programs to the industrial sector to meet Ohio 2020 State Plan requirements. Potential opportunities the SWMD could consider:

- Promoting Ohio EPA's Material Marketplace¹⁸

¹⁷ Forbes.com "These Five Companies Are Leading The Charge On Recycling." April 20, 2018. JUST Capital and Hernando Cortina.

¹⁸ <https://ohio.materialsmarketplace.org/>

- Obtaining and maintaining up-to-date contact information for staff managing the recycling program in hopes to achieve responses to surveys
- Connecting with local economic and industrial business partners to determine the desire for a materials management working group
- Promoting the EPA’s Sustainable Management of Construction and Demolition Materials¹⁹ webpage to the District’s construction companies

4. Residential/Commercial Waste Composition Analysis

This evaluation of the SWMD’s residential/commercial composition analysis describes and evaluates the wastes that make up the largest portions of the residential/commercial waste stream. The evaluation outlines what programs are in place to address these waste streams and what programs the SWMD should evaluate to further address those wastes.

a. Evaluation

$$\text{Waste Generation} = \text{Wastes Disposed} + \text{Wastes Diverted}$$

$$125,133 \text{ tons} = 102,220 \text{ tons disposed} + 22,913 \text{ tons diverted}$$

In 2019, the SWMD generated 125,133 tons of residential and commercial material, 18% of which was recycled. The diversion rate of the SWMD has fluctuated from 17% to almost 25% during the four-year historical period (2015-2019). To better understand the roughly 80% not being recycled (the materials being landfilled), waste characterization data from two sources²⁰ was applied to the district’s 102,220 tons landfilled.

The waste characterizations used to estimate SWMD’s landfilled material composition come from the Ohio EPA and the Solid Waste Authority of Central Ohio (SWACO). SWACO regularly performs waste sorts to understand the composition of their District’s landfilled material stream. The Ohio EPA’s 2019 report on the economic impact of recycling provides a characterization of statewide disposed waste based on a national characterization estimation tool. While

Table H-5 Waste Composition Percentages

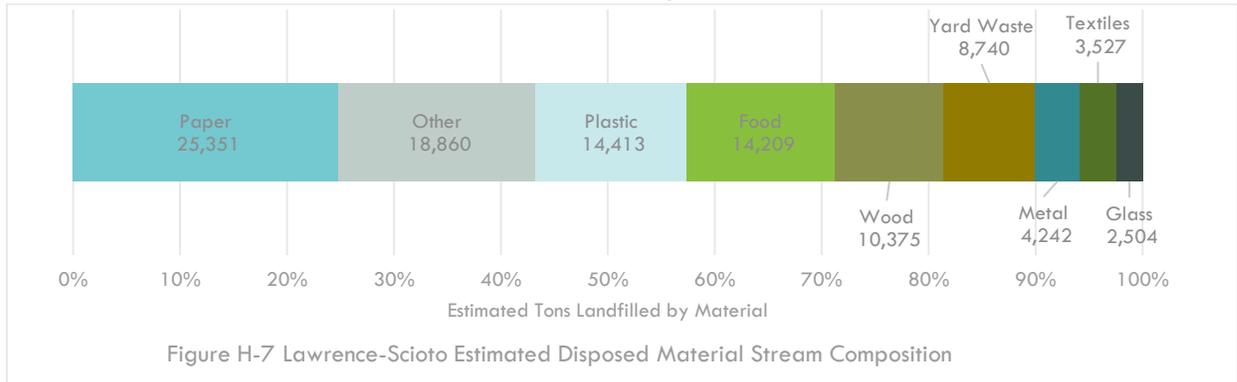
MATERIAL	OHIO EPA	SWACO	DIFFERENCE
Other	21.5%	15.4%	6.1%
Paper	21.3%	28.3%	7.0%
Food	13.1%	14.7%	1.6%
Wood	11.9%	8.4%	3.5%
Plastic	11.6%	16.6%	5.0%
Yard Waste	10.8%	6.3%	4.5%
Metal	4.9%	3.4%	1.5%
Textiles	2.9%	4.0%	1.1%
Glass	2.0%	2.9%	0.9%

the two sources provide comparable data, there are notable differences (see Table H-5). The largest differences between the two waste compositions were in the categories of paper (SWACO 7.0% more), other (Ohio EPA 6.1% more) and plastic (SWACO 5.0% more). Differences can be because of how studies define and categorize materials included and the scopes of the studies. Without specific waste composition

¹⁹ <https://www.epa.gov/smm/sustainable-management-construction-and-demolition-materials>

²⁰ Ohio EPA 2019 Economic Impact Potential of Recycling in Ohio and SWACO 2019 Waste Characterization Study

data from Lawrence-Scioto, it is not possible to determine which estimate is closer to representing the District's landfilled waste. As a result, both estimates are presented here for reference.

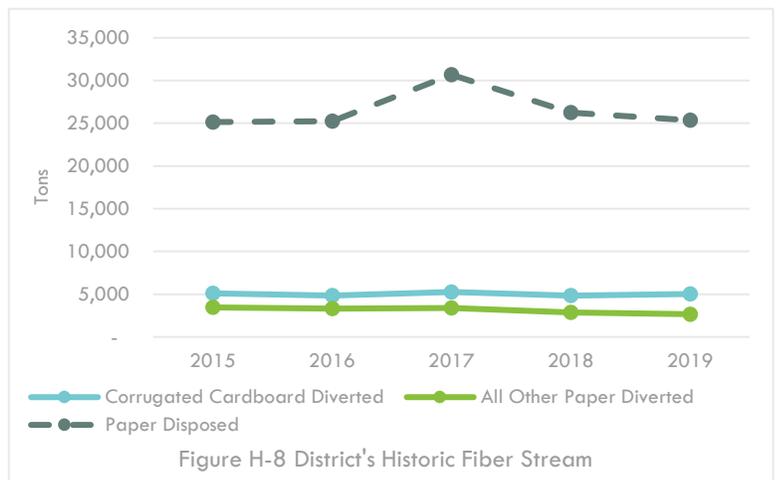


Using the average of the two waste composition studies multiplied by the SWMD's 2019 disposed tons, an estimate of the municipal solid waste stream composition was developed. By assessing the composition of landfilled material, the SWMD can gain insights into which materials to target for diversion efforts. For example, as shown in Figure H-7, the largest components of the residential/commercial trash stream are projected to be paper, including cardboard and office paper, plastics and food. These top categories which can be recyclable/compostable make up over half of the residential/commercial waste landfilled. (Note the 'other' stream usually is made up of hard-to-recycle materials such as electronics and non-recyclable materials such as composites making it a more difficult stream to focus on diverting.)

Comparing the status of programs in the reference year with how programs were designed in the 2017 Plan, the SWMD was able to implement the 2017 Plan but would have liked to see better progress resulting in more diversion and lower per capita disposal rate. The SWMD also fell short on meeting goals to discuss curbside recycling with Ironton and Portsmouth community leaders. The SWMD did improve drop-off signage, a step for better education/awareness for residents. However, as mentioned in Appendix H Residential Recycling Infrastructure Analysis, the per capita recovery (includes all materials) for the SWMD's drop-off program is low when benchmarked to other similar programs. Adding signs is one step that needs to be coupled with additional outreach strategies to achieve behavior change. Additionally, the efforts made to curb illegal dumping did not result in behavior change. Based on this analysis the SWMD realizes there is too much easily divertible material still ending up in the landfill.

Fiber (Paper Materials) Waste Stream:

Using the waste composition estimates from the previous Figure H-7, an estimate of at least 25,000 tons of paper category materials are being disposed at the landfill. The SWMD recycled 7,683 tons of paper (including cardboard) in 2019, capturing about 23% of the paper generated in the county. Cardboard and paper materials have potential to be recovered at even higher rates. The American Forest and Paper Association stated the U.S paper



recovery rate in 2018 is approximately 68.1%²¹.

Figure H-8 shows the SWMD's diversion of residential/commercial of cardboard and paper and also the estimated total paper disposed over 5 years including the reference year. While the amount of cardboard tons diverted has remained roughly the same from 2015 amounts to 2019 amounts, the tons of paper diverted has declined about 23% during the same time period.

The residents of the District appear to have sufficient access to paper and cardboard recycling through drop-off recycling sites throughout the counties. The District has 8 full time, rural drop-off centers and 23 full time, urban drop-off centers. The District contracts with a private sector service provider to provide service to the sites. The drop-offs are open 24/7 and accept newspapers and inserts, magazines, catalogs, junk mail, envelopes, phone books, paper grocery bags, cereal and snack boxes (paperboard), cardboard and clean pizza boxes. Each drop-off consists of one to ten 8-yard dumpster for single stream recycling. The containers are serviced either once or twice a per week. An issue with drop-off is getting residents to use the containers and use them properly.

Implementing a paper reduction campaign in the commercial, residential and local government sectors is a way to reduce the volume of paper to be managed. While source reduction of material does not impact the diversion rate in the same way as recycling (reduction removes tons out of the denominator instead of the adding recycling tons to the numerator), source reduction is an environmentally and economically savvy way to decrease materials being disposed. Source reduction programs also mean that processing / recycling capacity is not impacted in the same way it is when recycling programs are increased. An example of a commercial and local government paper reduction campaign would be to promote electronic reporting, forms, and communication methods and smart printing practices. An example of a residential program to reduce paper would be to put out targeted communications to residents to encourage stopping junkmail. Based on Lawrence-Scioto's population and the average amount of junkmail American adults receive, the residents in the counties could be receiving a total of 2,760 tons of junkmail per year.²² That amount of paper equates to 19,000 to 26,000 trees used annually.²³

Due to the global coronavirus pandemic in 2020, cardboard use and recycling has increased due to an increase in online shopping and delivery. The average commodity revenue pricing for cardboard has more than double in 2020 than the low revenue rates of 2019.²⁴ Sorted residential papers and newspaper (Grade #56) and mixed paper (Grade #54) have also seen much stronger pricing in 2020 than the previous year. While global markets fluctuate, new higher commodity prices are advantageous while trying to grow or increase participation in recycling programs.

Yard Waste and Food Waste Stream:

Based on the waste composition estimates from the Ohio EPA and SWACO, there is approximately 14,200 tons of food, and 8,740 tons of yard waste being landfilled annually in the SWMD. Since this composition includes urban areas, the rural nature of Lawrence and Scioto Counties may not be as well represented in this composition study when it comes to yard waste and wood waste. Despite Ohio legislation in 1995, attempting to limit and restrict the use of landfills for disposal of yard waste, some residents still manage

²¹ <https://www.paperrecycles.org/statistics/paper-paperboard-recovery>

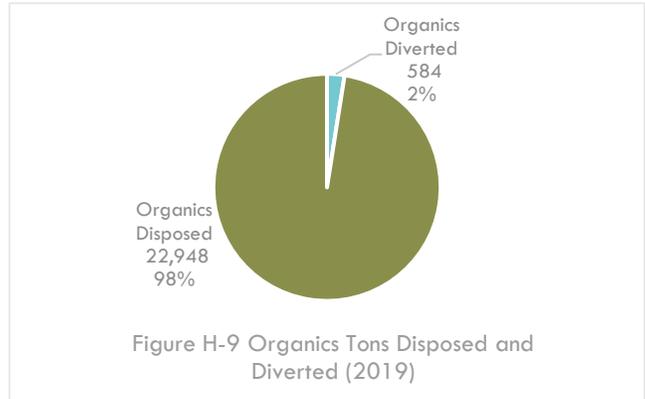
²² Let's Ban Junk Mail Already Sierra Club <https://www.sierraclub.org/sierra/let-s-ban-junk-mail-already#:~:text=Similarly%2C%20junk%20mail%20is%20a,of%20annual%20US%20paper%20waste.>

²³ Trees into Paper Conservatree <http://conservatree.org/learn/EnviroIssues/TreeStats.shtml>

²⁴ Recyclemarkets.net

their yard waste at the curb with their household trash. If residents mix yard waste with municipal trash the yard waste is disposed in the landfill.

Figure H-9 represents the tonnage and percentage of food and yard waste diverted and estimated to have been disposed of in 2019. As shown in the figure, only about 2% of the food and yard waste generated in the SWMD are recovered. In 2019, the majority of organic material diverted was food waste (580 tons food waste, 4 tons yard waste). These streams represent some of the largest opportunities for waste reduction and recycling in the SWMD.



Yard Waste: The counties averaged a 1% capture rate for yard waste from 2015 to 2019.

Benchmarking to other rural districts as shown in Table H-6, the tonnage diverted is similar to those lacking in-district yard waste infrastructure.

SWMD	Yard Waste Diverted (tons)	Number of In-District Yard Waste Facilities Operating
Lawrence Scioto	4	None
Gallia Jackson Meigs Vinton	0	None
Belmont Jefferson	0	None
Brown	1,822	1 drop-off managed by SWMD and 1 - Class IV not publicly available
Athens Hocking	1,432	2 - Class II, 1 - Class III, 1 - Class IV, and 3 community leaf collection programs

The SWMD has no registered composting facilities in Lawrence or Scioto County. The City of Portsmouth is the only political jurisdiction providing yard waste management options for its residents. The City provides curbside collection of leaves seasonally. There are also no registered composting facilities in the surrounding counties (Adams, Pike, Jackson, Gallia).

In the 2017 Plan, the District planned to implement the following initiative starting in 2017 to boost yard waste diversion:

- Initiative LS-3.1: Education for Ironton/Portsmouth Residents. The District planned on providing education to residents about the curbside leaf pick-up to promote the program. The District was also going to work on a system to quantify the collection tonnage.

The initiative was not implemented.

With the limited composting facilities within the SWMD and no registered composting facilities in the surrounding counties (Adams, Gallia, Jackson, Pike), increasing yard waste collection may be challenging. However, there is still opportunity for the SWMD to encourage diversion of organics by providing outreach and education around backyard composting, smart landscaping, grass-cycling, and leaf mulching or mowing in place.

Food waste: Using the composition estimates, the county generates of an average of 15,400 tons of food per year and only diverts an average of 4%, disposing of an average of 14,900 (based on data from 2015 to 2019). The SWMD’s diversion comes from grocery store hauler data.

Food waste can occur along the supply chain: farms, manufacturers, consumer-facing businesses (restaurants, grocers, etc.), and homes. Large food waste generators can include the residential, restaurants & caterers, food manufactures / processors, food wholesalers, grocers & markets and other large businesses or institutions such as hospitals and schools.

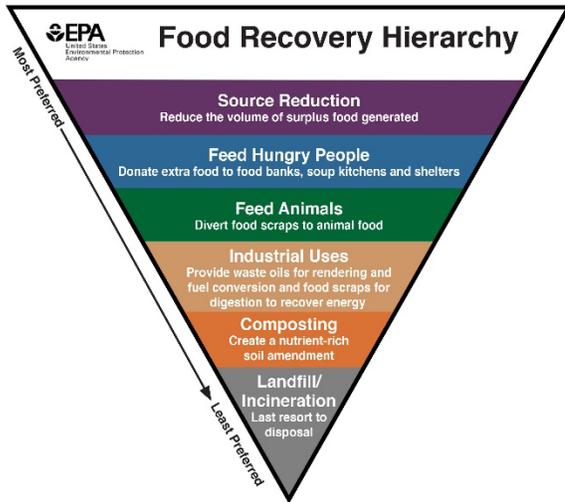


Figure H-10 U.S. EPA’s Food Recovery Hierarchy

Source(s): <https://www.epa.gov/sustainable-management-food/food-recovery-hierarchy>

The SWMD does not have any Class II compost facilities, which are permitted to be able to accept and process food waste. The closest Class II facilities are in Athens County, approximately 85 miles away from the SWMD office. At over a 90 minute drive one-way, these facilities are two far for the SWMD or private haulers to transport organic material for composting. Organics, especially food waste, is heavy due to it’s high moisture content and therefore too cost prohibitive to transport long distances. Stores such as Walmart publish data showing their efforts to follow the food recovery hierarchy (figure H-10) so when they report diversion data it is not clear if they donated food to people or animals, composted, anerobic digestion, etc. The top levels of the hierarchy generate the most benefits for the environment, society and the economy. Walmart uses this hierarchy as a guide to put food that

might otherwise go to a landfill to its highest and best use.

Without sufficient infrastructure for composting discarded food, the SWMD should first focus on reducing of food waste and increasing food rescue. Residential food waste represents a significant opportunity for reduction and food rescue, which are the U.S. EPA’s most preferred methods of dealing with food waste (see Figure H-10). The NRDC found that the residential sector accounted for 30-50% of a cities’ total food waste generated and that of the food discarded by residents nearly 70% of the food wasted was edible.²⁵ At the same time, roughly 1 in 8 people in the U.S. experience food insecurity.²⁶ In 2019, an estimated 16% of Lawrence County’s population and an estimated 22% of Scioto County’s population were considered below the poverty line. The SWMD could seek to increase food rescue and donation to reduce landfilling edible food while also supporting the SWMD’s more vulnerable populations.

Plastic Waste Stream:

Residential/commercial estimated waste composition identifies plastics as one of the larger percentages of waste streams being landfilled. Based on the waste composition, there could be up to 14,400 tons of plastics being landfilled in the county.

²⁵ Food Matter: What We Waste and How We Can Expand the Amount of Food We Rescue, Oct 2017, NRDC.

<https://www.nrdc.org/sites/default/files/food-matters-ib.pdf>

²⁶ Food Waste, NRDC. <https://www.nrdc.org/food-waste>

The SWMD accepts plastic bottles and jugs with a resin code #1 or #2 at recycling drop-off sites. Resin

Symbol	Code	Description	Examples
	#1 PET(E)	Polyethylene terephthalate	Soda & water bottles, salad dressing bottles
	#2 PEHD or HDPE	High-density polyethylene	Milk jugs, shampoo & conditioner bottles
	#3 PVC	Polyvinyl chloride	Window frames, bottles for chemicals, flooring
	#4 PELD or LDPE	Low-density polyethylene	Plastic bags, buckets, soap dispenser bottles, plastic tubes
	#5 PP	Polypropylene	Bumpers, car interior trim, industrial fibers, yogurt tubs
	#6 PS	Polystyrene	Toys, flower pots, ashtrays, trunks, "Styrofoam"
	#7 O(ther)	All other plastics	Bio-based plastics

Figure H-11 Plastic Resin Codes

codes can confuse residents as they only relate the plastic material type, not whether something can be recycled (see Figure H-11 for resin code reference guide). The SWMD should monitor the recycling collected from the drop-offs to see the level of plastics contamination and the most commonly mistaken items. The SWMD also accepts aseptic and gable top cartons (like juice, plant milk, milk or broth containers) which can be difficult to recycle due to their plastic linings.

The SWMD is accepting the two most commonly accepted types of plastic items and resins, #1 and #2 bottles and jugs, at a time when markets are challenged. The National Sword Policy from China in early 2017, disrupted the global plastic and paper scrap markets and caused declines to acceptance of plastics in recycling programs due to the lack of end markets. In 2020, the global COVID-19 pandemic has caused significant declines to the average commodity revenue prices for plastics vs. 2019 prices.²⁷ Unlike the fiber markets, which have benefited from the pandemic (an increase in cardboard demand as a result of increases in e-commerce and shipping), the plastics markets have faltered creating more challenges to programs looking to increase plastic recycling.

Pharmaceuticals:

While the waste compositions used to estimate the SWMD’s disposal stream composition are not granular enough to estimate pharmaceuticals disposed of in terms of weight, pharmaceuticals are still important to dispose of properly. Proper disposal of unused or expired drugs can help protect the environment from such chemicals leaking into ground water and protect people from abusing or inadvertently ingesting drugs.

The SWMD has a drug take-back program, where the SWMD hosts an annual event in each county to take-back and properly dispose of unused medicines. The SWMD hosts the event in partnership with the local Sheriff’s Departments from both counties. The SWMD also collects pharmaceuticals during the twice annual HHW collection event.

Lawrence County and Scioto County Sheriff’s Offices both also have prescription drug drop boxes that residents can utilize during office hours. The SWMD could highlight these drop-boxes on the SWMD’s website to encourage residents to use them outside of take-back events.



²⁷ Recyclingmarkets.net

b. Conclusions/Findings

The SWMD's estimated waste composition data reveals that there are opportunities to increase diversion of fiber (paper material), yard waste, food waste and plastics. The SWMD diverted about 18% of the total residential/commercial waste generated in 2019. While the SWMD has challenges to increasing recycling of these streams (rural location, distance and transportation of materials, lack of end markets and processors, lack of curbside recycling and composting), there are still opportunities to increase diversion of these materials. To fund additional programs, the SWMD could seek out state and other grants.

With low capture rates, the SWMD could look at programs to divert additional fiber (paper materials) stream from the landfill. Opportunities to explore as programs for this 2023 Plan Update:

- Drop-off Program – Setting a goal to increase participation in the drop-off program.
 - Obtain a baseline tonnage.
 - Conduct a community survey to understand best method of communication platform to reach audience.
 - Develop SWMD branded collateral (e-flyers, social media posts, print or radio media) with short direct messages to recycle and where.
 - Brand all drop-off sites with SWMD branding signage and contact information for reaching the SWMD. This will be helpful to create a culture for users to report when sites have been abused.
 - Develop single commodity educational campaigns targeting cardboard and paper to recycle. Include positive messages that speak to audience – job creation, commodity value, etc.
 - Set an implementation plan for the education roll-out and measure before and after for campaign impacts.
- Education/Outreach - Setting goals to 1) change behavior and cultural of citizens to reduce waste 2) educate source reduction practices to businesses
 - Implement and promote a residential junkmail reduction education campaign, focused on junkmail and other ways residents can prevent paper generated and disposal
 - Develop a list of source reduction actions businesses and local governments can implement
 - Offer workshops or training programs for better printing practices and paper reduction techniques

Low diversion of yard waste is expected because the county is rural in nature. In rural counties, backyard composting is common practice. With limited compost facilities and curbside organics collection, other cost effective yard waste management opportunities to explore as programs for this 2023 Plan Update include:

- Yard Waste Management – this is an existing program. Consider modifying as follows:
 - Promote programs focused on disposal alternatives like grasscycling where mowed grass is left on lawns to provide nutrients for the soil or backyard composting.
 - Utilize social media for blasts and promotions such as at the beginning of the fall to promote leaf mulching and again in early spring to promote grasscycling.
 - Develop a home composting workshop and incorporate organics reduction.
 - Offer backyard compost bin sales could help increase awareness and the practice of backyard composting for alternative management methods.

- As written in the 2017 Plan, increase yard waste education for Portsmouth residents since residents have access to leaf pick up. Also, work with local governments to develop a measurement estimation of leaves diverted.
- A more active role such as yard waste collection, drop-off, or assistance for private development of composting facilities are all activities that could be planned and implemented.

Food is another waste stream demonstrating a low capture rate. The SWMD does not have a centralized in-district infrastructure, such as a class II compost facility or anaerobic digester, to divert food waste from the landfill. These types of technologies will require a significant financial investment and programs/strategies to ensure feedstock and market demand for the finished product. Types of strategies the SWMD could utilize to increase food donation and reduce food waste in the 2023 Plan include:

- Education/Outreach - Setting goals to 1) change behavior and cultural of citizens to reduce waste 2) educate source reduction practices to appropriate businesses
 - Consumer in-home messaging campaign - The most significant impact on food waste generated within homes will result from consumer behavior change. Change must be effected by increasing consumer awareness and readiness to change baseline behavior related to purchasing, storage and handling, and preparation of food in homes.
 - Increase awareness of food waste and associated costs
 - Provide tips to reduce food waste
 - Promote materials such as USEPA's developed 'Food: Too Good to Waste' toolkit to residents
 - Promote 'imperfect' produce
 - Promote food donation
 - School and cafeteria campaign - Foodservice managers need data to be able to measure the amount of food they are purchasing and best match that inventory to the food they are serving. Lack of information and data is a core impediment to reduction at foodservice establishments in back of house.
 - One-on-one engagement to share information on food waste tools and tracking systems (like LeanPath 360) that institutions can implement on site to help prevent food waste.
 - Write case studies and highlight local cafeterias implementing success
 - Explore policies and economic incentives the SWMD can provide to boost food waste reduction in the institutional and commercial sectors (e.g. making grants available for large institutions to install fridges to preserve donated food longer)
- A more active role such as food waste collection, drop-off, or assistance for private development of composting facilities are all activities that could be planned and implemented.

Plastics are a challenging waste stream because the MRF processor limits the plastics accepted. However, there are still potential ways the SWMD could work to improve or expand plastics recycling in the 2023 Plan:

- Drop-off Program
 - Focus on education around increasing the recycling of plastic bottles and jugs. Consider looking at the contamination in the drop-off programs and targeting those mostly commonly incorrectly recycled materials and making campaigns out of them.
- Comprehensive Resource Guide – this is a minimum education requirement for the Ohio 2021 State Plan.
 - Support and promote any businesses with plastics take-back programs by listing on the SWMD's website. Some grocery stores, electronics or other stores will have options for

residents to drop-off hard to recycle plastics such as plastic bags or Styrofoam. The SWMD could enhance promotion of businesses with take back programs by assisting with signage. Promote programs such as Wrap Recycling Action Program (WRAP) to bring additional public awareness to how residents can recycle plastic film

- End Market Development
 - Support end market development through grants, business assistant or other programs. Supporting and bringing end markets, companies that use recycled material as feedstock for new products, into an area is challenging. However, having local manufacturers builds local resiliency against domestic and international market changes and moves the community's economy from a linear one to a circular economy.
 - Work with industry associations such as Food Packaging Institute, Association of Plastic Recyclers, etc. to communicate with the MRF to find end markets. State economic development departments and Ohio EPA are also stakeholders that will be crucial to finding/developing end markets.

5. Economic Incentive Analysis

By definition, economic incentives are designed to encourage participation in recycling programs. In accordance with Goal 6 of the 2009 State Solid Waste Management Plan, the SWMD is required to explore how to incorporate economic incentives into source reduction and recycling programs.

a. Evaluation

Economic incentives in the waste and recycling are offered to influence behavior. Typical economic incentives include rebates, rewards, grants, volume-based fee structures, etc. The majority of SWMDs offering economic incentives in the state either tie the amount recycled to some sort of financial compensation or reduce the cost of recycling compared to trash. A few SWMD's structure their economic incentives to address gaps in the waste management infrastructure. For instance, Jefferson Belmont Regional Solid Waste Authority designed economic incentives to address litter, closing the recycling loop, developing end markets, and recycling collection.

The SWMD does not currently have any true economic incentives to encourage recycling or the reduction of trash. The section below discusses a couple different types of economic incentives, demonstrating how other communities have implemented such programs.

Grants: A grant is financial reward given by federal, state or local government to fund public services. SWMD can give out grants to communities or municipalities, commercial and industrial enterprises, schools and other institutes, trash and recycling hauler or processors, for projects related to reducing trash generated or increasing recycling.

Community Grants

If the SWMD offered community grants a few ways communities can use grants are to encourage residential participation in recycling, help offset costs for recycling, or to encourage the use of recycled content materials into projects (such as park benches, mulch substitute, pavers, etc.).

The SWMD could also apply for an Ohio EPA Grant or advertise Ohio EPA's Grants programs to encourage communities, schools, businesses and other organizations to apply to these programs. For

example, Portage County SWMD promotes the Ohio EPA's Grants directly on the SWMD's website, <https://portagerecycles.com/ohio-epa-grants/>.

The SWMD could also discuss with haulers their barriers to providing curbside recycling and attempt to lessen or mitigate barriers where possible. Small grants from the SWMD may or may not be enough to overcome haulers challenges with curbside recycling.

Business Grants

The SWMD could also offer small grants to businesses, especially large commercial or industrial generators, to help offset some of their recycling costs. In addition, providing technical support and resources to businesses about what, where and how to recycle could boost the commercial sectors recycling rates. Some SWMD's offer grants to cover start-up program costs with a few months of service costs. For example Butler County Recycling & Solid Waste offers a variety of grants for various audiences. (<http://www.butlercountyrecycles.org/index.cfm?page=fundingAssist>).

Volume-Based Fees: Volume-based fee systems charge residents for waste disposal based on the number and / or size of waste containers that they use. These systems incentivize residents to increase their recycling and/or decrease their trash disposal through a structure that is cheaper for recycling than for trash disposal. Volume-based fees also known as pay-as-you-throw (PAYT) programs are environmentally and economically sustainable as well as being equitable for residents – residents pay only based on how much they throw away.

There are no communities in the SWMD with PAYT programs, and there are currently no haulers in the SWMD providing curbside recycling, thus no incentives to reduce the amount of trash generated.

Drop-off PAYT

In lieu of curbside recycling and curbside PAYT fee structure, the SWMD could build onto it's drop-off programs and incorporate PAYT elements.

- 1) The SWMD could add garbage service and fencing to select drop-offs. In drop-offs with enough space and with a contract with the site location, the SWMD could explore adding trash service that residents would pay for through special bags used for trash disposal. The SWMD would need to find a way to have a specialty bag designed, manufactured and sold. The bags would be sold at a flat rate (\$2-\$4 / bag depending on size) so that residents who wanted to throw trash away at the drop-offs would be charged by the amount of trash disposed of. The SWMD would also need to establish trash collection service with a private hauler. The SWMD could consider piloting such a drop-off program at one location to measure the program's effectiveness and troubleshoot problems as they arise.

For example, Logan County is a rural county where the SWMD operates a PAYT drop-off system that drives higher diversion rates and provides a stable funding source. The SWMD's residential/commercial pounds per capita per day recycling rate is 275% times greater than that of Lawrence-Scioto (3.48 lbs/person/day vs. 0.93 lbs/person/day). Logan County SWMD's drop-offs are landscaped, with fencing, lighting, signage and cameras and include trash roll-offs as well as recycling dumpsters. Residents can only dispose of trash in the SWMD's "special", labeled and colored, trash bags. The price of the bags creates revenue for the SWMD and offsets the trash collection costs. The bags are sold at the SWMD's office, local stores and through vending machines at the drop-off centers. Cameras are used to monitor for illegal dumping and the SWMD fines violators.

- 2) Increase awareness of free recycling drop-offs. Another way to drive recycling participation and promote PAYT elements is to develop flyers, brochures, newsletter and other advertisements that call

attention to recycling as a way to decrease residents costs. The marketing material should highlight that the recycling drop-offs are free for residents to use and that could help them in turn reduce frequency of private trash collection or self-haul to the landfill. The challenge with this messaging is that it depends on what type of service residents have and may vary depending on trash hauler. However, the SWMD should endeavor to advertise and promote the drop-offs regardless. The materials should also list what can be recycled and where the drop-offs are located. The SWMD could also promote increase in drop-off use by supplying residents with household recycling bins.

b. Conclusions/Findings

The SWMD is lacking structured economic incentives to help with system gaps. While many communities hosted clean-up events, encouraged by the SWMD’s incentive it is unclear how effective this program is. The idea behind economic incentives is to **encourage** communities or residents to participate in recycling programs, so even if there are not municipalities providing curbside recycling, the SWMD should continue discussions to see if local governments are interested. With almost half of the trash generated in the SWMD going out of state, no curbside recycling available, and a lack of strong economic incentives the SWMD has struggled with increasing recycling participation.

Opportunities for economic incentives the SWMD could consider for the 2023 Plan include:

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6. Restricted and Difficult to Manage Waste Streams Analysis

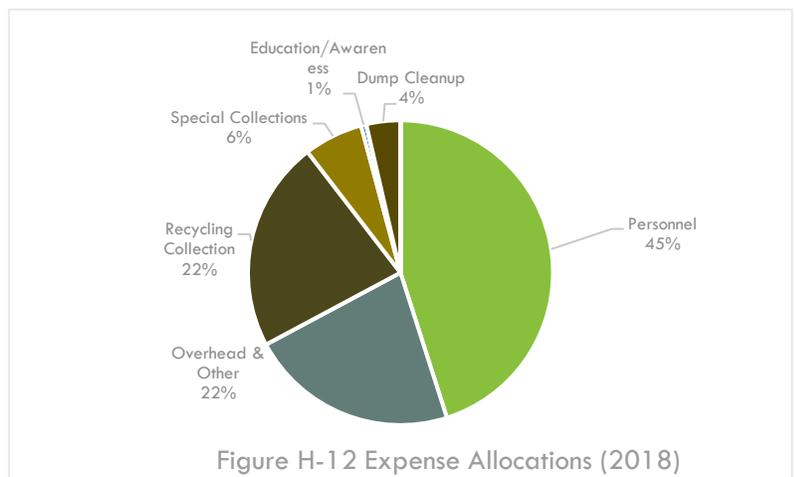
Goal 6 of the 2020 State Plan requires SWMD’s to provide strategies for managing scrap tires, yard waste, lead-acid batteries, household hazardous waste, and obsolete/end-of-life electronic devices. This analysis evaluates the SWMD strategies and considers other materials and programs for difficult to manage waste.

a. Evaluation

As seen in Figure H-12, the SWMD allocate roughly 6% of the budget to special collection programs which include scrap tires and household hazardous waste (HHW) in 2018. Of that 6% roughly 70% was spent on HHW collection which occurs every other year and 30% towards scrap tire collection. Note events were not held in 2019 or 2020.

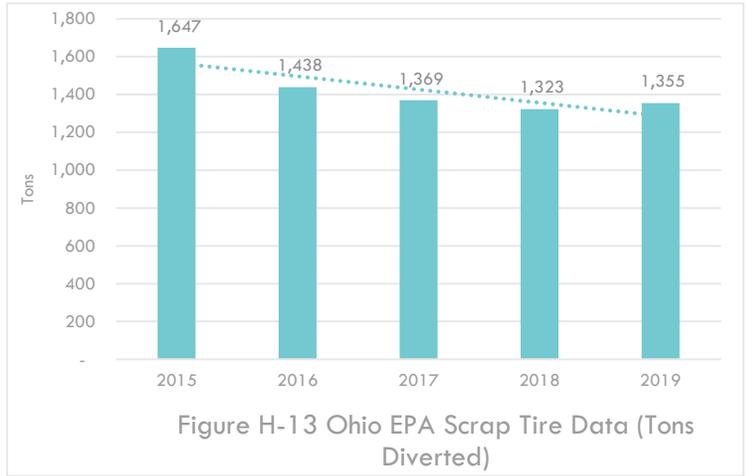
Scrap Tires:

Ohio EPA estimates more than 12 million scrap tires are generated in Ohio annually. Scrap tires not properly disposed have the potential to end up in illegal dumps, creating hazards to public health and the environment. The number of tires and the cost to handle tires can be challenging for SWMDs to manage consistently.



The SWMD manages scrap tires during Household Hazardous Waste Collection Events, direct collecting from illegal dumping clean-ups, and providing funding up to \$1000 to any community hosting community clean-ups. Additionally commercial businesses such as automotive shops and service centers offer take back centers (usually associated with a tire fee).

Figure H-13 demonstrates a slight decline in the total number of scrap tires managed annually. The data is representative of all scrap tires managed in the SWMD whether through the SWMD programs or through a commercial business.



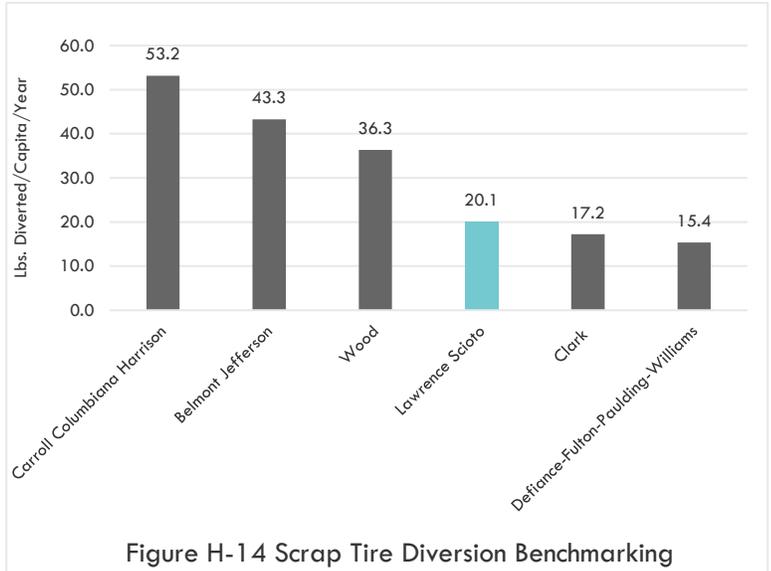
In order to perform a program evaluation for SWMD programs the number of events, tons collected, and costs of the program are needed. As this 2023 Plan was prepared the SWMD staffing changed, and some data was not transferred and thus lost. Most times the Annual District Reports, reported to Ohio EPA, provide the programmatic data needed for the analysis. Unfortunately, the SWMD historical Annual District Reports did not provide explanations and programmatic data. Some data is available but not enough to provide analysis. For instance, Table H-7 shows the data found regarding the tires collected during community clean-up events.

Table H-7 Community Clean-up Event Scrap Tire Data

Year	Tires Collected	Number of Communities Participating
2015	Unknown	Unknown
2016	Unknown	Unknown
2017	Unknown	Unknown
2018	3,782	Unknown
2019	1,859	19

Also, in 2018 approximately \$12,000 was spent on scrap tires but it is unclear if that was entirely expended towards Community Clean-up events. It's uncertain how much of the expense toward scrap tire diversion is indirect staff time to manage and operate HHW Collection Events, illegal dump clean ups, and community collection cleanups.

Figure H-14 compares the per capita collection of tires (total tires reported as recycled on Annual District Reports) for the SWMD and similarly sized Districts. Lawrence-Scioto's haulers are collecting a slightly higher per capita amount of tires to Clark and DFPW Districts. However, Lawrence-Scioto is collecting less than half of the per capita rate as Carroll Columbiana Harrison.



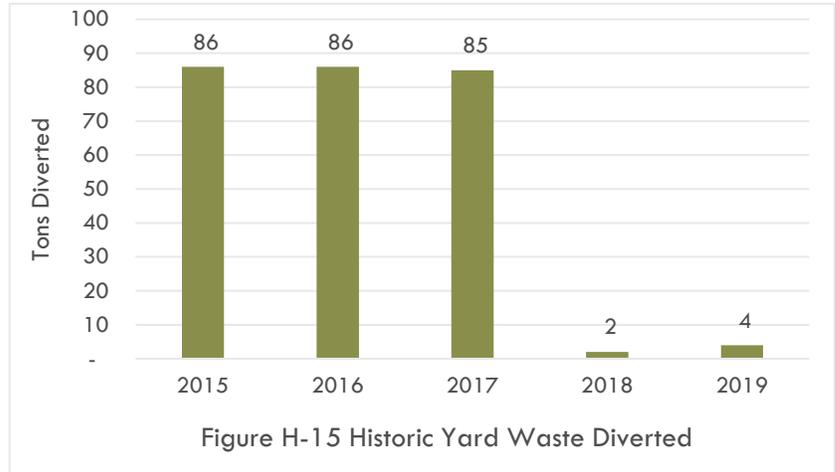
The SWMD faces challenges with illegal dumping and residents from out-of-state dumping tires and other trash within the District. In the 2017 Plan, the SWMD planned to provide more education about the social, economic and environmental harm caused by illegal dumping and burning of solid waste. As well as working with local media agencies to promote the issue locally. During the implementation of the 2017 Plan these changes were not implemented due to staffing changes.

As a resource the SWMD's webpage could look to providing a list of locations and events where residents can properly recycle/dispose of scrap tires. While the District's website does have warnings on the fines residents could face if caught illegally dumping material, there is not much information around alternatives to illegally dumping – such as collection events, or a list of tire dealers, haulers and other take-back programs.

Yard Waste:

As shown in Figure H-14, from 2015 to 2017, the average amount of yard waste diverted was 86 tons per year. The data shown in this figure was recorded from the SWMD's annual district reports and is attributed to South Point Village. South Point Village operated a Class IV (yard waste) composting facility which ceased in 2018. The decline in yard waste diverted in 2018 and 2019 is explained by discontinuing of the program. Two municipalities in the SWMD have annual leaf collections – Ironton and Portsmouth which are land applied and tonnages not tracked.

The SWMD has limited yard waste composting facilities and diversion programs. Based on the analysis done in Appendix H – Waste Composition Analysis, there is an estimated 8,740 tons of yard waste being landfilled annually in the SWMD. Additional analysis on ways the SWMD could boost yard waste diversion is provided in this previous analysis section.



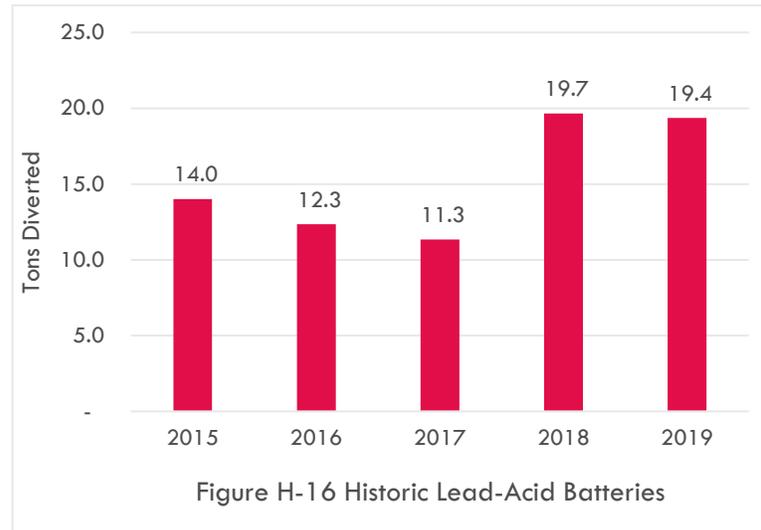
Lead-Acid Batteries:

In 2008, regulations banning disposal of lead-acid batteries in landfills became effective. Lead-acid batteries have a high recycling value and Ohio has a retailer take-back law. The District relies on private businesses to collect batteries. Virtually all the automotive supply stores and repair shops accept old batteries when new ones are purchased. The retailers charge a substantial deposit when a new battery is purchased which highly incentivizes individuals to bring back the old batteries.

Scrap yards and auto part stores in the SWMD accept lead-acid batteries for proper disposal. The SWMD also accepts lead acid batteries during its bi-annual HHW collection events.

The SWMD could call the scrap yards and retailers, confirm the retailers and locations taking back batteries. To further promote lead-acid battery recycling to residents, the SWMD could list confirmed take-back sites and contact information on the SWMD’s website.

During the five-year period from 2015 to 2019, the an average of 15.3 tons of lead-acid batteries were collected annually, with a five year high in 2018 with 19.7 tons (see Figure H-16). While it is difficult to determine how many lead-acid batteries are being generated, and disposed vs. recycled, the SWMD should continue to monitor how many tons of batteries are being collected annually to evaluate whether the retailer take-back program is remaining successful.



Household Hazardous Waste:

Household hazardous waste (HHW) are materials that may be generated in the home and if handled improperly may cause pollution and safety risks. HHW includes used oil, gasoline, diesel and heating oil, kerosene, household batteries, lead-acid batteries, pesticides, paint and paint thinners, mercury containing devices, lights/light bulbs, and electronics.

The SWMD manages HHW by hosting a HHW collection event every other year. The event in 2018 collected 26 tons of material during the one-day event. The program allows residents to properly dispose of / recycle materials in one place. These events provide residents convenient ways to divert and properly

dispose of hazardous materials. However, the events are costly to host; the events in 2018 cost \$32,621. This is roughly \$1,237 per ton. Also, the events were restricted to only residents in the county the event is held.

It's difficult to evaluate the HHW collection event program performance with one year of data. In preparing this Plan Update the SWMD was not able to locate the 2016 event data other than costs. The cost for the 2016 was \$30,829. Event costs in 2018 increased roughly 6% cost per ton

Table H-8 normalizes the SWMD's 2018 event to compare to other SWMD's in southeast Ohio. The four SWMD's compared costs range from as low as \$0.22 to a high of \$0.91 per household. Carroll-Columbiana-Harrison is the only SWMD not accepting latex paint at the collection events. The per event cost for the SWMD is on par with Belmont Jefferson's collection events. The web-based search could not ascertain whether Southeastern Joint SWMD costs in 2018 were inclusive of 6 collection events. The shown per event cost may be skewed if the total costs did not include the planned 6 events.

Table H-8 HHW Benchmark Costs and Tons

SWMD	Service Provided	Total Costs	Households	Cost/Household	Tons	Number of Events	Cost/Event
Belmont-Jefferson	Annual HHW collection event	\$58,966	64,521	\$0.91	32	2 annual	\$29,483
Carroll-Columbiana-Harrison	Annual HHW collection event	\$18,600	108,504	\$0.22	18	unknown	unknown
Southeastern Joint	Annual HHW collection event	\$40,323*	92,215	\$0.44	unknown	Typically 6 events	\$6,720
Lawrence-Scioto	Bi-Annual HHW collection events	\$32,621	53,079	\$0.61	26	1 bi-annual	\$32,621

Source: Solid Waste Management District Approved Plans, SWMD quarterly fee reports.

*Uncertain if this cost was inclusive of all 6 events.

As a resource the SWMD could look to add more educational resources and diversion outlets for these materials. The SWMD should list outlets for other difficult to manage waste such as: appliances, batteries, tires, medications, used motor oil, mercury containing devices, cell phones and electronics. The webpage could also host resources on more environmentally friendly purchasing practices and HHW prevention strategies.

Electronics:

Electronics contain hazardous materials that can pose health and environmental risks after disposal. The preferred method of handling is through the donation of working electronics and recycling for nonworking electronics. Lawrence-Scioto SWMD holds annual e-waste and document shredding events. The District also tracks electronics recycling efforts through commercial surveys. Figure H-17 shows the pounds of electronics and number of vehicles for the e-waste drop-off. Figure H-18 shows the pounds of documents shredded as well as the number of vehicles for the document shredding. For e-waste, year 2016 recorded the highest number of vehicles and 2017 recorded the highest volume by weight. Actually 2017 seems to be an outlier when comparing historical annual volumes. Also, the number of vehicles does not seem to correlate

with the volume received. However, for the shredding events, more vehicles demonstrate higher volumes of documents shredded. Volumes received are fairly consistent.

Each year the two events see an average of 219 vehicles annually.



The SWMD has been challenged to find solutions from TVs. There is one retailer near the SWMD that accepts TVs for disposal, Best Buy in Barboursville, West Virginia.

Other Streams – Pharmaceuticals

The SWMD provides annual Drug-Take Back collection event of expired or unused pharmaceuticals. For more analysis see Appendix H – Waste Composition.

Other Streams – Bulky Items

It is suspected that subscribers must pay additional fees for bulky pick-up items which could be leading to illegal dumping and contamination in the recycling programs. The SWMD could work to understand the fees, negotiate with the haulers to include once a month pick-ups, understand what motivates people to illegally dump, and enable strategies to address the motivations.

Another possibility is redirecting the \$13,000 a year from Community clean-up to work with communities to provide households with curbside bulky pickup. Assuming bulky pickup is \$40 per household approximately 325 households annually may participate. With this type of system change a household could call when bulky pick up is needed rather than hold it for a community clean-up day or find other less desirable means of management.

b. Conclusions/Findings

Lawrence-Scioto SWMD provides residents with collection events to divert hazardous or restricted materials from the landfill. The SWMD also uses grants and incentives to communities to help clean-up illegal dumping sites. The high costs of collection and clean-up events is a challenge for the SWMD. Scrap tire management continues to be an issues for the SWMD with illegal dumping of tires and other trash rampant in the District.

The SWMD should make an effort to update lists of outlets that can take restricted waste on the webpage. By providing resources to residents on retailers and locations that will take hard to recycle waste the SWMD can help increase diversion of these products with lower costs than collection events. The website could also include more education on why to dispose of these products properly and methods to avoid purchasing them in the first place. This is a more passive strategy so it might be hard to capture how many residents would take advantage of these outlets.

Opportunities for restricted and difficult to manage waste the SWMD could consider for the 2023 Plan include:

- Scrap Tire Collection – Existing program
 - The SWMD could consider charging a minimal user fee for the collection events (\$1 per car or household) to help offset some of the costs while trying to ensure cost is not a barrier to participation by residents.
 - Collect data from each event on the number and/or tons of scrap tires collected.
 - The SWMD has a \$200 reward for information leading to the arrest and misdemeanor conviction for illegal dumping and up to \$100 for information leading to the successful completion of an administrative penalty. The SWMD could go further to “Name and Shame” those that were caught illegally dumping, releasing names and pictures to local news to try to make an example out of those caught.
- Education and Outreach – Existing program
 - Website/Social Media (existing program) – Setting a goal to provide more resources and education making the webpage a one-stop shop for recycling and diversion information.
 - Develop an inventory of scrap tire take-back retailers, service centers, etc. that accept scrap tires for proper management.
 - Add a list of take-back retailers, recyclers, and collection events where residents can properly manage scrap tires to the website.
 - Include more education on why to dispose of these products properly and methods to avoid purchasing them in the first place.
- HHW Collection – Existing program
 - Collect data from each event on the number and/or tons of HHW collected.
 - Open events in either county to residents of both counties.
 - Study latex paint re-use and recycling options to educate residents to alternative options and discontinue collecting latex paint at HHW events to help manage collection costs. Another option is to set up a latex paint swap at the SWMD offices for residents.
 - Research long term more frequent management options that would help alleviate the costs of the one-day collection events and provide residents with more convenience. Greene County SWMD operates a special waste drop-off offering two days a month April through October. In 2017 latex paint was added, through a partnership with Matthew 25 Ministries. The District sorts the paint into useable and non-useable categories. Useable is stored for Matthews 25 Ministries to pick up. Non-useable paint is dried and disposed. The good collected paint is processed and distributed through Matthew 25 Ministries network. In 2018, 17 tons of latex were recycled through the ministry in addition to other paint that was recycled through the center and recorded as HHW. Greene County SWMD spent \$95,933 on HHW collection and management in 2018, which equates to \$1,916 per ton, for the 50 tons collected. This cost per ton is about \$500 more than what the SWMD spends on one event.

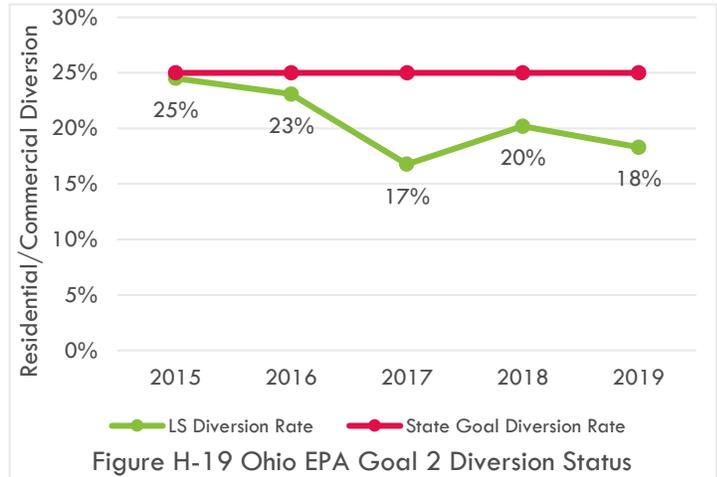
- A longer-term strategy could be to look for a regional partnership. HHW and restricted waste is a challenge regionally and other neighboring Districts have similar challenges with the high costs of collection events. The District could seek to form a stakeholder group for the region and develop strategies to share resources, and overcome challenges of transportation, low volume, processing and expense.
- Drop-off Program – Setting a goal to decrease contamination/illegal dumping.
 - Conduct a community survey to understand what motivates people to illegally dump and enable strategies to address the motivations.
 - Research if bulky item curbside collection is available and what cost households pay for bulky item disposal. Explore whether the SWMD can provide vouchers for citizens to disposal of bulky items. Engage with private haulers/scrap haulers to provide on-demand pickup for lesser fee or free (A scrap company in Butler County SWMD offers appliance pickup for free). Engage with private haulers to explore adjusting rates to include bulky pickup as part of the base service costs.
- Litter & Community Clean-Up – Existing program that could be re-vamped.
 - Select a community to serve as a pilot to test curbside bulky pickup.
 - Before arrangements/service are assumed survey the households to see what service offerings they want/need and what they are willing to pay for.
 - Based on survey results design a grant program to assist communities with management of bulky items.
- Hold two interactive workshops.
 - Workshop 1 objectives
 - Gather and synthesize input from diverse expert stakeholders with different points of view on the illegal dumping issue.
 - Consider the societal and economic causes of illegal dumping.
 - Brainstorm solutions for addressing illegal dumping problem.
 - Create opportunities for stronger cooperation among stakeholders.
 - Select participants for invitation based on the goal of gathering experts who work with the issue of illegal dumping in a professional capacity, bearing in mind the need for representation of various geographic areas, demographic elements and areas of focus.
 - Develop/design interventions – solutions for the problem of illegal dumping.
 - Identify major themes and recommendations.
 - Workshop 2 Objectives
 - Gather information from individuals at the local level to see what solutions might emerge specific to an underserved region.
 - Brief review of illegal dumping definitions created by participants of Workshop 1 to uncover any differences in content/emphasis and to make the connection between environmental justice (the topic of the conference) and illegal dumping.
 - Gather workshop participants' input on specific illegal dumping challenges in their communities.
 - Brainstorm illegal dumping interventions specific to workshop participants' local needs.
 - Select participants to include local residents, activists, and representatives of nonprofit organizations and neighborhood groups with an interest in and activism regarding environmental justice.
 - Develop/design interventions – solutions for the problem of illegal dumping.
 - Identify major themes and recommendations.

7. Diversion Analysis

Waste diversion is defined as the amount of waste recycled and the amount of waste diverted from entering the waste stream through source reduction activities. Waste diversion activities include waste minimization (also called source reduction), reuse, recycling, and composting. The diversion analysis takes a look at the diversion programs, infrastructure, rate and trends, and materials.

a. Evaluation

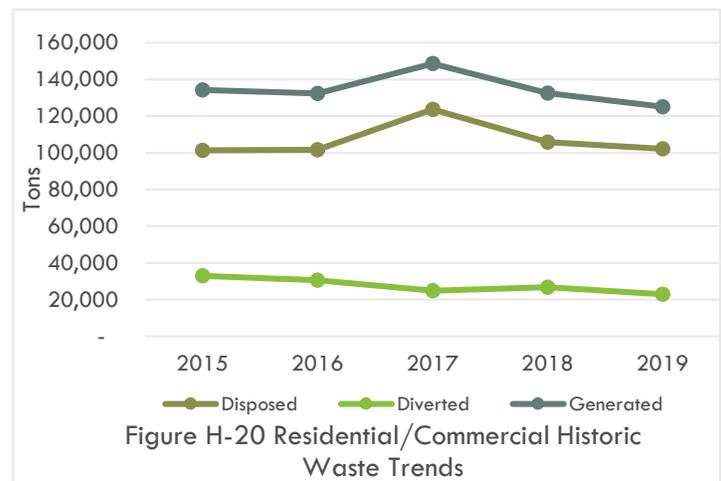
Figure H-19 shows the SWMD's residential/commercial rate over the past five years in comparison to Ohio EPA Goal #2. As shown, the SWMD's residential/commercial diversion rate fell below the State's 25% residential/commercial waste diversion goal.



Lawrence-Scioto's diversion rate averaged 21% from 2015 to 2019 and is trending downward. Figure H-20 shows that over the historic time period, the decline in diversion rate mainly relates to a decrease in tons diverted. The exception is in 2017 when 20,000 more tons than average were disposed of causing the diversion rate to drop more significantly.

Both the residential and commercial sectors need to improve diversion to meet or exceed the 25% goal.

The analysis conducted in Appendix E shows a significant decline in data from commercial sources. There is a disconnect in understanding if commercial recycling is occurring and not being reported or if recycling is not occurring at all. The decline in data is a major contributing factor for not being able to achieve the 25% diversion goal. The 2017 Plan focused programs towards placing drop-offs at or near government offices and providing containers to schools. A challenging obstacle with these two programs is getting the materials from the office/building to the drop-off container. Additionally, the supportive education to use the containers fell short. Resident education relied on brochures and signage. Without conducting more research, it is not clear if the education methods were effective. Looking at historical tonnages at the drop-off tonnages declined. A contributing factor could be the lack of collecting glass, which is one of the heavier recyclable commodities, in the drop-offs. Lastly the 2017 Plan expected the two Class IV in-district compost facilities to continue throughout the planning period. Unfortunately their active permit status ceased in 2016.



As discussed in Appendix E, ferrous metals, cardboard, and other paper were the three largest material categories recycled in the reference year, accounting for 73% of the SWMD's diversion. Figure H-21

depicts the recycled commodities as a percentage of total diversion. (Note Other category includes lead-acid batteries, used motor oil, yard waste and electronics as well as other, uncategorized recyclables).

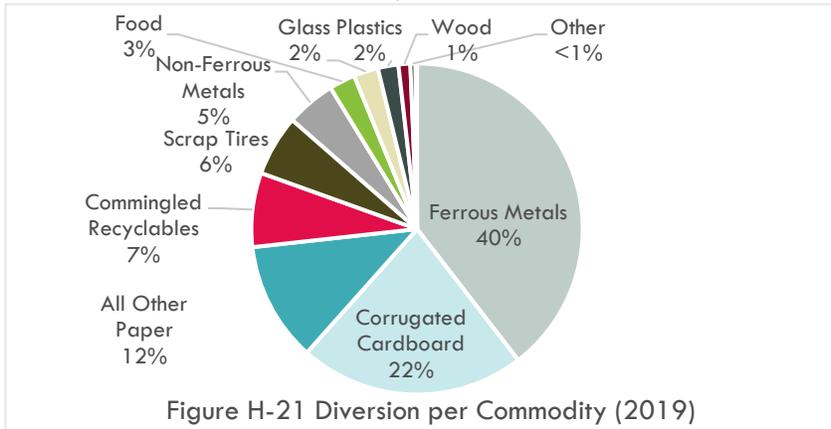


Figure H-21 Diversion per Commodity (2019)

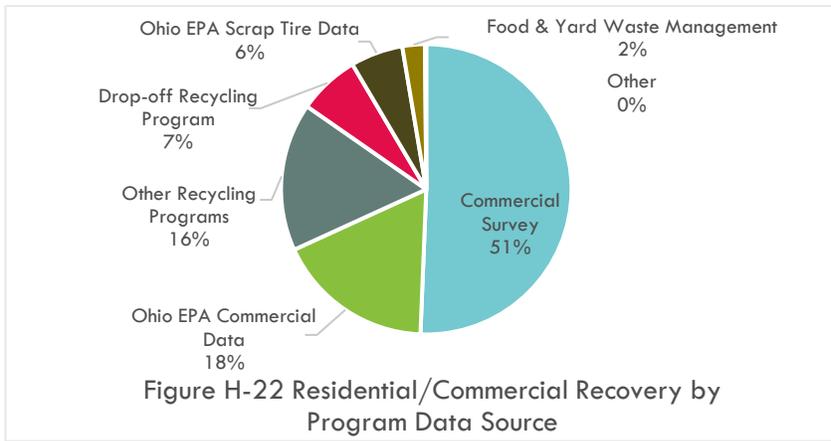


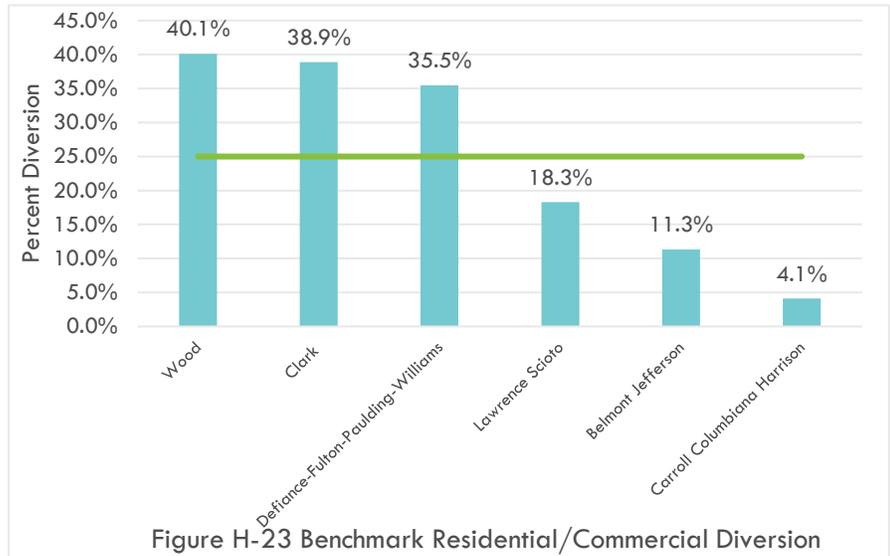
Figure H-22 Residential/Commercial Recovery by Program Data Source

Data collection and the sources of data are also important when analyzing the SWMD’s diversion rate. The SWMD collects data from several sources to track residential/commercial diversion as shown in Figure H-22. A major factor in the diversion rate is data collected from the commercial survey. Survey results for calendar year 2019 reported a total of 11,603 tons diverted or about half of the total tons diverted in the SWMD. Unfortunately, the responding business data was not found with the office staffing changes making the number of responding businesses unavailable.

About 18% of the data is sourced from Ohio EPA Commercial Data, which is an effort by Ohio EPA to collect large commercial box stores and generator data. These commercial sources reported

diverting 4,017 tons in 2019. Tons diverted from Other Recycling Programs, 16% of the total tons diverted, comes from recycling processors or MRFs out-of-District that report materials processed from Lawrence-Scioto. The Drop-off Recycling Program accounted for 7% and the Ohio EPA Scrap Tire Data accounted 6% of the material diverted. The Food and Yard Waste Management activities and Other (Scrap Tire Events, Document Shredding Events, Christmas Tree Collection, Annual Electronics Collection, and HHW) accounted for less than 3% of the material diverted.

Figure H-23 compares the SWMD's 2019 diversion rate to similar population sized Ohio solid waste management districts. When compared, Lawrence-Scioto's diversion rate at 18% is below three of the higher performing Districts with populations around 135,000. Belmont Jefferson's diversion rate is low due to elevated waste landfilled from well fracking operations. Additionally, the Districts compared may vary in diversion rate due to differences in population density, distance to markets, access to funding but it allows the SWMD to see what could be possible and set some targets.



The SWMD compiled Table H-9 to compare the similar sized Districts programs and services with higher diversion rates. Two of the Districts, Wood and DFPW, have communities with curbside recycling, which likely drives higher diversion of residential material. Also, all of the other Districts have more compost facilities that help divert organics – yard waste and food waste.

Table H-9 Benchmarked County Programs

SWMD	Wood	Clark	Defiance-Fulton-Paulding-Williams (DFPW)	Lawrence-Scioto
Total Diversion Rate (2019)	40.1%	38.9%	35.5%	18.3%
Curbside Recycling Programs	Yes	No	Yes	No
Drop-off Recycling Programs	Yes	Yes	Yes	Yes
In-District Compost Processing	Yes – 11 Facilities	Yes – 9 Facilities	Yes – 11 Facilities	None
Curbside Compost Collection	No	No	No	No
In-District Landfill	Yes	No	Yes	No

Source:
 Wood County SWMP
 Clark County SWMP
 Defiance-Fulton-Paulding-Williams SWMP

The SWMD demonstrated compliance with Goal 1 in the 2017 Plan, however, fell short on meeting the target waste reduction and recycling rate of 22% in 2019. As mentioned, a few contributing factors for falling short on this target include:

- Inactive engagement with the commercial sector.
- Lack of behavior changing outreach tactics.
- Lack of glass collection at drop-off recycling locations.

- Closure of two Class IV in-district compost facilities.

Provisions of drop-off containers for the public to use is not enough to get the public to use them. Constant education and outreach are needed to inform the public. Evaluation of the drop-off site locations are needed. Being able to answer questions such as these below will help the SWMD create a collection system that works for the public.

- Is a particular site receiving more contamination by open dumping?
- Is wishcycling an issue?
- Are the locations optimized for public use?

The commercial sector is a significant generator contributing toward diversion. Better connections with the commercial sector to gather data and/or set up recycling programs will contribute towards higher diversion rates.

b. Conclusions/Findings

The SWMD's diversion rate has declined over the 5 year historic period from 2015 to 2019. Some of the decline is attributed to an increase in tons disposed but more of the decline appears to be from a drop in recycling. The SWMD is currently not meeting the Ohio EPA residential and commercial diversion goal of 25%, and is projected not to reach the goal during the planning period, unless the SWMD actively makes changes to programs, education and data collection. Potential ways to increase diversion are discussed in other Appendix H analysis sections.

8. Special Program Needs Analysis

Ohio Revised Code 3734.57(G) gives SWMDs the authority to fund a number of activities that are not related to achieving the goals of the state solid waste management plan. In addition, there are other programs that SWMDs fund that are not addressed in either the state plan or law. This analysis evaluates the performance and status of these activities and programs and the value to the SWMD.

a. Evaluation

Open Dumping and Litter Enforcement

The District provides funding for a full-time Environmental Officer to investigate and prosecute environmental crimes such as open dumping and littering. The Environmental Officer is commissioned by the Sheriff in both Lawrence and Scioto counties, which gives the officer full jurisdiction in both counties.

As an employee of the District, the Environmental Officer drives a vehicle that belongs to the District, which is labeled "Solid Waste District Enforcement Officer." The vehicle is equipped with lights and a siren. Lawrence County donated the radio that allows the officer to be in contact with the sheriff departments. The enforcement officer also has handheld radios that allow contact with the District office. If the District receives an environmental complaint, the officer can be notified immediately. Other equipment includes three motion detectors with wireless cameras that allow the officer to download pictures to a laptop, a tape recorder, a handheld evidence camera, binoculars, and a firearm. The enforcement officer usually handles two to three calls a day for enforcement issues. All cases are called in by the public; the officer does not patrol looking for infractions.

After a complaint is made, typically the Environmental Officer will investigate the site. Following the investigation, a citation may be issued. Citations will result in the case going through the Prosecutor's office. Cases are tried in a combination of municipal and common pleas courts. Littering and clean air violations are tried in the municipal court, while open dumping is a felony and is tried in common pleas court. The most common offences are open dumping, such as litter and trash in residential backyards and trash burning. Residents are not mandated to have a trash hauler within the two-county area, which may contribute to the frequency that these issues arise. In most cases, violators are fined and placed into a community service program.

A typical sentence for a dumping violation is \$250-\$500 in fines, (including \$200 in court fees and \$106.32 for restitution, which is paid directly to the SWMD), 12 days in jail or 30-60 days of community service, and 1 year of probation. Community service is often served with the District's Litter Control Crew. In addition, the offender is required to clean-up the infraction to the satisfaction of the Environmental Officer who reports back to the presiding judge.

Reference year data, 2019, was not reported on the Annual District Report and with the office personnel changes unable to be located. Over the years, complaints have not decreased. The program has a high rate of success prosecuting offenders. Some investigations have a high-risk for physical harm.

Literature and web searches provided the following information on other SWMD program metrics:

SWMD	Metrics
Coshocton-Fairfield-Licking-Perry (2016 data)	81 citations, 48 convictions, 418 litter investigations
SWACO (2014 data)	38 convictions, 400 community service hours ordered, \$79,129.74 ordered in restitution/fines

Litter Control Crew

The District partners with the Lawrence County Jail and Courts and the Portsmouth City Jail and Courts (Scioto County) to operate litter collection crews. Two program supervisors, which are employed by the District, manage litter collection activities that are performed by the community service workers from the court system. Lawrence County's litter pickups are held on township and county roads and state routes. The crew also performs public community cleanups in parks and three dumpsites per year. Scioto County's cleanups are held on township and county roads and municipal streets. The crew also performs public community cleanups in parks and three dumpsites per year. The crew works Monday-Friday and uses community service workers from STAR. Each crew consists of 4-6 workers, plus one supervisor.

Reference year data, 2019, was not reported on the Annual District Report and with the office personnel changes unable to be located. Unfortunately, communities now depend on the SWMD to clean up any open dump or litter issues and clean up occurs almost every day. This program requires a considerable amount of SWMD staff time and doesn't seem to be improving in either county.

Litter and Community Clean-Up Incentive

Starting in 2017, the SWMD offers \$1,000 to any township, city or village in the SWMD offering to host a clean-up event for residents. In 2019, the City of Ironton, Village of Proctorville, Village of Chesapeake, Village of Hanging Rock, Village of New Boston, City of Portsmouth and 13 townships participated in the program. It is unclear how much material was picked up during these events. The program strengths is the incentive likely motivates communities to provide community clean-ups that otherwise might not. Also residents participating in clean-up events might feel more connected to their community and aware of littering and trash issues. However,

while this program incentivizes communities to host clean-up events, it does not incentivize residents or commercial business to reduce the amount of trash generated or increase the amount recycled.

With 13 townships annually participating, the SWMD is spending \$13,000 a year and is not measuring significant improvements to the litter and open dumping throughout the SWMD. It's possible convenient bulky item pick would help curb the illegal dumping (see bulky items in Section H.6).

Recycling Litter Trailer

The District maintains a recycling and litter trailer that is stocked with a variety of tools, equipment, and supplies needed to complete a clean-up or beautification project, including the following:

- Safety vests, safety glasses, orange safety flags, first aid kits, rubber wheel chocks, and traffic safety cones;
- Hand sanitizer, paper towels, latex gloves, and jersey gloves;
- Lawn mowers, trimmers, leaf blowers, wheelbarrows, trimmer line, and steel hand trucks;
- Pruners, shears, shovels, diggers, rakes, brooms, and dust pans;
- Clear Stream recycling stands, waste and recycling containers, and clear 33-gallon bags;
- Folding table, folding chairs, and rolling cooler; and
- Quarts of fuel for equipment and gas cans.

The trailer is available for District residents and volunteer groups to borrow for clean-up events. There is no cost for volunteer groups who wish to borrow the trailer. Volunteer groups interested in using the trailer are asked to reserve it prior to planning a clean-up event. The District can deliver and pick up the trailer from the requested site. The trailer is used bi-weekly from April through October for cutting grass and cleaning a cemetery. It is also used for the annual Lawrence Countywide Cleanup Day and the Portsmouth City Cleanup. SWMD staff supervises during cleanups and takes inventory of loaned tools as used and returned.

Reports are not required. The trailer has on-going use as requested. In 2021, the SWMD conducted an equipment inventory and invested in replacing worn/old equipment with newer equipment.

Sponsor A Site

The Sponsor-A-Site program is a clean-up program available to any business, church, civic group or scout group within Lawrence or Scioto counties. Organizations may sponsor a site by committing to clean up the area once per month or as needed. The District provides garbage bags and gloves for the clean-up, as well as the signs that identify each site and the volunteer group committed to keeping it clean. The Litter Control Crew picks up bags of litter collected by volunteer groups.

Since inception the program continually has participants.

b. Conclusions/Findings

Illegal dumping is a serious challenge to the SWMD, encompassing issues of pollution, economics, health and social justice. The SWMD has been actively engaged in cleaning up open dump issues. Without a measured decrease in dumping the SWMD could develop programs to help understand the why to decrease the problem of illegal dumping.

Opportunities to consider for the 2023 Plan include:

- Litter & Community Clean-Up – Existing program that could be re-vamped.

- Consider creating separate grants to re-brand the clean-up and community grants. This will change the culture to provide communities with better recognition for diversion instead of being associated with litter and clean-up. A grant to help with litter abatement or bulky pickup could be identified as Litter/CleanUp Grants. A grant to help communities provide funding for diversion projects such as recycling receptacles, beautification with park benches made from recycled content, etc. could be identified as Community Grants.
- More collaboration from cities, villages, and townships. Cultural change will take time and collaboration from other organizations, not just the SWMD.
- Open Dumping and Litter Enforcement - Existing program that could use more research.
 - Consider requiring reports / logs be submitted more frequently to track when complaints happen and how often.
-

9. Financial Analysis

The purpose of this analysis is to examine the SWMD's current financial position and assess the financial requirements and revenue sources throughout the next planning period. The SWMD is currently funded through revenues from designation fees and the sale of recyclables collected. The SWMD does not currently collect a disposal fee at local disposal facilities separate from the designation fee.

a. Revenue

DISPOSAL FEES

In accordance with ORC Section 3734.53(B), the District has set its disposal fees at \$1.25 per ton for waste generated in -district and out-of-state, and \$2.50 per ton for waste generated out-of-district. These fees are not collected because of the District does not have any disposal facilities located within its boundaries. The District does not anticipate a District-sponsored disposal facility to be developed during the planning period. If a privately-owned facility were to be constructed and begin operating before 2031, the District would implement these fees.

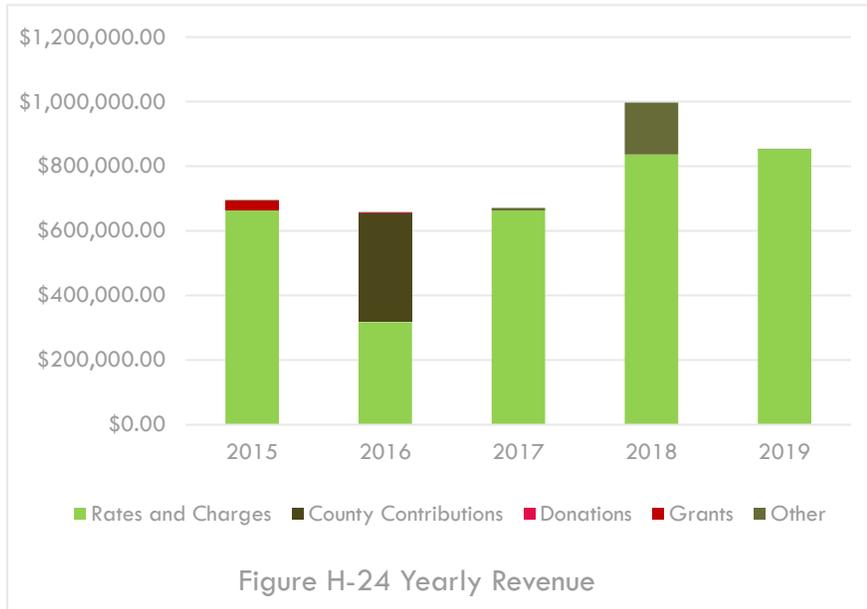
GENERATION FEE

The District does not have a generation fee.

OTHER REVENUE SOURCES

In accordance with ORC 343.08, the District levies a rate and charge on each improved parcel. An "improved parcel" is a parcel of land that is improved with at least one permanent portable, or temporary building. The charge is certified to the County auditor and collected in the same manner as other rates and charges throughout the planning period. In order to maintain its programs and services, the SWMD levied a \$12.00 rate which was increased to \$16.00 on each improved parcel in 2018.

As represented in Figure H-24, the SWMD relies on rates and charges to support program and operations. Other



forms of revenue since the last plan update consist of Grants, Donations, County Contributions (rates and charges), and “other” revenue. Grant funding was received in 2015 but grant funding is competitive and not guaranteed. Prior to the rates and charges increase in 2018, revenues averaged approximately \$675,000 annually. The \$4 rate increase generates roughly \$189,000 annually.

As an exercise, the SWMD compared the actual revenues to the 2017 Plan projections and prepared Table H-10 to show total and individual funding mechanisms generated. As shown the

2017 Plan’s projected revenue was 2% lower than 2019 actual waste receipts. Rates and charges are a very stable funding source and projections were aligned with actual revenues received.

Table H-10 Actual versus 2016 Plan Projected Revenues

Year	Rates and Charges	Donations	Fines	Other	Total Revenue (\$)
2019 – 2016 Plan projections	\$832,000	\$2,000	\$887		\$834,887
2019 - Actual	\$852,936	\$0	\$0	\$1,752	\$854,688

The SWMD prepared Table H-11 to compare revenue and revenue streams with solid waste management districts in southeast Ohio and that border along the Ohio River. Varied sources are used to generate revenues for the compared solid waste districts. The most common source for generating revenue is the disposal fee. Four solid waste districts have active in-district landfills that accept waste and thus generates revenues for the solid waste district. Designation fees are the next common source with three solid waste districts utilizing this source. Two solid waste district’s use rates and charges, Lawrence Scioto demonstrates the highest parcel charge among the compared districts, however, rates and charges is their only funding source. One solid waste district uses a generation fee as a supplement to their disposal fee.

Normalizing the revenues generated per person, the SWMD generates approximately \$6.34 per person per year.

Table H-11 Benchmarked District Revenues (2019)

District	Type of Revenue	Fee	Revenue	Population	Per Capita Revenue
Brown County	Disposal Fee	\$1.50/\$3/\$1.50	\$1,091,824	42,976	\$25.41
Jefferson Belmont	Disposal Fee Contract Fee Designation Fee	\$1/\$2/\$1 \$0.50/ton	\$3,216,709	136,701	\$23.53

District	Type of Revenue	Fee	Revenue	Population	Per Capita Revenue
	Rates and Charges	\$2/ton \$4.52/parcel/year			
Lawrence Scioto	Rates and Charges	\$16/parcel/year	\$854,688	134,777	\$6.34
Southeast Ohio	Designation Fee	\$2/ton	\$1,275,990	226,666	\$5.63
Athens Hocking	Disposal Fee Generation Fee	\$1/\$2/\$1 \$3/ton	\$493,227.79	94,259	\$5.23
Gallia Jackson Meigs Vinton	Disposal Fee	\$1/\$2/\$1	\$428,386	104,641	\$4.09
Adams Clermont	Designation Fees Recycling Revenue	\$3/ton	\$725,394.94	231,782	\$3.13

Notes:

Lawrence Scioto does not have an active landfill but has a disposal fee of \$1.25/\$2.50/\$1.25.

Southeast Ohio does not have an active landfill but has a disposal fee of \$2/\$4/\$2.

Brown County and Jefferson Belmont have higher per capita revenue because they have landfills which accept waste from outside their boundaries.

Source:

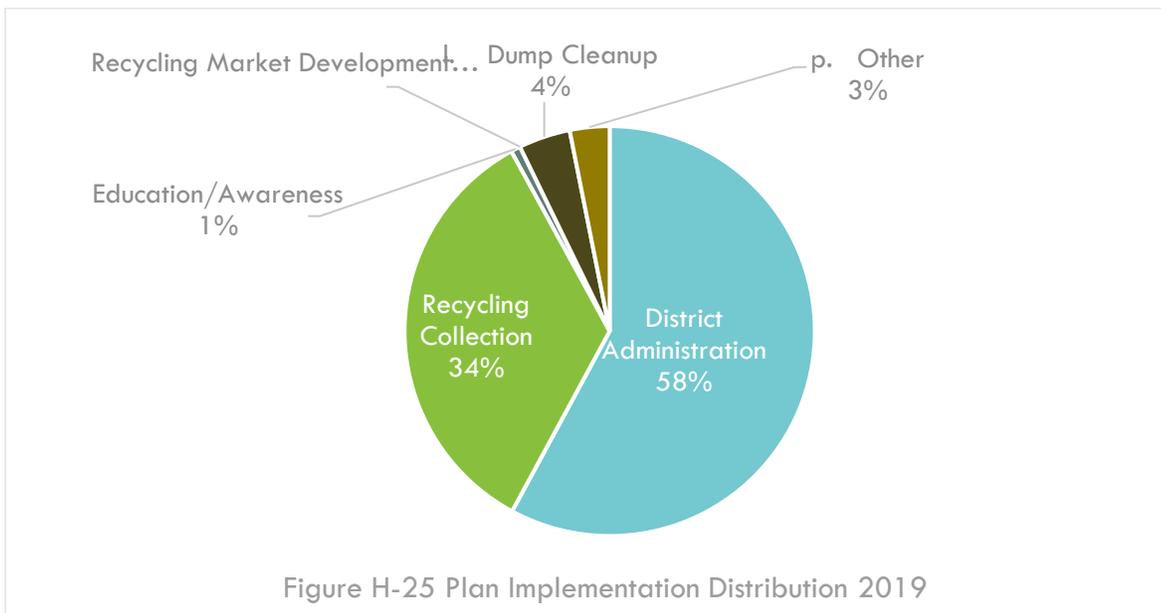
JBRSWA: 2021 SWMP year 2019

Fees sourced from "Ohio EPA Solid Waste management District Fee Summary: 2019" for Brown County, Gallia Jackson Meigs Vinton, Southeastern, Adams Clermont

Population sourced from "Ohio EPA SWMD Fee Summary Reports: 2019"

b. Expenditures

In 2019, within plan implementation 54% of costs went to district administration and 32% to recycling collection.



Historically over the past 5 years, expenses averaged \$716,000 annually. Costs elevated slightly in 2018 due to tire and HHW collection events and then in 2019 the drop-off recycling collection contract jumped significantly.

As shown in table H-12, the actual expenses were 2% less than forecasted in the 2017 Plan. The main difference is the Plan predicted higher drop-off recycling collection costs and lower district administration.

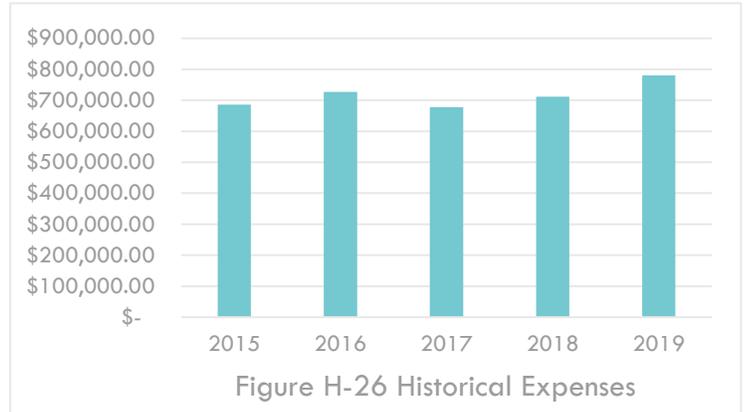


Table H-12 Actual versus 2016 Plan Projected Expenses

Year	Total Expenditures (\$)
2019 – 2016 Projected Plan	\$796,151
2019 Actual	\$780,832

The SWMD prepared Table H-13 to compare expenses with solid waste management districts in southeast Ohio and that border along the Ohio River. Normalizing the expenses per person, the SWMD spends roughly \$5.79 per person per year on programs. Jefferson Belmont and Brown County demonstrates higher per capita expenses. Both maintain higher levels of staffing to provide program services such as recycling collection.

Table H-13 Benchmarked District Revenues (2019)

District	Expenses	Per Capita Expenses
Jefferson Belmont	\$1,853,722.00	\$13.56
Lawrence Scioto	\$780,832.00	\$5.79
Brown County	\$1,139,999.09	\$26.53
Gallia Jackson Meigs Vinton	\$485,122.56	\$4.64
Southeast Ohio	\$1,194,480.91	\$5.27
Adams Clermont	\$777,022.62	\$3.35
Athens Hocking	\$525,417.96	\$5.57

Source:

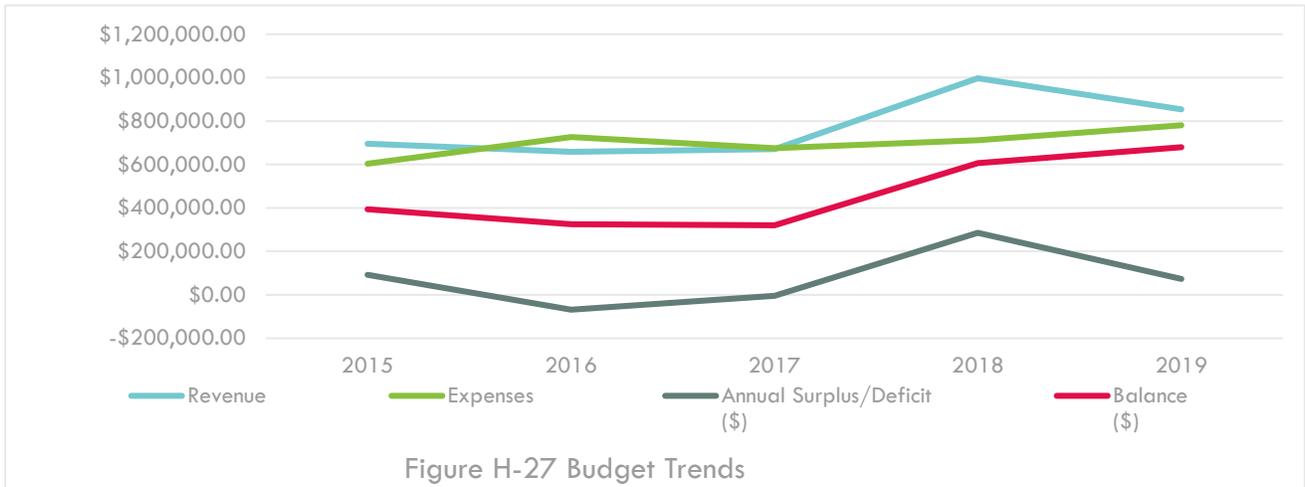
JBRSWA: 2021 SWMP year 2019

Fees sourced from "Ohio EPA Solid Waste management District Fee Summary: 2019" for Brown County, Gallia Jackson Meigs Vinton, Southeastern, Adams Clermont

Population sourced from "Ohio EPA SWMD Fee Summary Reports: 2019"

c. Carry Over Balance

Figure H-27 shows the fund balance accruing over the past 5 years. The SWMD adjusted spending levels as revenues declined to maintain a minimum fund balance. The increased rates and charges revenues in 2018, added revenues as expenses were drawing down the balance.



Including SWMD expenses, the SWMD is estimating an annual expense of roughly \$1,043,000 in the first 6 planning years. Assuming \$898,192 annually in rates and charges equates to a need of \$144,808 annually for the first 6 years. Considering the entire 15-year planning period, the SWMD needs an annual additional revenue of approximately \$400,000 annually to balance the inflated expenses. The SWMD explored three options for generating additional revenue which include:

- a. Additional funding could be generated by step increasing rates and charges. Increasing the rate to \$22 in 2027 and then to \$26 in 2034 will provide additional revenues to balance the budget through the end of the planning period.
- b. Another funding option is a contract or designation fee. With contract fees, the ratification process would not apply for any contract fee increases. The SWMD could add a contract fee to supplement the rate and charges. Ohio law gives each SWMD the ability to control where waste generated from within the SWMD can be taken. Such control is generally referred to as flow control. In Ohio, SWMD's establish flow control by designating facilities. SWMDs can designate any type of solid waste facility, including recycling, transfer, and landfill facilities.

The Board of Directors would need to adopt designation, which has already been authorized in the 2017 Plan. As part of Designation contracts are made with solid waste facilities accepting SWMD waste to remit a per ton contract fee to the SWMD. The designation fee is collected at the first point of disposal by the designated facilities, including landfills, transfer stations, incinerators, and material recovery facilities and remitted back to the SWMD. Only solid waste facilities designated will be authorized to receive waste generated within the SWMD.

- c. A third option explored includes step increases of rates and charges plus the addition of a designation fee.

OPTION A: Rates and Charges Increase to \$22 in 2027 and \$26 in 2034

Designation Fee	\$0.00		
Rates and Charges	\$16.00	Improved Parcels	56,137
	\$22.00		
	\$26.00		

Year	Designation Fee	Rates and Charges	Total Revenues
2023	\$0.00	\$898,192.00	\$900,215.00
2024	\$0.00	\$898,192.00	\$900,216.00
2025	\$0.00	\$898,192.00	\$900,217.00
2026	\$0.00	\$898,192.00	\$900,218.00
2027	\$0.00	\$1,235,014.00	\$1,237,041.00
2028	\$0.00	\$1,235,014.00	\$1,237,042.00
2029	\$0.00	\$1,235,014.00	\$1,237,043.00
2030	\$0.00	\$1,235,014.00	\$1,237,044.00
2031	\$0.00	\$1,235,014.00	\$1,237,045.00
2032	\$0.00	\$1,235,014.00	\$1,237,046.00
2033	\$0.00	\$1,235,014.00	\$1,237,047.00
2034	\$0.00	\$1,459,562.00	\$1,461,596.00
2035	\$0.00	\$1,459,562.00	\$1,461,597.00
2036	\$0.00	\$1,459,562.00	\$1,461,598.00
2037	\$0.00	\$1,459,562.00	\$1,461,599.00

Normalizing the costs on a per person basis Option A would cost each person \$9.16 a year when rate increases to \$22 and \$10.83 per year when rate increases to \$26.

OPTION B: Add designation fee of \$3 per ton in 2026

Designation Fee	\$3.00		
Rates and Charges	\$16.00	Improved Parcels	56,137

Year	Designation Fee	Rates and Charges	Total Revenues
2023	\$0.00	\$898,192.00	\$900,215.00
2024	\$0.00	\$898,192.00	\$900,216.00
2025	\$0.00	\$898,192.00	\$900,217.00
2026	\$412,244.32	\$898,192.00	\$1,312,462.32
2027	\$411,710.14	\$898,192.00	\$1,311,929.14
2028	\$411,183.34	\$898,192.00	\$1,311,403.34
2029	\$410,663.92	\$898,192.00	\$1,310,884.92
2030	\$410,151.87	\$898,192.00	\$1,310,373.87
2031	\$409,647.18	\$898,192.00	\$1,309,870.18
2032	\$409,149.85	\$898,192.00	\$1,309,373.85
2033	\$408,659.88	\$898,192.00	\$1,308,884.88
2034	\$408,177.26	\$898,192.00	\$1,308,403.26
2035	\$407,701.98	\$898,192.00	\$1,307,928.98
2036	\$407,234.04	\$898,192.00	\$1,307,462.04
2037	\$406,773.44	\$898,192.00	\$1,307,002.44

Normalizing the costs on a per person basis Option B would cost each person \$9.74 a year when designation fees are implemented in 2026.

OPTION C: Increased Rates and Charges in 2023, 2027, and 2031 plus Designation Fee to begin in 2024

Designation Fee	\$3.00		
Rates and Charges	\$16.00	Improved Parcels	56,137
	\$18.00		
	\$20.00		
	\$22.00		

Year	Designation Fee	Rates and Charges	Total Revenues
2023	\$0.00	\$1,010,466.00	\$1,010,466.00
2024	\$413,334.86	\$1,010,466.00	\$1,423,800.86
2025	\$412,785.90	\$1,010,466.00	\$1,423,251.90
2026	\$412,244.32	\$1,010,466.00	\$1,422,710.32
2027	\$411,710.14	\$1,122,740.00	\$1,534,450.14
2028	\$411,183.34	\$1,122,740.00	\$1,533,923.34
2029	\$410,663.92	\$1,122,740.00	\$1,533,403.92
2030	\$410,151.87	\$1,122,740.00	\$1,532,891.87
2031	\$409,647.18	\$1,235,014.00	\$1,644,661.18
2032	\$409,149.85	\$1,235,014.00	\$1,644,163.85
2033	\$408,659.88	\$1,235,014.00	\$1,643,673.88
2034	\$408,177.26	\$1,235,014.00	\$1,643,191.26
2035	\$407,701.98	\$1,235,014.00	\$1,642,715.98
2036	\$407,234.04	\$1,235,014.00	\$1,642,248.04
2037	\$406,773.44	\$1,235,014.00	\$1,641,787.44

Current funding at cost per person basis is \$6.66 per person a year. If the SWMD increased revenues using one of these options, it would increase per person cost ranging from \$3.07 or \$5.57 per person per year more (includes total costs over the planning period).

d. Conclusions/Finding

Funding sources are stable. The SWMD operates with lean budget working to decrease overhead and friction. Working in this manner provides guideposts to stay focused. The SWMD will need to supplement funding to implement programs projected in this Plan Update. The options presented in this analysis represent supplemental funding which can be implemented and will need to be decided.

10. Regional Analysis

The purpose of the regional analysis is to consider regional opportunities for collaboration and partnerships, and to also consider how the policy committee’s decisions may impact other stakeholders in the region.

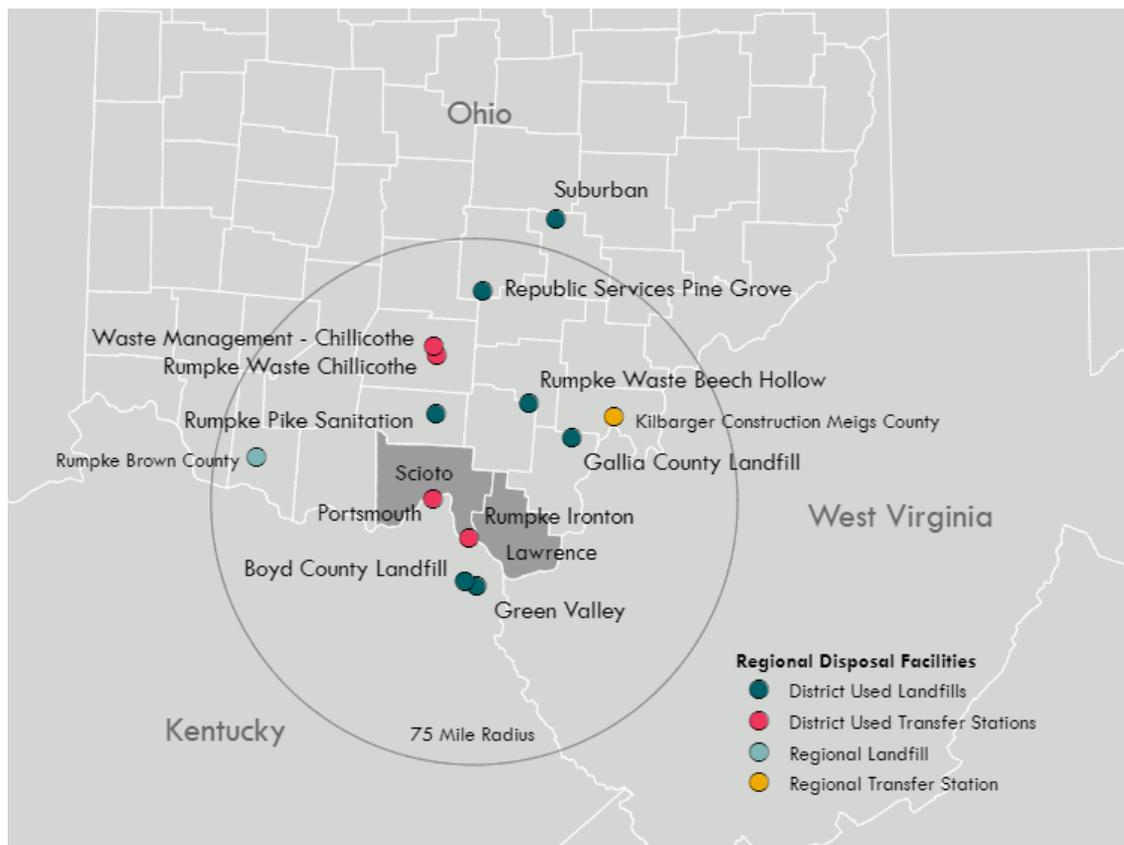
a. Evaluation

WASTE IMPACTS

Wasteshed is a term used in the materials management field to describe where, and how, materials ‘flow’ throughout a given geographical area. Much like a watershed, waste is not confined to city or county boundaries and can flow along multiple channels. Unlike water however, the flow of waste is based around economic drivers, the presence of facilities, roads and highways, and contracts between haulers and processors.

There are 7 landfills and 5 transfer stations within 75-mile radius of the center of the Lawrence-Scioto Joint Solid Waste District. The District only uses 5 of the landfills within the radius, in addition to one landfill located outside of the 75-mile radius (Suburban Landfill). The SWMD used landfills are 45 minute to over an hour drive from the center of the SWMD. The two landfills located outside of the state, in Kentucky are within the closest drive time to the SWMD.

Figure H-28 shows a map of the surrounding counties and the landfills and transfer stations used by the SWMD in the reference year (2019). Green Valley Landfill accepts the most waste generated by the

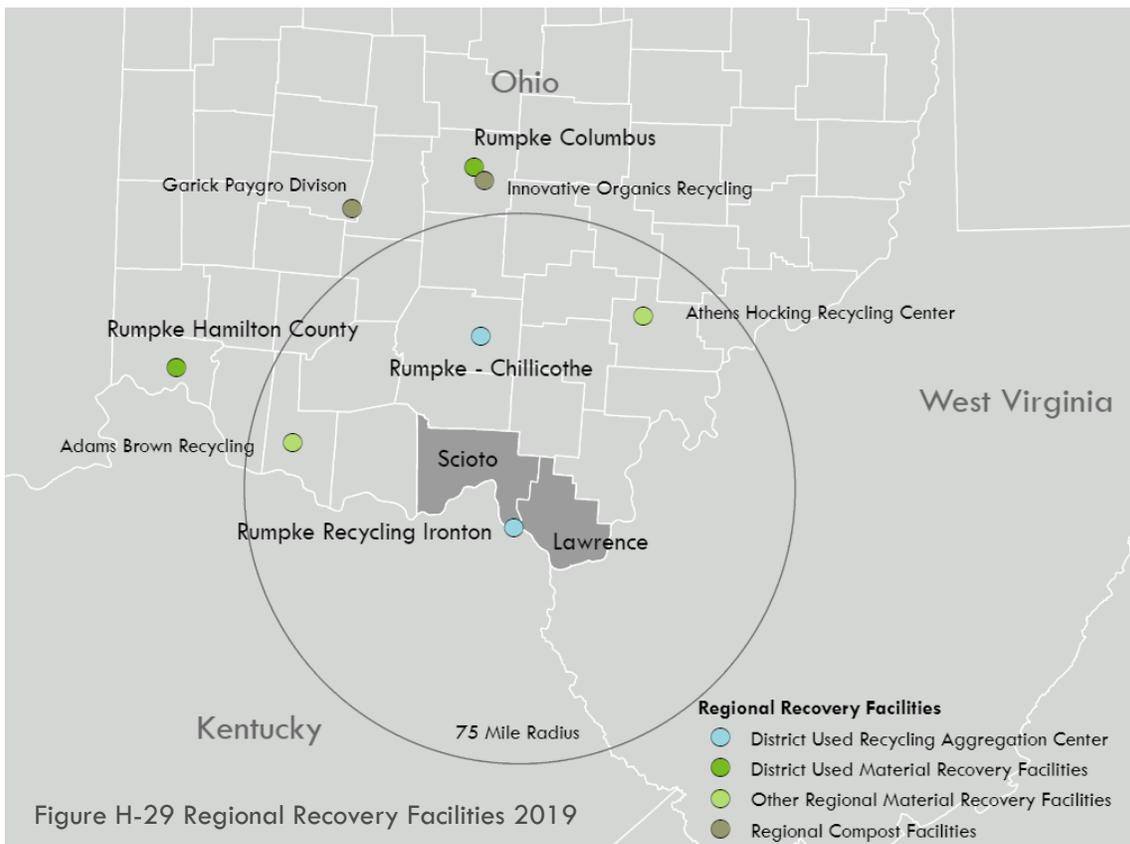


SWMD at 38%, followed by Pike Sanitation Landfill at 34%, Boyd County Sanitary Landfill at 27%. Beech Hollow Landfill only receives 1% of waste from the SWMD. In total, 64% of waste from the SWMD is directly hauled out of state.

Green Valley Landfill, Pike Sanitation, and Boyd County Sanitary Landfill receive 99% of the waste generated by the SWMD. Pike Sanitation is in Pike County Ohio, while Boyd and Green Valley are located in Kentucky.

DIVERSION IMPACTS

There are no material recovery facilities in the three neighboring SWMD's (Gallia-Jackson-Meigs-Vinton, Pike, and Adams-Clermont). Rumpke recycling has an aggregation center located in Lawrence, which accepts a third of the material (by weight) that is generated in the SWMD in a year. The Rumpke Center City Recycling located in Hamilton County received most of the material from Lawrence-Scioto, approximately 3,541 pounds. Rumpke Waste Recycling in Columbus is another MRF used by the SWMD and received a marginal amount of material comparatively to the previously stated Material Handling Facilities. Finally, Rumpke located in Chillicothe is a buyback, transfer and baling facility that only received 1 ton of material from the SWMD.



Regionally the private sector MRFs located in the population hubs of Cincinnati has capacity to support the volume of single stream recyclables. However, travel distance is around two and half hours' drive one-way. Better consolidation and transfer of recyclables is needed to manage the recyclables.

There is only one private sector hauler operating in the SWMD. Lack of competition is very limiting for the curbside and drop-off recycling collection services. As one of the most rural solid waste management districts in the region, the SWMD is lacking leverage for recycling contracts and hauling that larger districts have.

Regionally, organics (includes a variety of biodegradable feedstocks, including yard debris, wood chips, brush, wood waste, manure, household organics, soiled paper, and food scraps) diversion facilities (Class II, III, and IV) are not within a reasonable transport distance. Collection of organic waste is integral to any

composting system. Collection economics is generally more than twice the processing cost on a per ton basis. There is a lack of processing facilities as well as collection infrastructure to transport feedstock to the processing facilities. Major investments are needed for the organics diversion opportunities in the SWMD.

b. Conclusions/Findings

The Lawrence-Scioto SWMD is located at the southern most end of Ohio, causing a unique challenge for cross-state waste transfer, recovery, and disposal. There are a finite number of facilities within reasonable transfer distance from Lawrence and Scioto counties. There is neither a material recovery facility, nor a disposal facility located in the SWMD, making the SWMD reliant on out-of-district and out-of-state facilities. These facilities are run by Rumpke or the corresponding municipal governments. Potential opportunities include:

- There is opportunity for increased partnerships between Lawrence-Scioto and adjacent solid waste districts to use their facilities, in addition to increased relationships with Rumpke and the use of these facilities.
- The SWMD could create partnerships with Adams Brown Recycling Facility and the Athens Hocking Recycling Center since both are the closest in-state MRFs to Lawrence and Scioto Counties.
- More material could be collection within the SWMD and then transferred collective to MRF in a more streamline coordination.
- Organics collection economics is prohibitive for expanding diversion of organic materials. The SWMD could look to focus on additional reduction strategies for managing this waste stream.

11. Population Analysis

Lawrence County has a population of 59,463 with approximately 72% owner-occupied housing rate (2015-2019)²⁸ And approximately 23,221 households. Population density is 137.7 persons per square mile.

Scioto County has a population of 75,314 with approximately 68% owner-occupied housing rate (2015-2019)²⁹ and approximately 29,858 households. Population density is 130.3 persons per square mile.

The SWMD does not have a rapidly changing population. According to the Ohio Department of Development Services Agency, population demonstrated a negative change between 2010 and 2019 of approximately 0.4% in Lawrence County and 0.6% in Scioto County. During this same time period, Ohio's population grew 1.3%.

Based on historical generation rates, the SWMD does not anticipate major fluctuations or changes due to population.

12. Data Collection Analysis

This analysis evaluates the SWMDs current data collection efforts and identifies ways to improve its data. Waste is generated by three sectors: residential, commercial and industrial. Waste source reduced, recycled, composted, incinerated, and disposed are measured to establish a baseline and determine waste generation, and measure recycling rates. Collecting data is challenging due to a variety of factors, and takes considerable time and effort to gather and analyze. Regardless, the primary objective of the SWMD is to divert materials from

²⁸ U.S. Census QuickFacts. <https://www.census.gov/quickfacts/fact/table/lawrencecountyohio,sciotocountyohio/PST045219>

landfills, therefore an accurate measurement of diversion from landfills is needed. The data collection process from beginning to end for each sector is described below.

The SWMD devotes staff time to overseeing and collecting data.

Residential

The SWMD gathers data from service providers, non-profits, internal SWMD tracking of drop-off and special collection events, and Ohio EPA annual published data.

Most of the data received from waste service providers covers the recyclable waste generated by the residential sector. Haulers and waste service providers are surveyed for data through mailers sent to haulers business' addresses. Mailers can be sent back to the SWMD office for collection and data entry. Ohio EPA data that is used for the annual district report includes Material Recovery Facility and Commercial Recycling Data, Compost Facility Report Data, and Scrap Tire Data. When inputting data double counting is tracked through comparing the EPA data with the haulers surveyed.

Commercial

The SWMD gathers data from commercial businesses and Ohio EPA annual published data. Surveys are sent via mail to registered businesses in the Lawrence SWMD. The list of survey participants is currently outdated and needs to be updated for the commercial sector. There are only a small number of businesses listed, when the number of businesses is much higher and addresses/contact information have changed over the years. The SWMD's list has a total of 24 businesses. Seventeen of those responded in 2018 and 16 in 2017. According to U.S. Census data, the SWMD has about 794 total employer establishments²⁹ in Lawrence County and 1,252 in Scioto. Approximately 46% of the total number of establishments are less than 5 employees. Research shows there are approximately 578 commercial businesses³⁰ in Lawrence County and 943 in Scioto County with NAICS codes related to wholesale trade, retail trade, accommodation and food services, arts, entertainment, and recreation, etc. Surveying all of these entities would require a considerable amount of effort, time, and money. However, compiling a list to sort by largest generators to survey and then to also utilize for outreach to help set up recycling programs would be very beneficial. This list could be compiled by working with chamber of commerce.

The SWMD would benefit by developing a process for conducting surveys. The process should determine who and how many businesses will receive a hard copy, add an online platform for submitting data, add a notification and/or a reminder for completing the survey, determine follow up outreach plan.

Only a fraction of commercial businesses are surveyed and an even smaller proportion contribute to the recycling data through the survey. Currently, the SWMD conducts minimal outreach to commercial entities after surveys are delivered. There are roughly 5-6 consistent survey respondents from year-to-year that the SWMD receives data from, but there are no additional attempts to collect data. Of the 25 businesses that were sent surveys via mail, 6 responded with data, making the response rate 24%. The number of commercial businesses are predicted to be much higher than that amount, therefore the response rate could be much lower in years to come once an accurate list of commercial businesses is acquired for future mailed surveys. There are potential gaps in data due to the limited amounts of businesses surveyed and haulers/recyclers reporting more materials recycled than within the SWMD.

²⁹ <https://www.census.gov/quickfacts/fact/table/lawrencecountyohio,sciotocountyohio/PST045219>

³⁰ <https://data.census.gov/cedsci/table?q=Lawrence%20County,%20Ohio%20Business%20and%20Economy&tid=CBP2019.CB1900CBP> and <https://data.census.gov/cedsci/table?q=Scioto%20County,%20Ohio%20Business%20and%20Economy&tid=CBP2019.CB1900CBP>

To avoid double counting the SWMD strives to identify if there are any materials that might be reported by more than one entity through survey respondents identifying the hauler they use. If the hauler and the business's identified hauler are the same, data is adjusted for double counting.

Ohio EPA's data collection efforts help considerably to capture the large box store usable recycling data.

Industrial

The SWMD gathers data by surveying the industrial sector businesses and uses the same Ohio EPA data reports as the commercial and residential sectors. The same survey procedure described for the commercial sector is also used for the industrial sector. Survey mailers are sent to registered businesses in the SWMD. Similarly, to the commercial sector, there are only a limited number of surveys sent out. In 2020, 16 mailers were sent to industrial entities and 3 responses were collected, making the response rate 19%. The number of industrial businesses could be higher, but this is unknown. The same double counting procedures are completed as the commercial sector for the industrial sector data.

Planned Improvements

Overall, data collection is vital to measuring the waste reduction and recycling rate. The limits to data collection have impeded the SWMD's ability to achieve goal #2 of the Ohio EPA State Plan. The SWMD does not provide additional follow up to solicit a survey response currently. Additionally, few survey responses are received annually. Currently the criteria for selecting survey participants are not clearly defined. The SWMD has used the same list of survey participants for the last few years, but the origin of this list, and the reason those participants were chosen is unknown. Most likely, these are outdated lists of industrial and commercial businesses that has been repeatedly used. Changes to increase data collection for all sectors (see below) for this 2023 Plan should consider.

Increasing data collection efforts through the following:

- Acquire an accurate and current list of businesses within the district to survey.
- Create an online survey option for respondents to increase response rates for all sectors.
- Include online survey link via mailers and provide SWMD email to address any questions from mailer recipients.
- Collect accurate commercial and industrial business contact information to increase the number of mailers sent and to send mailers to accurate addresses.
- Create an outreach and follow up schedule to follow up with businesses after mailers are received.
- Conduct phone calls and send emails to businesses to acquire recycling data, while prioritizing businesses that did not respond to mailers.

Increasing data management through the following:

- Create data collection workbook that can compare previous years data, includes a total amount of materials recycled by residential/commercial and industrial, and house all outreach data.
- Include data from EPA reports and waste collection events within workbook.

13. Education/Outreach Analysis

This analysis evaluates the SWMD's existing education, outreach, and technical assistance efforts to determine the following elements of the 2020 State Solid Waste Management Plan:

- If the programs address all five target audiences (residents, schools, industries, institutions and commercial businesses, and communities and elected officials).
- Effectiveness and adequacy of programs.
- Strategy for incorporating Goal 4 into the programs.

GOAL 3: MINIMUM REQUIREMENTS

District Website

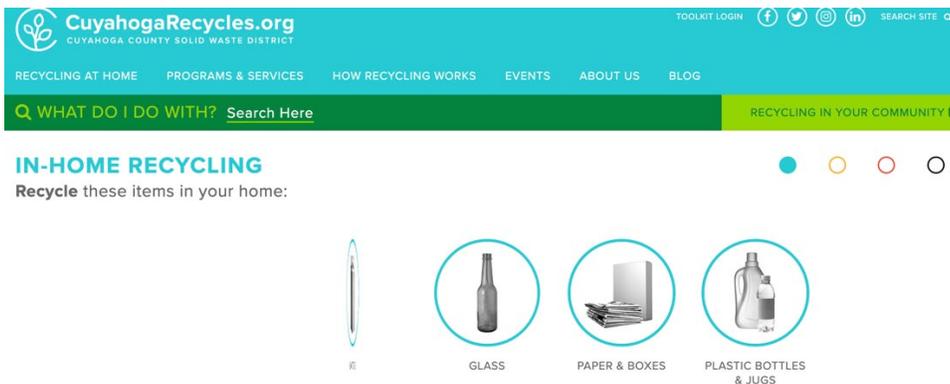
The SWMD maintains a website at www.lsswmd.org. The website should be a resource providing much of the information that residents would seek. However, the webpage provides limited information and resources. Essentially, the webpage provides an inventory of outlets for drop-off recycling sites (locations, materials accepted), recycling and litter trailer, sponsor-a-site, and photos/videos of school programs.

Conclusions/Findings:

The website is not regularly maintained or updated. For instance, the Facebook link directs the user to an old Facebook site that is not maintained. As a resource it needs to be updated regularly. Additionally, there are opportunities for site improvement and education and outreach consistency to better the webpage. It would benefit the SWMD to give the website a major overhaul in design and provide updated information.

Design Recommendations: Develop unified branding for site

- Colors, fonts, and graphics/photos that create a coherent visual to be carried across all communications. Bold color palettes, simple layouts, and impactful images will create a fresh and modern look and feel that will draw the attention of the audience. Below are two snapshots of Stark Tuscarawas Wayne and Cuyahoga County solid waste district websites using these best practices.



Site structure Recommendations:

- The homepage is key to user navigation it should be updated regularly to reflect recycling services. It is also the landing page and should be organized so that the most frequented information sought after is easily found and organized on this page. When designing the site ask, “What are the core questions people have when visiting our site?” and include only pages which answer these questions when determining the drop-down menus.
- Keep layouts simple.
- To effectively plan out the site’s organization, create a visual sitemap.
- Develop top tier menu items such as “Residents”, “Businesses”, “Schools”, and “Litter”. Under each menu item include all resources each main category level needs: education items, tool kits, recycling information, source reduction information, etc. An example of the type of information that would categorize in the “Residents” menu includes
 - Drop-off locations and information on what to recycle at drop-offs
 - Composting resources
 - HHW, Tires, E-waste, etc resources
 - Source reduction resources
 - Take Back programs, scrap yards, re-use centers, etc.
- Responsive web design (mobile phone friendly).

Content Recommendations:

- Build the recycling resources and education on the webpage. Resources to include: embed interactive maps for drop-off site locations; add short less than 1-minute videos instructing how to recycle right; add a “What do I do with?” inventory to provide a list of options of how to source reduce or divert materials; list special collection opportunities (tires, HHW, e-waste); etc. A list of outside infrastructure including medical takeback programs, reuse centers, scrap dealers, etc. help direct users to a comprehensive list for managing their waste.
- Add a “Business Services” menus to list options for what commercial and industrial businesses should do with their recyclables. Resources to include: links to Ohio EPA Materials Marketplace; annual report surveys; recycle at work resources; self-audit waste audit tool kit; etc.
- Track on-site web analytics.
- Add information on how to back yard compost.

Comprehensive Resource Guide

A comprehensive resource guide in print format has not been published. The SWMD’s website is a resource guide but needs additional resources to be comprehensive.

Inventory

The inventory of solid waste management infrastructure is located in the solid waste management plan and updated every 5 years. Additionally, drop-off recycling locations are identified on the website.

Speaker

The District Coordinator is available for speaking engagements but mainly meets one on one with local officials and various jurisdictional departments. Additionally, the District has an Education Specialist whose duties include speaking engagements to the public, commercial, industrial, and school audiences. Objectives for the Education Specialist outlined in the 2107 Plan include:

- Compile a list of civic groups and complete 10 presentations
- Complete 40 presentations/field trips

Unfortunately, the SWMD does not have updates on success or progress tracking since this was implemented. Year 2020 and into 2021 found the SWMD undergoing many changes with staff retirement, low staffing levels, and then new staffing changes. Annual district reports to Ohio EPA included minimal updates making it challenging to determine the progress.

At a minimal the SWMD needs an Education or Outreach specialist dedicated to lead and build the education and outreach efforts.

GOAL 4: OUTREACH AND EDUCATION

All types of behavior change initiatives, even mass-media based campaigns, can successfully employ the tools of social marketing, which include social norms, goals/commitments, feedback, prompts, and one-on-one interactions. The SWMD could develop a toolbox of offerings. Types of outreach strategies and marketing collateral would include:

- Flyers & Postcards
- Events
- Dynamic Website
- Media Opportunities
- Internal Communication
- Contests
- School Outreach
- Digital Communication
- Specific Outreach to Target Audience

The SWMD's education programs fall into 3 broad categories. As shown in Table H-14 these categories are Residential Education and Awareness, Commercial/Industrial Education and Technical Assistance, and Education Specialist. The SWMD organized these categories into a matrix to evaluate which education and outreach programs utilize outreach strategies and marketing collateral. When displayed in this matrix the programs have the basic structure elements. However, further assessment is needed to see how effective the programs are.

As shown in the table below, the SWMD has 23 programs identified as education and outreach programs. Some of these programs (as identified in the 2017 Plan Update and found on the Annual District Report Implementation Schedule) can be streamlined to develop programs to better grow with the SWMD and direction of this 2023 Plan Update.

This analysis evaluates education /outreach and discovered some programs could be improved to strengthen the outreach. For instance, the Commercial/Industrial Education and Technical Assistance program provides waste audits but there is a lack of outreach to the sector. A gap is communicating this service offering to the commercial and industrial sectors. Many programs are geared towards disseminating materials rather than changing behavior.

Table H-14 Education and Outreach Programs

Program	Method of Outreach								
	Flyers & Postcards	Events	Dynamic Website	Media Opportunities	Internal Communication	Contests	School Outreach	Digital Communication	Specific Outreach to Target Audience
Residential Education and Awareness									
Advertising to promote special events				X					
Caught Green Handed Contest				X		X			
Electronic Newsletter									X
HHW Education	X	X							
Brochure & Flyers	X								
Composting brochure	X								
Litter Prevention brochure	X								
Recycling/Litter Trailer - Volunteer group promotion of the recycling litter trailer to area schools and clubs		X							
Yard Waste Education for Ironton/Portsmouth Residents									
Public service announcement regarding cigarette butt litter				X					
Partnering with local cities, villages, and townships to educate residents about recycling opportunities									
Monthly newspaper advertisement				X					
Illegal Disposal Education									
Identify and address Scioto County residents' barriers to participation in electronics collection events									
Expand drop-off information on website			X						
Environmental Crimes News Updates									
Drop-off brochures	X								
Development and distribution of educational poster regarding the costs of legal vs. illegal scrap tire disposal									
Sponsor-a-site promotion									
Advertising District services and events									
Promote reduction of HHW generation									
Commercial/Industrial Education and Technical Assistance									
Waste Audits									X

Program	Method of Outreach								
	Flyers & Postcards	Events	Dynamic Website	Media Opportunities	Internal Communication	Contests	School Outreach	Digital Communication	Specific Outreach to Target Audience
Expansion and promotion of e-waste recycling to institutional sector									
Education Specialist									
School Classroom Presentations							X		X
New School Recycling Program Presentations							X		X
Science Fairs									
Elected Officials Education & Outreach									
Working with local governments to tackle causes of illegal dumping									
Schools Education & Outreach									
Educational partnerships - reach out to area colleges to identify potential partnerships									
Other									
Establishing quantitative goals and measuring improvements									

The SWMD needs a multi-layered, multi-faceted marketing and outreach strategy that targets audiences by identifying who they are, where they live, and events going on in their lives. Additionally, marketing should focus on target audiences. Evaluating the SWMD’s education and outreach through the lens of the five target audiences identified in the 2020 State Solid Waste Management Plan the SWMD comes up short in having direct programs to reaching each of the target audiences.

Outreach and education are critical to a recycling program's success. Strategic communications campaigns provide the most powerful results in creating behavior change. The SWMD needs to implement best practices education campaigns that are simple and engaging with regular consistent messaging across multimedia platforms. Investments should be made in expanding communication programs to target groups and ensure diversion efforts succeed. As the primary hub of information, the SWMD website needs to contain accurate and up-to-date information. Education also goes hand in hand with operational and programmatic changes. The website and collateral marketing materials need to reflect any changes.

BRAND REFRESH: As part of an effort to position the SWMD as a trusted partner and community resource, the SWMD could look to refresh the brand. Re-freshen the brand and updating the website should be the first steps the SWMD begins. Steps would include a new logo, adopting a new color palette, fonts, appearances, and possibly adding a tag line. As an organization's major graphical representation, a logo anchors a company's brand and becomes the single most visible manifestation of the company. For this reason, a well-designed logo is an essential part of any company's overall marketing strategy.

Multi-layered and multi-faceted means various marketing materials, approaches, and collateral are used. If the SWMD re-brands, then all materials should be updated, and additional collateral developed. **Flyers, ads, postcards**, etc. should be re-branded and have a consistent recognizable look that ties the resident back to the SWMD. Flyer best practices include:

- Limited text with a visible call for action, typically to visit the website for more information.
- Colors consistent with the branding of the SWMD.
- Images that tell the story and compliment the call for action.
- Layout should be easy for the eyes to flow between images and content without overwhelming the user with additional repetitive text.

Flyers designed as a hand-out should include content information that is more static and doesn't change frequently. Including a QR code on a flyer can lead the intended party to a website with the updated information.

The **website** needs to be updated to reflect any branding refresh. The website is an incredible resource of information and needs to have the most up-to-date information on programs, services, and how to properly manage solid waste.

Social media such as Facebook, Twitter, YouTube, etc. allows for a two-way conversation with residents. However, a plan for regular management of social media should be considered before initiating an account. Often an inactive social media account can pose a greater risk than not having one. Social media also offers an unparalleled way to measure interaction with your target audience through reports on audience engagement. When using social media, the SWMD, should use these reports to create a baseline and set goals for future online engagement measurements. Also, be sure that if a web search is conducted for Lawrence Scioto Solid Waste Management District, the SWMD's webpage and social media hit the top of the search results. Meaning the brand re-fresh needs to tie back to any search functions.

The SWMD began a new Facebook site in 2021, however, when web searching the old site has not been deactivated and pings first when searching for the SWMD's Facebook site. Since starting the Facebook page in May 2021, the SWMD has 316 followers.

Advertisements in the newspaper are used to advertise the drop-off recycling locations and special recycling events. Research conducted in the 2017 Plan demonstrated the majority of participants (74%) at the HHW drop-off were informed of the event from the newspaper. This data was collected in 2013, a new survey, would help determine if newspaper advertisements continue to be an effective method for HHW drop-off. The survey could also expand to collect information as to whether this is an effective method for communicating information about drop-offs.

Target Audience: Residents – The SWMDs fundamental step is identifying and creating relationships with this target audience. Current education provides a general awareness for the service offerings but is lacking the engagement, relationship, and behavior changing elements.

DROP-OFF CONTAMINATION CAMPAIGN: Once these are complete the SWMD should look to build out a strategy to reduce contamination at the drop-off sites. The 2017 Plan Update set out a plan for new brochures distributed at grocery stores, new signage identifying drop-off locations, and expanding recycling information on the website. Measurements were not tracked to determine if any of these changes resulted in changed behavior.

The SWMD should conduct research to identify attainable and measurable goals for this target sector. Surveys or interviews with residents at the drop-offs will help realize their needs and opportunities. It would be most helpful to collect a sample set of quantitative data to discover a baseline for recycling behavior and current educational

knowledge. The research may discover a need to focus more specific topic, demographic or resident behavior change.

CAUGHT GREEN HANDED: It's not clear if this program continued beyond the 2017 Plan Update. Caught Green Handed promotes the act of recycling with recognition and awards. This type of program is social modeling and one of the elements that works well with community-based social marketing. This program emphasizes and awards behavior for recycling, and the publicity provided demonstrates peer influence and social approval. Community based social marketing strategies use strategies such as commitment, incentives, prompts, social modeling, and social norms to promote change. Each of the tools is matched to the behavior and context and some tools work better in some situations than others. For this strategy both incentives and social modeling are used to promote the change.

RECYCLING/LITTER TRAILER: The trailer is available for SWMD residents and volunteers groups to borrow for clean-up events. The website provides information about the trailer and guides the groups to contact the SWMD for use. The SWMD has noted very few groups request the trailer. In 2021, an inventory of equipment kept on the trailer found most equipment in non-working condition. It's not certain if the equipment was a deterrent to requesting the trailer or if the website is not adequate for relaying the information to interested groups. A more effective outreach could be communicating about the trailer at in-person events, using social media to advertise, promote photos of groups using the trailer, etc. However, before investing in replacing the equipment the SWMD should conduct a community survey to assess the need for maintaining the recycling/litter trailer. If in good shape the trailer could be transformed into a recycling education trailer designed as a walk-through interactive that could be used at fairs, festivals, or school events.

LITTER EDUCATION: The 2017 Plan identified illegal dumping and littering as key issues in the SWMD. Five years later they remain a key issue. Education to date has not be effective for combatting issue. However, most of the education has been focused on enforcement and media covering the offenders. To help prevent litter the SWMD should try adding tips to the website, social media, and other marketing collateral to educate residents in preventing litter in the first place. Also, add information regarding clean-up events residents can participate in. Collaborations such as Keep Ohio Beautiful and Keep Southeast Ohio Beautiful are excellent resources for residents that want to help. The SWMD also offers Sponsor-A-Site program and participates in Ohio River Sweep. These events are opportunities to provide more media attention to the groups already cleaning up areas. Positive re-enforcement of community members changing behavior is powerful.

In a report by Keep America Beautiful³¹, strategies to help end litter include:

- Providing adequate and convenient waste management services;
- Having adequate receptacles and implement other environmental design strategies;
- Education and outreach;
- Ordinances;
- Monitoring and surveillance;
- Penalties/enforcement; and
- Cleanup efforts.

The SWMD suspects a combination of issues as to why littering and illegal dumping occurs in the SWMD: inadequate waste management services, generators not knowing what to do with waste, or those not wanting to pay for proper management. Monitoring, enforcement, and cleanup efforts are all tactics used by the SWMD. To

³¹ "Litter Abatement Curriculum 2017". Keep America Beautiful.

understand the reasons behind littering and open dumping in the community the SWMD could gather research directly from the people living in the communities, political stakeholders, and experts. After gathering the research to be more effective the SWMD could employ community based social marketing principles for behavior change.

Gathering research is a way to get neighbors and the community involved. The research should be performed by conducting a community survey, holding focus groups, and hearing from experts. Goals are to understand what motivates people to illegally dump and enable strategies to address the motivations.

Additional possible solutions include strategies to address litter before it happens. Such strategies include:

- Community contracting to provide garbage and recycling collection to all single-family households (which usually includes smaller multi-family dwellings) via a contract or franchise agreement with a service provider. When residents pay for their own trash collection, some residents may illegally dispose of their trash to avoid paying that cost.
- Provide residents with information about programs that exist to manage items at the end of their useful life.
- Provide low-cost or no-cost collection of household hazardous waste (HHW), scrap tires, appliances, and other hard to manage materials.
- Provide convenient options for management of construction and demolition (C&D) materials.
- Educate residents about: waste management programs in place, ordinances that exist against litter, and the enforcement actions that can result from violations of these ordinances,
- Research if bulky item curbside collection is available and what cost households pay for bulky item disposal. Explore whether the SWMD can provide vouchers for citizens to disposal of bulky items. Engage with private haulers/scrap haulers to provide on-demand pick up for lesser fee or free (A scrap company in Butler County SWMD offers appliance pick up for free). Engage with private haulers to explore adjusting rates to include bulky pickup as part of the base service costs.

PROMOTING REDUCTION OF HHW: This program set to begin in 2017 didn't come to fruition. Developing a program to demonstrate minimal purchasing of HHW or alternative/green cleaning products can supplement the HHW strategies. Teaching reduction and avoidance by educating and showing other alternatives. Once the content is developed it should be incorporated in the marketing collateral, social media and website.

Target Audience: Communities and Elected Officials – outreach to the elected officials is not formally tracked. The SWMD meets frequently with the County Commissioners in each County. Litter more than recycling is a main topic when discussions take place. Outreach to this audience has traditionally been one-on-one. The SWMD is a resource for the communities and more partnership with shared messaging or directly linking SWMD website and Facebook would provide more exposure for the SWMD and to residents wanting to know how to properly dispose of materials.

The SWMD could offer easy ways for leaders to become more familiar with recycling basics by hosting webinars, inviting them on a field trip to a recycling center, etc. This could expand to all communities and elected officials. With so many initiatives that policymakers involved in daily, recycling and waste reduction are not always a top-of-mind issue. The SWMD produces a Newsletter which could be altered into an annual report for elected officials to be keep up to date on SWMD recycling measurement and program achievements. Tracking inquiries with communities on contract assistance and technical questions is also a good measure that should be recorded.

The SWMD could also develop educational material regarding contracts and franchising communities.

PARTNERING WITH LOCAL CITIES, VILLAGES, AND TOWNSHIPS: The 2017 Plan crafted this program to reach out to local governments to request cooperation in a joint effort to educate residents about recycling opportunities available to them. The SWMD will request that local governments add a recycling page to their website, or, add a link to the SWMD's website. The SWMD would also provide communities with content for the recycling site, which will include community-specific information about recycling programs, permanent drop-off sites, a schedule for part-time recycling sites, instructions for using the drop-off sites which highlight the selection of materials accepted, the SWMD's contact information and website link, and other information. It was expected this outreach would take a year from 2018 to 2019. This outreach never was accomplished.

Target Audience: Institutions and Commercial Businesses - Commercial sector entities are defined as commercial businesses, multifamily facilities, schools and universities, government agencies, office buildings, stadiums, amusement parks, event venues (stadiums, concert halls), hospitals and non-profit organizations that receive dumpster or compactor service for garbage. Target for this audience is administration and facilities maintenance.

The SWMD has been very effective targeting school administration to set up recycling programs at schools. Thirteen of the twenty-two school buildings in Lawrence County and twenty-four of the twenty-nine buildings in Scioto County have recycling. The SWMD accomplished this through direct outreach to the school administrators. Once the programs are set-up additional direction and education is provided to the staff, custodial staff, and students to explain the new program.

Areas where the SWMD has gaps include reaching the businesses. Working through education partners like Chamber of Commerce, and recycling education partners to identify companies that would financially benefit from a diversion program would be an effective way to initiate a successful data collection and business targets.

To build more education and resources for this target audiences the SWMD should dedicate a menu option on the website for businesses. This could link to resources for businesses to clarify what is and is not recyclable in a given program, toolkit for commercial recycling, and other educational collateral.

The SWMD could consider a Environmental Stewardship Award. Potential exists for the SWMD to nominate businesses in the area that are going above and beyond for recognition or allow businesses to self-nominate via an online nomination process. Businesses applying would also include the recycling and waste recovery data sought in the annual survey as a prerequisite for this program. Using a digital process decreases the amount of legwork required for the project and collecting this annual data more efficiently.

The District could offer recycling grants for businesses of varying sizes within that start recycling initiatives. Recycling grants could be coupled with completing business surveys as a prerequisite to being eligible for grant funds. This method will not only help the business realize the cost savings but also further build relationships with businesses within the district.

Environmental Stewardship Awards and grants can provide newsworthy angles. These news stories can increase exposure to the SWMD efforts beyond a one-time story.

The 2017 Plan designed an initiative expanding drop-off containers to five government agency locations to provide a recycling opportunity. As part of this program expansion the Education Specialist was planning to visit government offices, provide them deskside bins, and explain the program. After six months of implementation, a return visit was planned to observe the use of the program and conduct a visual waste audit. This was set to end in 2018 but should be considered an ongoing education and outreach tactic.

Target Audience: Schools – Primary, secondary, vocational schools – The 2017 Plan designed an outreach strategy to develop a school brochure of presentation offerings. Outreach to schools was not clearly defined but may include letters, emails or phone calls. Following any presentations an evaluation and tracking form would be completed. A goal of 40 presentations was set. A record of the number of events nor evaluations was found at the time of this 2023 Plan Update. Additionally, the annual district reports reported to Ohio EPA did not outline the progress for school outreach. Other SWMD’s have shown success getting into classrooms when presentation topics are tied to the Ohio Academic Content Standards with an emphasis on Science and Communication. Contests such as calendar art, trash art, etc are also popular programs to conduct in classrooms.

As part of new recycling programs in schools, classrooms may choose to “Build a Bin” for their classrooms as a cooperative art or science project. The involvement in creating the containers personalizes recycling for the children. Best practices include every garbage container is accompanied by a recycling container.

The SWMD could offer teacher workshops, seminars or presentations to cover relevant topics that can be taught with lessons. The SWMD could facilitate sessions an in-service days or early release training. Teachers could then take their knowledge and continued professional development to apply in their classroom. Field trips could be arranged for teachers and classrooms to landfills, material recovery facilities, or compost facilities.

With recycling programs in school, to maintain the program student-volunteers could create a schedule for servicing the recycling container, design flyers to promote it and discover operational needs like tippable carts or alternate collection containers to bring heavy paper to the outdoor collection container. In an operational plan, it should be noted if a container is too heavy that the student volunteers will ask for assistance. With lighter food and beverage recyclables education on the best way to avoid contamination should be addressed.

Target Audience: Industries: At this time, the emphasis on this target audience is to encourage the completion of the industrial surveys. The outreach strategy for commercial businesses could also be used in the manufacturing sector to pinpoint top industries (see Appendix H) and incentivize completion of the survey data. To meet State Plan Goals the SWMD needs to have three programs targeted to this audience.

14. Processing Capacity Analysis

The purpose of this analysis is to evaluate existing capacity for processing recovered materials. The analysis evaluates material recovery facilities (MRFs) in the SWMD and surrounding areas. A MRF is a specialized facility that receives, separates, and prepares recyclable materials for marketing to end-user manufacturers.

a. Evaluation

The District does not own or operate a material processing facility and therefore materials collected through the SWMD’s drop-off and other collection programs are sent to MRFs outside of the District. Table H-15 identifies the MRFs used by the SWMD in 2019 and those MRFs within the larger regional area.

Table H-15 Regional MRFs & Processing Capacity

Used by District in Reference Year	Facility Name	County	Type of Ownership	Material Streams Processed	Distance from SWMD Center (Miles)	Tons Per Year
Yes	Rumpke - Chillicothe	Ross	Private	Buyback & Recycling Satellite	69	Not applicable

Used by District in Reference Year	Facility Name	County	Type of Ownership	Material Streams Processed	Distance from SWMD Center (Miles)	Tons Per Year
Yes	Rumpke Center City Recycling - Hamilton County	Hamilton	Private	Single Stream	141	188,300
Yes	Rumpke Recycling	Lawrence	Private	Satellite	6	Not applicable
Yes	Rumpke Waste Recycling - Columbus	Franklin	Private	Single Stream	119	101,350
Total Processing Capacity						289,650
No	Adams Brown Recycling Center	Brown	Public	Multi-Stream	87	1,150
No	Athens-Hocking Recycling Center	Athens	Public	Multi-Stream	87	4,150
Total Processing Capacity (Regional)						294,950

Source(s): Ohio EPA. Ohio's Material Resource Recovery Facilities. https://epa.ohio.gov/portals/34/document/general/Resource_Recovery_Facilities.pdf

All of the MRFs used by the District in 2019 are privately owned and operated facilities, located to the north of the District. There is a privately owned transfer station in Lawrence County, Rumpke Recycling center, that used to do some limited processing of materials. At one point the facility processed 25,000 tons per year, however now the facilities main function is to consolidate recyclables to be moved further north to one of two large Rumpke MRFs. These two main processors of the District's material are large single stream MRFs in Columbus and Cincinnati, which combined process about 290,000 tons of material annually. These facilities process glass bottles & jars, aluminum & steel cans, plastic bottles, jugs and tubs, mixed paper, cardboard, and cartons. While this MRFs appear to have ample processing capacity if the District were to expand recycling programs, the main challenge is the distance from these facilities and transportation costs.

Of the MRFs in the region (including those not used by the District) all are more than 60 miles away. Even looking at processing across the border into West Virginia and Kentucky the closest MRF is more than 70 miles away.³² Lack of closer processors creates challenges with high cost of transportation and limits competition and resiliency in the system. Regionally, there are two slightly closer, publicly owned facilities, not used by the District. These recycling centers process about 5,300 tons of material per year. The District could consider reaching out to these Districts – Adams-Brown and Athens-Hocking – to see whether they are interested in an increased volume of material. Consolidation of material and transportation would still be hurdles to overcome with working with these other Districts.

b. Conclusion/Findings

Recycling processing facilities are far from the District causing transportation challenges, higher costs, and lack of system resiliency. The District does have a private transfer station which helps with the consolidation and movement of materials. Exploring a hub-and-spoke system with other neighboring Districts could be worthwhile to discuss how to overcome transportation and material volume issues. The hub-and-spoke model could allow for expanded access to recycling. Regional discussions could also include potential

³² Kanawha County Solid Waste Authority in Charleston, WV operates a small local MRF that processes approximately 8,200 ton of recyclables per year. <https://kanawharecycles.org/>

organics solutions as there are no composting facilities within 50 miles of the Districts. (For more analysis of regional facilities and infrastructure see Appendix H – Regional Analysis).

APPENDIX I CONCLUSIONS, PRIORITIES, AND PROGRAM DESCRIPTIONS

This Appendix describes the accomplishments of the strategies/programs and their future direction for the 2023 Plan.

A. Actions and Priorities

1. Actions* (what could be addressed)

The evaluation in Appendix H evaluates the SWMD’s performance of strategies/programs in offering and maintaining services as outlined in the 2017 Plan. The process of the evaluation shows whether actual performance is what was expected or desired. If strategies/programs didn’t perform as intended or challenges were identified, then suggestions were provided to strengthen programs, improve performance, and/or increase effectiveness.

The areas of improvement do not commit the SWMD to undertake every specific action. To help the SWMD determine priority areas for actions, the SWMD staff engaged in a strategy session. Through this session a broad goal to achieve greater than 25% residential/commercial diversion rate and develop a campaign to change behavior was established. With this goal in mind, strategies and actions to accomplish this goal were discussed, identified, and prioritized.

2. Priorities

Priority areas to focus efforts in the 2023 Plan include:

Priority Program	Priority Area
Drop-off Program	Expand to add glass. Strategize drop-off locations to optimize volume and cost savings – right size service.
ReUse Corridor Partnership	Setting a goal to be active in the ReUse Corridor.
CHaRM	Open two centers for hard to recycle materials, one in Lawrence County and the other in Scioto County, called CHaRM.
Recycle740	Rebrand, increase recovery outreach campaign

Strategies/programs being implemented currently address these priority areas. However, based on the evaluation, the programs can adapt specific actions to continue to progress towards the broad goal.

B. Programs

Residential Recycling Infrastructure

Curbside Recycling Services

None.

Drop-off Recycling Locations

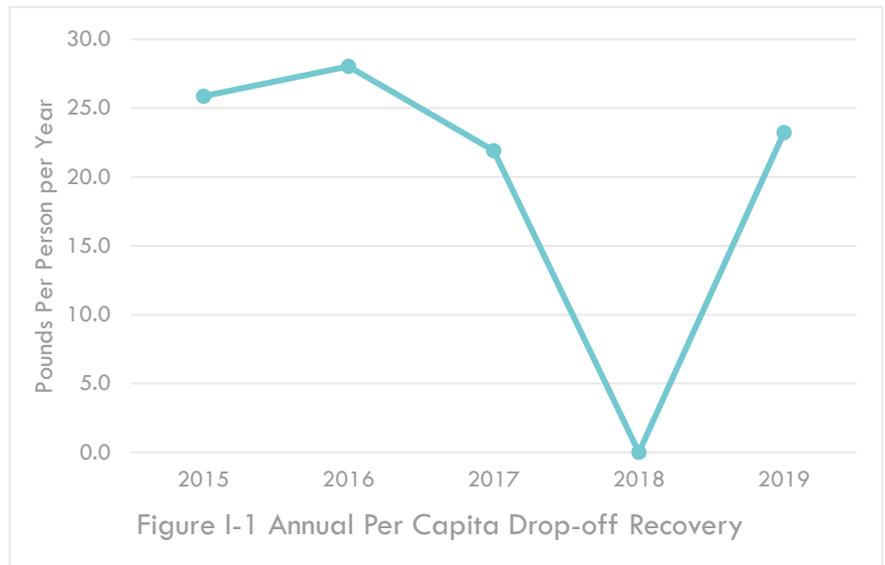
ID	Name	Start Date	End Date	Goal
Full-Time Urban Drop-off – Lawrence County				
FTU1	County Fairgrounds (Co Rd 411, Proctorville)	ongoing	ongoing	1 and 2
FTU2	Food Fair (409 Solida Rd, South Point)	ongoing	ongoing	1 and 2
FTU3	Chesapeake Municipal Court (Co Rd 1, Chesapeake)	ongoing	ongoing	1 and 2
FTU4	Lawrence County Educational Service Center (304 North 2 nd Street, Ironton)	ongoing	ongoing	1 and 2
FTU5	Kroger Plaza (6232 Co Rd 107, Proctorville)	ongoing	ongoing	1 and 2
FTU6	Ohio University Campus (1804 Liberty Ave., Ironton)	ongoing	ongoing	1 and 2
FTU7	Paul Porter Park (221 Lane Street, Coal Grove)	ongoing	ongoing	1 and 2
FTU8	Perry Township Volunteer Fire Department Sheridan (Co Rd 1, Sheridan)	ongoing	2019	1 and 2
FTU9	Rome Trustees Building (9666 St Rt 7, Rome)	ongoing	ongoing	1 and 2
FTU10	Food Fair (7604 St Rt 7, Proctorville)	ongoing	ongoing	1 and 2
FTU11	Burlington-Fayette Fire Department (Co Rd 1, Burlington)	ongoing	ongoing	1 and 2
FTU12	Ironton City Center (301 South 3 rd St, Ironton)	ongoing	ongoing	1 and 2
Full-Time Urban Drop-off – Scioto County				
FTU13	Valley Methodist Church (4720 Old Scioto Trail, Portsmouth)	ongoing	ongoing	1 and 2
FTU14	Village Hall of New Boston (3980 Rhodes Ave, New Boston)	ongoing	ongoing	1 and 2
FTU15	Barbour Auto Parts (915 11 th St, Portsmouth)	ongoing	ongoing	1 and 2
FTU16	Chevron (109 St Rt 522, Wheelersburg)	ongoing	ongoing	1 and 2
FTU17	Earl Thomas Conley Park (15888 St Rt 52, West Portsmouth)	ongoing	ongoing	1 and 2
FTU18	Kroger (9101 Ohio River Rd, Wheelersburg)	ongoing	ongoing	1 and 2
FTU19	Lowes (7915 Ohio River Rd, Wheelersburg)	ongoing	ongoing	1 and 2
FTU20	Portsmouth Square (1600-1700 11 th St, Portsmouth)	ongoing	ongoing	1 and 2
FTU21	SOMC Friends Center Lot (17 th & Oak St, Portsmouth)	ongoing	ongoing	1 and 2
FTU22	Scioto County Courthouse (607 7 th St, Portsmouth)	ongoing	ongoing	1 and 2
FTU23	Portsmouth City Hall	ongoing	ongoing	1 and 2

ID	Name	Start Date	End Date	Goal
Full-Time Rural Drop-off – Lawrence County				
FTR1	Wayne National Forest (6518 St Rt 93, Pedro)	ongoing	ongoing	1 and 2
Full-Time Rural Drop-off – Scioto County				
FTR2	IGA (8348 St Rt 335, Minford)	ongoing	ongoing	1 and 2
FTR3	Bloom Vernon High School (10529 Main Street, Minford)	ongoing	ongoing	1 and 2
FTR4	Nile Trustees Building (12215 US 52 West Portsmouth)	ongoing	ongoing	1 and 2
FTR5	Senior Center (144 Gervais Rd, Franklin Furnace)			
FTR6	Valley Township Fire Department (219 Beechwood Ave, Lucasville)	ongoing	ongoing	1 and 2
FTR7	Super Quik (1051 Galena Pike, West Portsmouth)	ongoing	ongoing	1 and 2
FTR8	Westside IGA (2335 Galena Pike, West Portsmouth)	ongoing	ongoing	1 and 2

The SWMD contracts with a private service provider (provide containers, collection and processing) to have available single-stream recycling drop-off containers. Containers are available for use 24/7. Materials accepted include plastic bottles and jugs, glass bottles and jars, metal cans, and paper. Containers are 8-cubic yards. The number of containers and service frequency depends on the location. Locations are serviced either once or twice a week. Drop-off site locations are subject to change at any time for unforeseen reasons or to maintain performance and reasonable costs.

The residential drop-off recycling program continues to present cost and contamination challenges for the District. See Drop-off Program Operation in this Appendix for a description of strategies the SWMD will implement to combat the contamination.

The drop-off program came to a halt in October 2018 when the contractor could not fulfill contract requirements. In January 2019 the SWMD signed with a different contractor to re-instate service to the program. Due to the contract issues the SWMD also did not receive the tonnage data for that year. Figure I-1 shows drop-off program annual recovery per person.



Target for Next 5 Years:

- Engage with drop-off service provider to add glass to the accepted material list.

Other Residential Recycling Programs

Name	Start Date	End Date	Goal
Subscription Curbside Recycling	2017	ongoing	1 and 2

This strategy was intended to engage the City of Ironton and Portsmouth City Managers to discuss options, challenges and potential solutions to developing curbside recycling through a series of meetings. This outreach strategy was not implemented in the last planning cycle.

Target for Next 5 Years:

SWMD will develop a position that can be presented to City Council with the goal of creating a committee of council to further study the options. If the special committee is developed, the District will work with the committee and the City Manager to vet out all of the options with the goal of recommending a pilot or full scale service to City Council (either subscription or non-subscription).

The District may offer recycling options to the City via the use of its recycling drop-off locations or dedicated site for the City to deliver collected curbside recyclables to aid in the creation of collection services at the curb. The

District will also evaluate other options to assist the City with providing collection services as determined through the engagement process listed above.

Neither the District nor the City commit to implementing a curbside recycling program as a result of this initiative, but both commit to conducting a good faith effort to evaluate the options and look for implementable solutions based on the evaluation results and engagement process. In fact, the District would like to see curbside recycling options for residents and will work towards evaluating and collaborating for start-up programs.

Name	Start Date	End Date	Goal
<i>Drop-off Location Monitoring</i>	2017	Ongoing	1 and 2

Four cameras are used to monitor problem sites and are moved as needed. Video footage can be retrieved via computer located in the SWMD office. The cameras have night vision and can be magnified to obtain license numbers, etc. Additionally, litter crew supervisors visit the site locations Monday through Friday to maintain cleanliness of the locations.

The District may adjust the drop-off program on an as-needed basis when improvements are identified or changes are required including the need to move, create or eliminate a site are recommended.

Target for Next 5 Years:

- Strategize drop-off locations to optimize volume and cost savings – right size service.
 - Visit all sites weekly to observe container fullness. Complete log reports, visual capacity reports, and chart to determine if any containers are being underutilized and which locations are over contaminated.
 - Based on data re-configure drop-off containers to optimize volume.

Name	Start Date	End Date	Goal
<i>Drop-off Program Operation</i>	2017	Ongoing	1 and 2

The District reserves the right to operate the drop-off program through the following mechanisms:

- Contract with a private solid waste hauler.
- Contract with a public sector solid waste hauler.
- District provided equipment and staff.
- Other operational options to be determined.
- Combination of any of the above as determined to be in the best interest of the District.

At any point in the planning period, the District may choose to operate the drop-off program using any of the above listed options or any new options that are deemed to be in the best interest of the District. The District intends to operate the program under the current philosophy of private contract unless it is determined that one or more of the options listed above are more favorable to the District into the planning period.

On-going program success litter supervisor & crew maintain cleanliness of container locations. Potentially add surveillance cameras camera use targets. Cameras are periodically moved between container locations) Footage can be retrieved via computer located in office cameras have night vision and footage can be rolled back and magnified to obtain license numbers, etc.

Target for Next 5 Years:

- Strategize drop-off locations to optimize volume and cost savings – right size service.
 - Visit all sites weekly to observe container fullness. Complete log reports, visual capacity reports, and chart to determine if any containers are being underutilized and which locations are over contaminated.
 - Based on data re-configure drop-off containers to optimize volume.

Name	Start Date	End Date	Goal
<i>Drop-off Program Signage Improvement</i>	2017	Ongoing	1 and 2

The District will assess the signage needs of each site and either install signs that are visible from the street or install signs at the actual drop-off site. on-going containers are labeled with clear details of acceptable materials.

Target for Next 5 Years: The District will change the material acceptance signs on the containers to show that glass is an acceptable material. Since the container signs are still in great shape, how best to modify the signs will be assessed. It’s hopeful the “fix” to cover up the glass items on the labels can easily be removed.

Name	Start Date	End Date	Goal
<i>ReUse Corridor Partnership</i>	2023	Ongoing	1 and 2

Target for next 5 years:

- Setting a goal to be active in the ReUse Corridor by collecting materials to send for aggregation and processing and help to develop processing infrastructure within the SWMD to fill gaps identified by the ReUse Corridor.
 - Engage with the ReUse Corridor to identify supply/demand gaps. This involves frequent meetings (possible monthly) to engage with other members and collaborators.
 - Pilot a collection point in one county to fill supply. This would serve as a drop-off site to collect materials that other ReUse Corridor members need. Such as mattresses, plastics, etc.
 - Explore with county economic development agencies and start-ups for technologies and entrepreneurs that could fill a supply/demand gap. Ideally strategizing to develop end markets in Lawrence or Scioto Counties where there are gaps.
 - Host material collection events and invite ReUse Corridor to collaborate their resources for collection and processing. Exchange service offerings, look for backhaul opportunities, hub and spoke development, etc.

Commercial/Institutional Sector Reduction and Recycling Programs

Name	Start Date	End Date	Goal
<i>Commercial Technical Assistance</i>	Ongoing	Ongoing	1 and 2

Available to implement and assist with recycling program establishment goal growth in awareness, program implementation, collect on assistance model used district wide to increase recycling activity and awareness for business/institution/industry, increased education has attributed to increased tonnage in cardboard, wood, metals and commingled recyclables collected and reported via surveys.

Name	Start Date	End Date	Goal
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Waste Assessment & Audits	2017	Ongoing	1 and 2
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The District will provide free waste audits or waste assessments to commercial or industrial businesses. The audits or assessments will be conducted on site by District staff. The audit will include a site visit, during which the District will identify the waste streams generated and the current waste reduction and recycling systems utilized. Following the visit, the District will provide the business with a summary report identifying strategies for implementing, expanding, or improving the current waste management system. The District will also provide information on securing a hauler, broker, or processor that accepts by-products or waste streams not currently being recycled (when available).

This program will allow more businesses and industries to personally meet District staff and give the District an opportunity to provide individual feedback to a business or industry on their recycling program, identify improvements, and promote other District services. This initiative, which can save businesses money while increasing recycling, will be advertised on the District's website. The District will also work with the Chambers of Commerce in the two-county area to promote this opportunity to their members.

The District currently contacts large local industries and businesses to notify them about the availability of this service and to schedule audits/assessments. The District will continue to directly reach out to large industries and businesses to offer the service.

No waste audits were conducted.

Name	Start Date	End Date	Goal
Drop-off Sites for Government Agencies	Ongoing	Ongoing	1 and 2

On-going recycling containers placed in areas close to both Courthouses, Municipal Court Buildings, City Halls, and Village Halls this allows convenience for recycling activity for government employees.

Name	Start Date	End Date	Goal
School Recycling	Ongoing	Ongoing	1 and 2

A total of 37 schools (13 from Lawrence and 24 from Scioto) obtained recycling collection containers from the SWMD to establish recycling programs. The SWMD provides 33-gallon cans for large areas such as cafeterias, gyms, and kitchens and 23-gallon space-saving rectangular containers for office areas. Many schools choose to use boxes decorated by students for recycling containers in classrooms. Collection is provided either by the school directly hauling to a drop-off bin or the school contracting with a service provider.

Also, some schools serve as a host site for SWMD drop-off recycling containers. These are for public use as well as school use. For public schools there is currently no model in place to track or measure amounts collected with a private service provider. If they use the SWMD drop-offs their volume is included in the SWMD drop-off amounts.

Target for Next 5 Years: Continue through the planning period.

Industrial Sector Reduction and Recycling Programs

Name	Start Date	End Date	Goal
Industrial Technical Assistance	Ongoing	Ongoing	1 and 2

Continue to provide upon request, promote Ohio EPA grants, and assist with grant applications. The District is available to assist and promote recycling activity to industrial businesses-increase awareness, reduce/recycle, provide a model for easy/manageable collection, provide containers and offer presentations to industrial sector.

Name	Start Date	End Date	Goal
<i>Waste Assessment & Audits</i>	Ongoing	Ongoing	1 and 2

Evaluate waste stream, collect percentage of industrial waste (cardboard, wood, metals, implement commingled collection), offer technical assistance (program implementation, containers).

Name	Start Date	End Date	Goal
<i>Commercial and Industrial Business Surveys</i>	Ongoing	Ongoing	1 and 2

Annual survey of recycling activities.

Target for next 5 years: Overall, data collection is vital to measuring the waste reduction and recycling rate. The limits to data collection have impeded the SWMD’s ability to achieve goal #2 of the Ohio EPA State Plan. The SWMD does not provide additional follow up to solicit a survey response currently. Additionally, few survey responses are received annually. Currently the criteria for selecting survey participants are not clearly defined. The SWMD has used the same list of survey participants for the last few years, but the origin of this list, and the reason those participants were chosen is unknown. Most likely, these are outdated lists of industrial and commercial businesses that has been repeatedly used. Changes to increase data collection for all sectors (see below) will include:

- Acquire an accurate and current list of businesses within the district to survey.
- Create an online survey option for respondents to increase response rates for all sectors.
- Include online survey link via mailers and provide SWMD email to address any questions from mailer recipients.
- Collect accurate commercial and industrial business contact information to increase the number of mailers sent and to send mailers to accurate addresses.
- Create an outreach and follow up schedule to follow up with businesses after mailers are received.
- Conduct phone calls and send emails to businesses to acquire recycling data, while prioritizing businesses that did not respond to mailers.

Increasing data management through the following:

- Create data collection workbook that can compare previous years data, includes a total amount of materials recycled by residential/commercial and industrial, and house all outreach data.
- Include data from EPA reports and waste collection events within workbook.

Restricted/Difficult to Manage Wastes

Yard Waste

Name	Start Date	End Date	Goal
<i>Yard Waste Management</i>	Ongoing	Ongoing	6

The SWMD will keep an inventory of the registered compost facilities in the SWMD. Closure of two Class IV in-district compost facilities during last plan. Currently no registered compost facilities are operating within the

SWMD. Two municipalities in the SWMD have annual leaf collections – Ironton and Portsmouth which are land applied and tonnages not tracked.

Target for next 5 years: Additional work is needed to develop compost infrastructure in both counties and / or located for convenient use by both Counties. The District will meet one-on-one with Ohio EPA, local economic development agencies, and private developers and funders to explore development of this infrastructure. A target of 3 meetings a year is set. The District may issue a Request For Information to generate competition and interest to evaluate options for managing yard waste.

Household Hazardous Waste

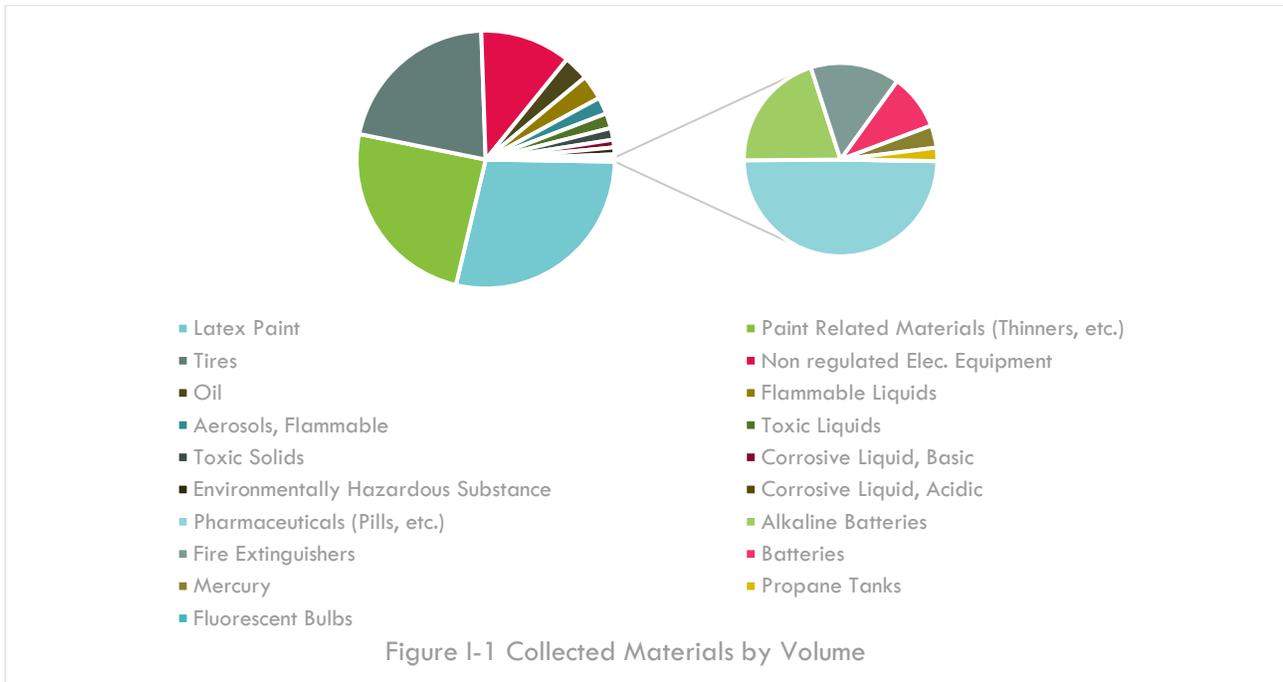
Name	Start Date	End Date	Goal
CHaRM (notice name change from HHW Collection Events)	Ongoing	ongoing	6

A service offering to residents are SWMD held bi-annual household hazardous waste (HHW) collection events. Users have not been charged users fees for the service. Examples of materials accepted include:

- Batteries
- Tires
- Aerosols, Flammable
- Paint Related Materials (Thinners, etc.)
- Oil
- Latex Paint
- Propane Tanks
- Fire Extinguishers
- Flammable Liquids
- Toxic Solids
- Toxic Liquids
- Corrosive Liquid, Acidic
- Corrosive Liquid, Basic
- Non regulated Elec. Equipment
- Environmentally Hazardous Substance
- Alkaline Batteries
- Fluorescent Bulbs
- Mercury
- Pharmaceuticals (Pills, etc.)

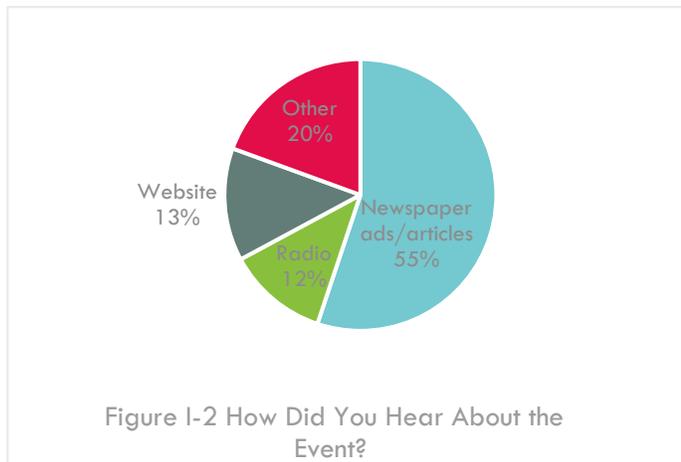
HHW collection events are typically scheduled for the last Saturday in September. An event was held in 2016, however, data was not recorded on the 2016 Annual District Report and due to personnel changes the data from the 2016 collection event was not able to be located. In 2018, the SWMD held a collection event collecting over 52,000 pounds or 26 tons to manage from 283 cars (121 from Scioto County and 162 from Lawrence County).

As seen in Figure I-1, over 75% of the volume collected was Latex Paint, Paint Related Materials, Tires and non-regulated Electrical equipment.



Residents who participated in the collection event were surveyed to determine how they heard about the event. Over 55% were informed by newspaper/articles, 20% by other which includes word of mouth, friend, etc., 13% by the website and 12% from radio.

In 2020, the SWMD held a Recyclefest day in Lawrence County and one in Scioto County. The day collected tires, e-waste, clothes, metals, mattresses, cardboard, document shredding, prescription drugs, rechargeable batteries, medical supply equipment, and residential curbside recyclables.



Target for Next 5 Years: The SWMD will open two centers for hard to recycle materials, one in Lawrence County and the other in Scioto County, called CHaRM. The operations would allow for increased recycling of materials in both counties and more access. A permanent more frequent management option will help alleviate the costs of one-day collection events and provide residents with more convenience. Both locations will also collect residential curbside recyclables (same as accepted in the drop-offs). The SWMD will:

- Collect data from each location on the number and/or tons of all materials collected and diverted.
- Study latex paint re-use and recycling options to determine best management options for diverting latex paint.

Studies of HHW collection operations at permanent facilities show cost saving economy of scale operations help lower operational costs. Examples of economy of scales implemented in HHW permanent facilities include:

- Adequate storage reducing transportation to processing facility
- Use reconditioned drums (DOT specifications apply) instead of new drums
- Do not lab pack products that can be managed as non-hazardous waste
- Bulk compatible liquids
- Consolidation of materials
- Work with hazardous waste contractor during facility set up
- Consider LEED design elements (recycled oil for facility heating, solar panels, etc.)

Also, some operations and handling of materials at collection can also minimize operation cost. Working to maximize the economy of scale to increase storage and lower transportation.

Plans for CHaRM facility are expected to be a phased-up development approach.

Phase 1: A limited-service CHaRM would include a gate house, HHW collection area, unloading area, site access roads, and fencing. A relatively cost-effective and quick set up could include an area for HHW prefabricated storage containment units that could be designed to be covered to protect from the weather elements during unloading. The recyclable drop-off area would be available 24 hours a day, 7 days a week. However, the other hard to recycle materials would have set days and hours per day for drop-off.

Phase 2: A full-service CHaRM is an extensively designed site and thus has considerable storage and management area to accept a range of materials, expanding the diversion opportunity available for residents. A full-service CHaRM would have all the features of the limited service. The District is estimating this would require about 3-5 acres. Operationally, the Full-Service CHaRM will require staff to operate a gate house, receiving building, cardboard compactor (assumed some material processing on-site), HHW collection, and various other bulking and processing tasks. The District could hire staff, contract, and/or subcontract operations. Hours of operation are flexible, but for this type of facility, anticipated operating hours are typically six hours a day five days a week except for holidays. Hours and operating days can be adjusted to meet needs.

Ideally the District is looking to purchase a property rather than lease. Site development and improvements are expected. The District will view properties in both counties with the ability to pursue where an opportunity is presented.

The risk to the revenues that pay for these services is real. Managing these materials comes at a cost. However, perception of residents may be that the service is “free”. The SWMD’s goal is to provide this service at no charge to the residents for as long as possible. Yet at some point, to continue to provide service the SWMD may need to balance the rate setting, i.e. charge user fees. At such time, the magnitude of declined revenues, rate stabilization and true costs of services will factor into rates that may be set to cover the costs of services.

To increase awareness and drive recycling participation is to develop flyers, brochures, newsletter and other advertisements that call attention to recycling as a way to decrease residents costs. The marketing material should highlight any user fees for residents to use. The marketing materials should also list what can be recycled and where the CHaRM centers are located.

Scrap Tires

Name	Start Date	End Date	Goal
CHaRM (name change from Scrap Tire Collection)	Ongoing	Ongoing	6

The SWMD provides scrap tire collection opportunities for residents at HHW collection events. Scrap tires are also collected Community Clean-Ups events. The District provides \$1,000 annually to communities that host clean-ups, and tires are a major item targeted during the cleanups.

Tires collected at community Clean-Up events include 3,782 in 2018 and 1,859 in 2019.

The SWMD seeks grants for hosting tire collection events.

Target for Next 5 Years: Continue program through planning period. Scrap tires will be accepted at CHaRM. Managing these materials comes at a cost. However, perception of residents may be that the service is “free”. The SWMD’s goal is to provide this service at no charge to the residents for as long as possible. Yet at some point, to continue to provide service the SWMD may need to balance the rate setting, i.e. charge user fees.

Electronic Equipment

Name	Start Date	End Date	Goal
CHaRM (<i>notice name change from Electronic Collection</i>)	Ongoing	Ongoing	6

Computers contain precious metals and valuable components that can be reused or recycled. Materials commonly found in these devices such as cadmium, mercury, chromium, and barium can pollute water and air if they are not properly disposed or recycled. The District operated an e-waste recycling and document shredding collection event in each county annually. Figure I-3 shows the pounds collected and the number of vehicles participating at each event.

The District receives call regarding TV recycling/proper disposal, yet the only solution locally is Best Buy, which charges per TV for proper disposal. The District holds E waste collection events annually each Spring for "office type" electronics (computers, monitors, printers, fax machine, copiers). Additionally, the District collects these items at the semi-annual HHW event.



In 2020, the SWMD hosted a RecycleFest collection event accepting TV’s for a nominal user fee.

Target for Next 5 Years: Continue program through planning period. E-waste will be available at CHaRM. Managing these materials comes at a cost. However, perception of residents may be that the service is “free”. The SWMD’s goal is to provide this service at no charge to the residents for as long as possible. Yet at some point, to continue to provide service the SWMD may need to balance the rate setting, i.e. charge user fees.

Lead-Acid Batteries

Name	Start Date	End Date	Goal
CHaRM (<i>notice name change from Accepted at HHW events</i>)	Ongoing	Ongoing	6

The District accepts lead-acid batteries (LABs) from residents at its annual HHW collection event. Accept batteries at HHW collection events. Scrap yards and private businesses/retailers also accept batteries.

During the five-year period from 2015 to 2019, an average of 15.3 tons of lead-acid batteries were collected annually, with a five year high in 2018 with 19.7 tons.

Target for Next 5 Years: Continue program through planning period. Lead-Acid batteries will be available at CHaRM. Also, provide information on SWMD website for proper handling of such materials, and assists residents/businesses in finding outlets for specific items.

Pharmaceuticals

Name	Start Date	End Date	Goal
<i>Drug take-back Collection</i>	Ongoing	Ongoing	6

Getting excess or unwanted medications out of circulation is an important public health and safety issue. Additionally, providing the public with a safe, legal method of disposing drugs provides an alternative to flushing prescription medications down the toilet or throwing them away in the trash, which results in contamination of the water supply.

The SWMD hosts an annual drug take-back event in each county to collect unwanted medication from residents, including prescription or non-prescription liquid medication and pills and sharps/syringes. These events are usually held in the Spring and in partnership with the local Sheriff's Department. Prescription medication is also collected at our bi-annual HHW event which was held in 2018.

In 2019, a total of 0.08 tons was collected.

Target for Next 5 Years: Continue through the planning period. Pharmaceuticals collected at CHaRM will be limited access days.

Other Material Specific Programs

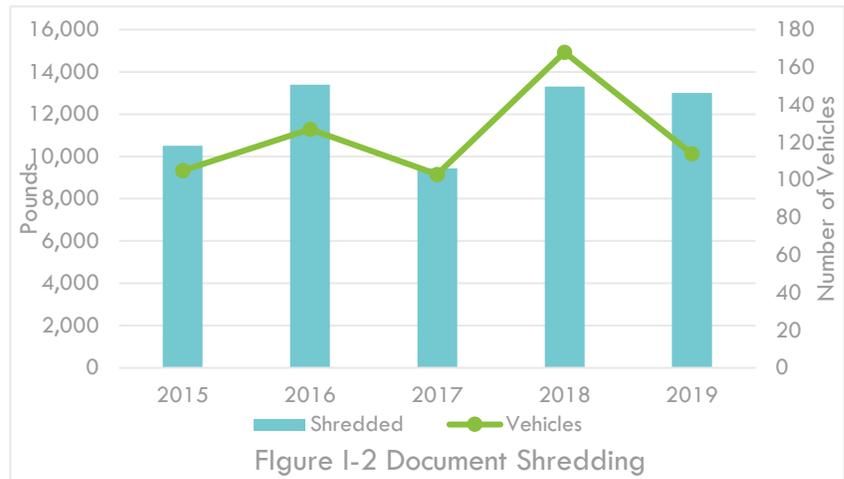
Name	Start Date	End Date	Goal
CHaRM (<i>notice name change from Document Shredding</i>)	Ongoing	Ongoing	1 and 2

The SWMD provides document shredding services to residents during the combined E-waste recycling and document shredding events. A target of hosting one event in each county is established. The event is provided at no fees and no material limits to the resident. Annual event has been held each Spring.

Figure I-2, depicts the material collected and number of vehicles serviced. To encourage participation the events are held in concert with Electronic Collection events.

In 2019, 6.5 tons were collected.

Target for Next 5 Years: Continue through the planning period. Document shredding will be available at CHaRM.



Funding/Grants

Other Funding/Grants

Name	Start Date	End Date	Goal
<i>Tire Amnesty Grant</i>	Ongoing	Ongoing	1 and 2

The tire grants are much needed in the district, although tire cleanups are making a small dent, there seems to be no end in sight for improperly disposed tires (1859 tons collected, 6 cleanup events).

Open Dumping/Litter Enforcement

Name	Start Date	End Date	Goal
<i>Environmental Enforcement Officer</i>	Ongoing	Ongoing	n/a

The District provides funding for a full-time Environmental Officer to investigate and prosecute environmental crimes such as open dumping and littering. The Environmental Officer is commissioned by the Sheriff in both Lawrence and Scioto counties, which gives the officer full jurisdiction in both counties. As an employee of the District, the Environmental Officer drives a vehicle that belongs to the District, which is labeled "Solid Waste District Enforcement Officer." The vehicle is equipped with lights and a siren. Lawrence County donated the radio that allows the officer to be in contact with the sheriff departments. The enforcement officer also has handheld radios that allow contact with the District office. If the District receives an environmental complaint, the officer can be notified immediately.

Other equipment includes three motion detectors with wireless cameras that allow the officer to download pictures to a laptop, a tape recorder, a handheld evidence camera, binoculars, and a firearm. The enforcement officer usually handles two to three calls a day for enforcement issues. All cases are called in by the public; the officer does not patrol looking for infractions.

The Enforcement Officer is funded solely by the SWMD.

Unfortunately, data tracking number of complaints reported, investigated and prosecuted was not located with staffing changes.

Target for Next 5 Years: Set tracking such as the number of citations issued, number of enforcement cases and investigations, and number of cases related to dumping at drop-offs as well. Develop goals for the program. Continue through the planning period.

Name	Start Date	End Date	Goal
<i>Partnership with Law Enforcement</i>	Ongoing	Ongoing	n/a

Following an investigation, the Environmental Enforcement Officer may issue a citation. Citations will result in the case going through the Prosecutor's office. Cases are tried in a combination of municipal and common pleas courts. Littering and clean air violations are tried in the municipal court, while open dumping is a felony and is tried in common pleas court.

The most common offences are open dumping, such as litter and trash in residential backyards and trash burning. Residents are not mandated to have a trash hauler within the two-county area, which may contribute to the frequency that these issues arise. In most cases, violators are fined and placed into a community service program.

A typical sentence for a dumping violation is \$250-\$500 in fines, (including \$200 in court fees and \$106.32 for restitution, which is paid directly to the SWMD), 12 days in jail or 30-60 days of community service, and 1 year of probation. Community service is often served with the District's Litter Control Crew. In addition, the offender is required to clean-up the infraction to the satisfaction of the Environmental Officer who reports back to the presiding judge reach out the sheriff's office in each county to identify whether permanent collection sites can be installed.

Unfortunately, data tracking number of citations issued and prosecuted was not located with staffing changes.

Target for Next 5 Years: Continue through the planning period.

Open Dump/Tire dump cleanup

Name	Start Date	End Date	Goal
<i>Community Clean-up</i>	Ongoing	Ongoing	n/a

The District provides funding and assists with a variety of community clean-up initiatives. The District annually provides \$1,000 to townships, cities, and villages that host community clean-up events.

- Lawrence Countywide Cleanup Day – part of the Great American Cleanup, a program of Keep America Beautiful. The SWMD, as well as other sponsors, provide financial support for the program.
- Portsmouth Citywide Cleanup – part of the Great American Cleanup, a program of Keep America Beautiful. The SWMD, as well as other sponsors, provide financial support for the program.
- Ohio River Sweep – annual cleanup event for the Ohio River and its tributaries. The targeted clean-up areas encompass more than 3,000 miles of shoreline from Pittsburgh, PA to Cairo, IL. Over the past 25 years, improvements made in water quality have resulted in increased recreational use of the Ohio River and its tributaries, which has resulted in more litter on the river banks. Because of this progression, a yearly

clean-up program is necessary. In addition to keeping the riverbanks clean, it is hoped that an increase in public exposure to the river will foster greater environmental concerns for its future. The Lawrence-Scioto Recycling and Litter Prevention program sponsors five cleanup locations in Lawrence County and four cleanup locations in Scioto County once a year from 9AM to 12PM.

(Unfortunately, data tracking recording volunteers, diversion and disposal was not found with staffing changes.)

In 2019, City of Ironton, Village of Proctorville, Village of Chesapeake, Village of Hanging Rock, Village of New Boston, City of Portsmouth & 13 townships participated.

Name	Start Date	End Date	Goal
<i>Litter Control Crew</i>	Ongoing	Ongoing	n/a

The SWMD has two crews, one per each county, that operates daily (Monday-Friday). Two program supervisors, which are employed by the District, manage litter collection activities that are performed by the community service workers from the court system. When possible, the District partners with the Lawrence County Jail and Courts, the Portsmouth City Jail and Courts (Scioto County), STAR, etc. to assist with the litter collection crews. The District will continue to seek partners to help staff the crew workers. Each crew consists of 4-6 workers, plus one supervisor.

Lawrence County's litter pickups are held on township and county roads and state routes. The crew also performs public community cleanups in parks and three dumpsites per year. Scioto County's cleanups are held on township and county roads and municipal streets.

(Unfortunately, data tracking recording volunteers, diversion and disposal was not found with staffing changes.)

Target for Next 5 Years: Continue through the planning period. Beginning in 2023, the SWMD is planning on capital equipment purchases to assist with this program and other special collections. An inventory of items needed include: truck with dump box, trailer, and backhoe.

Name	Start Date	End Date	Goal
<i>Recycling Litter Trailer</i>	Ongoing	Ongoing	n/a

The District maintains a recycling and litter trailer that is stocked with a variety of tools, equipment, and supplies needed to complete a clean-up or beautification project, including the following:

- Safety vests, safety glasses, orange safety flags, first aid kits, rubber wheel chocks, and traffic safety cones;
- Hand sanitizer, paper towels, latex gloves, and jersey gloves;
- Lawn mowers, trimmers, leaf blowers, wheel barrows, trimmer line, and steel hand trucks;
- Pruners, shears, shovels, diggers, rakes, brooms, and dustpans;
- Clear Stream recycling stands, waste and recycling containers, and clear 33 gallon bags;
- Folding table, folding chairs, and rolling cooler; and
- Quarts of fuel for equipment and gas cans.

The trailer is available for District residents and volunteers groups to borrow for clean-up events. There is no cost for volunteer groups who wish to borrow the trailer. Volunteer groups interested in using the trailer are asked to reserve it prior to planning a clean-up event. The District can deliver and pick up the trailer from the requested site.

On-going and used by groups as requested. The SWMD staff supervises during cleanups and takes inventory of loaned tools as used & returned Lawrence County & Scioto County schools/churches/ civic organizations mowers, weed eaters, litter grabbers, bags, gloves, etc (no report required, implement reporting as a goal for future years).

Unfortunately, data tracking number of citations issued and prosecuted was not located with staffing changes. In early 2020, the SWMD performed an equipment inventory and invested in replacing worn/old equipment with equipment that works.

Target for Next 5 Years: Continue through the planning period. Track the usage of the trailer.

Name	Start Date	End Date	Goal
<i>Sponsor-A-Site</i>	Ongoing	Ongoing	n/a

The Sponsor-A-Site program is a clean-up program available to any business, church, civic group or scout group within Lawrence or Scioto counties. Organizations may sponsor a site by committing to clean up the area once per month or as needed. The District provides garbage bags and gloves for the clean-up, as well as the signs that identify each site and the volunteer group committed to keeping it clean. The Litter Control Crew picks up bags of litter collected by volunteer groups. The on-going, continued growth & active participation.

Target for Next 5 Years: Continue through planning period.

Name	Start Date	End Date	Goal
<i>Scrap Tire Abatement</i>	Ongoing	Ongoing	n/a

During the 1993 creation of Ohio's scrap tire laws, the Ohio General Assembly included a provision in the statute that allows state-funded cleanups without subsequent cost recovery of small tire piles (100 to 2,000 tires) provided that six specific conditions are applicable (ORC 3734.85(E)). As of September 5, 2012, the maximum quantity of eligible tires under this statute increased from 2,000 to 5,000 tires per site.

The District utilizes Ohio EPA's Consensual Scrap Tire Removal Agreement, which is funded through the State's scrap tire fund, to manage illegally dumped tires throughout Lawrence and Scioto counties. Through this program, state contractors investigate and remediate scrap tire disposal sites identified by the District. The state funds work completed by the contractors. This program also provides funding to remove and dispose/recycle scrap tires that have been collected by volunteer groups and/or road crews from public roadways and alley rights-of-way into temporary collection piles.

Target for Next 5 Years: Continue through the planning period.

Other Programs

Name	Start Date	End Date	Goal
<i>Program Improvements/Revisions</i>	2023	Ongoing	n/a

This program allows the SWMD to respond to unforeseen opportunities or other initiatives to increase diversion and decrease landfilling of materials. The intent is to propel programs towards the next level of recycling. A variety of state, national, and/or industry grant resources are available for the SWMD to directly seek or indirectly support.

District staff attends Ohio EPA quarterly meetings, Organization of Solid Waste Districts of Ohio, and various other industry meetings and conferences as well as subscribes to email listservs to stay connected to opportunities. Opportunities may exist with the Keep Southeast Ohio Beautiful affiliate and other organizations.

Opportunities are open and may include (but not limited to) options such as procuring containers, developing and procuring education materials, organics diversion, food waste reduction, recycling or waste reduction technologies. Cardboard, single stream, or food waste are examples of materials that may be targeted with this activity. The District may also implement programs by partnering with generators. District staff will seek and manage any initiatives. This initiative will continue through the planning period.

Public-private partnerships can work together to provide infrastructure related utilities such as solid waste successful arrangements. Through these arrangements the private sector takes some of the risk that traditionally the public had and can undertake the project on a much more cost-efficient basis. As the SWMD looks towards the future, keeping options open for public-private partnerships may provide opportunities for diversion of these materials. The SWMD will research any public-private partnerships, and where it makes sense, develop infrastructure to support or expand diversion (reuse, reduce, recycle, and compost).

APPENDIX J REFERENCE YEAR OPPORTUNITY TO RECYCLE AND DEMONSTRATION OF ACHIEVING GOAL 1

A. Residential Sector Opportunity to Recycle

The 2020 State Solid Waste Management Plan requires SWMD's to demonstrate adequate infrastructure to provide at least 80% of the residential population in a County with convenient opportunities to recycle. The SWMD must demonstrate one of the following:

- a. Demonstrate that there was adequate infrastructure in the reference year to provide at least 80% of the residential population within each county of the SWMD the opportunity to recycle.
- b. Demonstrate that the SWMD will implement new and/or upgraded recycling infrastructure sufficient to provide at least 80% of the residential population within each county of the SWMD the opportunity to recycle.
- c. Apply for a waiver from Ohio EPA to provide less than 80% of the residential population with opportunities to recycle.

The SWMD must ensure that there will be adequate infrastructure throughout the entire planning period covered by the solid waste management plan to give at least 80% of the residential population in each county of the SWMD the opportunity to recycle.

Additionally, the SWMD must:

- 1) Demonstrate that the SWMD will meet the applicable standards established in the Format for the remainder of the planning period.
- 2) Calculate the solid waste reduction and recycling rate for the residential/commercial sector. If less than 25% in the reference year then demonstrate achieving annual increases in the solid waste reduction and recycling rate for the residential/commercial sector.
- 3) Demonstrate that commercial and institutional generators of solid waste have adequate opportunities to recycle solid waste.
- 4) Demonstrate that the SWMD will encourage participation in available recycling infrastructure.
- 5) Demonstrate that the SWMD will maintain the required infrastructure throughout the entire planning period.

Technical elements of the demonstration include:

- 1) Components of the residential infrastructure must collect at least 5 materials from a specified list in the Format.
- 2) The SWMD must demonstrate that the commercial sector has adequate opportunities to collect at least 5 materials from a specified list in the Format.
- 3) The Format will specify the "credits" for various types of infrastructure. The amount of the credit assigned is dependent upon the type of recycling service being provided.
 - Non-Subscription Curbside: Credit the entire population of each community.
 - Subscription Curbside: Credit 25% of the community population.
 - Full-Time Urban Drop-off: Credit 5,000.

- Full-Time Rural Drop-off: Credit 2,500.
 - Part-Time Urban Drop-off: Credit 2,500.
 - Part-Time Rural Drop-off: Credit 2,500.
- 4) The following minimum standards apply to drop-offs:
- Residents can easily find and access the site.
 - All drop-off sites must provide a minimum of 6-cubic yards of capacity.
 - There are signs that are adequate to, at a minimum:
 - i. Direct the public to the site or indicates the location of the site;
 - ii. Lists the materials that are accepted; and
 - iii. Provide days and hours of operation
 - The SWMD has made a reasonable attempt to meet the demand of the population for use of the drop-off site.
- 5) “Credit” for infrastructure in a community is limited to the population of an entire community, up to and including the entire credit for a drop-off that would be needed to achieve 100% of the residential population with access to recycling infrastructure.

Technical Elements	Drop-offs
Easily accessible	All sites easily accessible.
Container Size	All containers 8-cubic yards.
Signage	All sites have signage.
Reasonable attempt to meet population demand	Yes
Materials	Paper, plastic bottles and jugs, aluminum cans, steel cans, cartons

Table J-1 Opportunity to Recycle

ID #	Lawrence County	2019		2023		2037	
	Name of Community (City, Village, Township)	Community Population	Population Credit	Community Population	Population Credit	Community Population	Population Credit
Non-Subscription Curbside							
none			0		0		0
Subscription Curbside							
None			0		0		0
Full-time, urban drop-off							
FTU1	County Fairgrounds (Co Rd 411, Proctorville)	7,397	5000	7,330	5000	7,102	5000
FTU2	Food Fair (409 Solida Rd, South Point)	6,312	5000	6,255	5000	6,060	5000
FTU3	Chesapeake Municipal Court (Co Rd 1, Chesapeake)	7,397	5000	7,330	5000	7,102	5000
FTU4	Lawrence County Educational Service Center (304 North 2 nd Street, Ironton)	10,532	5000	10,437	5000	10,112	5000
FTU5	Kroger Plaza (6232 Co Rd 107, Proctorville)	7,397	0	7,330	0	7,102	0
FTU6	Ohio University Campus (1804 Liberty Ave., Ironton)	10,532	5000	10,437	5000	10,112	5000
FTU7	Paul Porter Park (221 Lane Street, Coal Grove)	5,287	5000	5,239	5000	5,076	5000
FTU8	Perry Township Volunteer Fire Department Sheridan (Co Rd 1, Sheridan)	5,287	5000	REMOVED	0	REMOVED	0
FTU9	Rome Trustees Building (9666 St Rt 7, Rome)	8,081	5000	8,008	5000	7,759	5000
FTU10	Food Fair (7604 St Rt 7, Proctorville)	7,397	0	7,330	0	7,102	0
FTU11	Burlington-Fayette Fire Department (Co Rd 1, Burlington)	6,312	5000	6,255	5000	6,060	5000
FTU12	Ironton City Center (301 South 3 rd St, Ironton)	10,532	5000	10,437	5000	10,112	5000
Part-time, urban drop-off							
None			0		0		0
Full-time, rural drop-off							
FTR1	Wayne National Forest (6518 St Rt 93, Pedro)	2,846	2500	2,820	2500	2,372	2500
Part-time, rural drop-off							
None			0		0		0
Mixed municipal waste material recovery facility							
None			0		0		0
Total County Population		59,463		58,927		57,091	
Total Population Credit		52,500		47,500		47,500	
Percent of Population		88%		81%		83%	

“Credit” for infrastructure in a community is limited to the population of an entire community, up to and including the entire credit for a drop-off that would be needed to achieve 100% of the residential population with access to

recycling infrastructure. Proctorville has 4 locations and because of population can only credit 2 locations towards the access demonstration.

ID #	Scioto County	2019		2023		2037	
	Name of Community (City, Village, Township)	Community Population	Population Credit				
Non-subscription curbside							
None			0		0		0
Subscription curbside							
None			0		0		0
Full-time, urban drop-off							
FTU13	Valley Methodist Church (4720 Old Scioto Trail, Portsmouth)	20,158	5000	19,771	5000	18,475	5000
FTU14	Village Hall of New Boston (3980 Rhodes Ave, New Boston)	2,099	5000	2,059	5000	1,924	5000
FTU15	Barbour Auto Parts (915 11 th St, Portsmouth)	20,158	5000	19,771	5000	18,475	5000
FTU16	Chevron (109 St Rt 522, Wheelersburg)	9,227	5000	9,050	5000	8,457	5000
FTU17	Earl Thomas Conley Park (15888 St Rt 52, West Portsmouth)	5,148	5000	5,049	5000	4,718	5000
FTU18	Kroger (9101 Ohio River Rd, Wheelersburg)	9,227	5000	9,050	5000	8,457	5000
FTU19	Lowe's (7915 Ohio River Rd, Wheelersburg)	9,227	5000	9,050	5000	8,457	5000
FTU20	Portsmouth Square (1600-1700 11 th St, Portsmouth)	20,158	5000	19,771	5000	18,475	5000
FTU21	SOMC Friends Center Lot (17 th & Oak St, Portsmouth)	20,158	5000	19,771	5000	18,475	5000
FTU22	Scioto County Courthouse (607 7 th St, Portsmouth)	20,158	5000	19,771	5000	18,475	0
FTU23	Portsmouth City Hall	20,158	0	19,771	0	18,475	0
Part-time, urban drop-off							
None			0		0		0
Full-time, rural drop-off							
FTR2	IGA (8348 St Rt 335, Minford)	4,242	2500	4,161	2500	3,888	2500
FTR3	Bloom Vernon High School (10529 Main Street, Minford)	4,242	2500	4,161	2500	3,888	2500

FTR4	Nile Trustees Building (12215 US 52 West Portsmouth)	5,148	2500	5,049	2500	4,718	2500
FTR5	Senior Center (144 Gervais Rd, Franklin Furnace)	3,881	2500	3,807	2500	3,557	2500
FTR6	Valley Township Fire Department (219 Beechwood Ave, Lucasville)	3,623	2500	3,553	2500	3,320	2500
FTR7	Super Quik (1051 Galena Pike, West Portsmouth)	5,148	0	5,049	0	4,718	0
FTR8	Westside IGA (2335 Galena Pike, West Portsmouth)	5,148	0	5,049	0	4,718	0
Part-time, rural drop-off							
None			0		0		0
Mixed municipal waste material recovery facility							
None			0		0		0
Total County Population			75,314		73,869		69,026
Total Population Credit			62,500		62,500		57,500
Percent of Population			83%		85%		83%

“Credit” for infrastructure in a community is limited to the population of an entire community, up to and including the entire credit for a drop-off that would be needed to achieve 100% of the residential population with access to recycling infrastructure. Portsmouth has 6 locations and because of population can only credit 5 locations towards the access demonstration. West Portsmouth has 4 locations and because of population can only credit 2 locations towards the access demonstration.

The SWMD demonstrates at least 80% of the residential population in each county of the SWMD the opportunity to recycle.

B. Commercial Sector Opportunity to Recycle

Table J-2 Demonstration of Commercial Opportunity to Recycle

Service Provider	Type of Recycling Service Provided	Cardboard	Newspaper	Mixed Paper	Steel Containers	Aluminum Containers
Rumpke Waste, Inc.	Hauler Collection	x	x	x	x	x
Republic	Hauler Collection	x	x	x	x	x

The SWMD obtains credit for commercial infrastructure to meet Goal 1 from recycling service providers/haulers that offer collection services to commercial/institutional generators throughout the county and buybacks operations/scrap yards located within the county. The following five minimum materials are collected: corrugated cardboard, newspaper, mixed paper, steel containers, and aluminum containers.

C. Demonstration of Meeting Other Requirements for Achieving Goal 1

1. Residential/Commercial Waste Reduction and Recycling Rate

As a requirement to achieving Goal 1 the SWMD must demonstrate that the SWMD did achieve a 25% residential/commercial waste reduction and recycling rate or will achieve annual increases in the reduction and recycling rate during the planning period. Appendix K calculates the residential/commercial solid waste reduction and recycling rate for the reference year and the planning period. The reference year rate is 18.31%, with the state goal established at 25%, thus the SWMD is striving to raise this rate over the planning period.

If the SWMD could capture more data from the commercial sector the recycling rate would most likely calculate higher than demonstrated. Commercial data was obtained from reporting commercial surveys and Ohio EPA data efforts. During this planning period a targeted survey effort will be made to capture more commercial sector information.

2. Encouraging Participation

The SWMD will encourage residents and commercial generators to participate in available recycling infrastructure. Appendices I and L provide explanation of outreach/education programs anticipated for this planning period.

APPENDIX K WASTE REDUCTION AND RECYCLING RATES AND DEMONSTRATION OF ACHIEVING GOAL 2

Goal 2 of the 2020 Ohio’s State Solid Waste Management Plan states: “The SWMD shall reduce and recycle at least 25% of the solid waste generated by the residential/commercial sector.”

Table K-1 Residential/Commercial Annual Rate of Waste Reduction

Year	Population	Recycled (Tons)	Disposed (Tons)	Total Generated	Waste Reduction & Recycling Rate (%)	Per Capita Waste Reduction & Recycling Rate (ppd)
2019	134,777	22,913	102,220	125,133	18.31%	0.93
2020	134,279	23,934	101,842	125,777	19.03%	0.98
2021	133,783	23,838	101,466	125,304	19.02%	0.98
2022	133,288	23,810	101,091	124,901	19.06%	0.98
2023	132,796	23,783	100,718	124,501	19.10%	0.98
2024	132,306	23,759	100,346	124,105	19.14%	0.98
2025	131,818	23,736	99,976	123,712	19.19%	0.99
2026	131,332	23,715	99,608	123,322	19.23%	0.99
2027	130,848	23,696	99,240	122,936	19.27%	0.99
2028	130,366	23,678	98,875	122,553	19.32%	1.00
2029	129,886	23,678	98,511	122,189	19.38%	1.00
2030	129,408	23,678	98,148	121,827	19.44%	1.00
2031	128,932	23,678	97,787	121,465	19.49%	1.01
2032	128,458	23,678	97,428	121,106	19.55%	1.01
2033	127,986	23,678	97,069	120,748	19.61%	1.01
2034	127,516	23,678	96,713	120,391	19.67%	1.02
2035	127,047	23,678	96,358	120,036	19.73%	1.02
2036	126,581	23,678	96,004	119,682	19.78%	1.02
2037	126,116	23,678	95,652	119,330	19.84%	1.03

Source(s):

Population – Appendix C, Table C-1

Recycled – Appendix E, Table E-4 and E-5

Disposed – Appendix D, Table D-3

Sample Calculation:

Total Generated = Recycled + Disposed

Waste Reduction & Recycling Rate = Recycled / Total Generated

Per Capita Waste Reduction & Recycling Rate = (Recycled x 2000 lbs/ton) / (Population x 365 days)

The District achieved a 18% residential/commercial waste reduction and recycling rate in the reference year below the 25% state goal. As shown in Table K-1, the District will not meet the state recycling goal during the planning period.

In the SWMD's 2017 plan, the waste reduction/recycling rate was 24% in the reference year (2013) and the District projected to reach the 25% by the end of 2031. The 2017 plan projected the District recycling between 23,000 to 24,000 tons of residential/commercial waste being reduced or recycled, which aligns with current projections. However, the disposal data for the sector is the reason for the change in the recycling rate projections. In 2013, roughly 88,000 tons were disposed of. In 2019, (this plans' reference year) nearly approximately 14,000 more tons were disposed of. This increase in tons disposed explains the drop in the recycling rate.

Table K-2 Industrial Annual Rate of Waste Reduction

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Non-Recyclable Waste (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2019	58,367	36,513		94,880	61.52%
2020	58,300	36,693		94,993	61.37%
2021	58,300	36,876		95,176	61.25%
2022	58,300	37,060		95,360	61.14%
2023	58,300	37,246		95,546	61.02%
2024	58,300	37,432		95,732	60.90%
2025	58,300	37,619		95,919	60.78%
2026	58,300	37,807		96,107	60.66%
2027	58,300	37,996		96,296	60.54%
2028	58,300	38,186		96,486	60.42%
2029	58,300	38,377		96,677	60.30%
2030	58,300	38,569		96,869	60.18%
2031	58,300	38,762		97,062	60.06%
2032	58,300	38,956		97,256	59.95%
2033	58,300	39,151		97,451	59.83%
2034	58,300	39,346		97,646	59.71%
2035	58,300	39,543		97,843	59.59%
2036	58,300	39,741		98,041	59.47%
2037	58,300	39,939		98,239	59.34%

Source(s):

Recycled – Appendix F, Table F-4 and F-5

Disposed – Appendix D, Table D-3

Sample Calculation:

Total Generated = Recycled + Disposed

Waste Reduction & Recycling Rate = Recycled / Total Generated

Adoption of the 2020 State Plan removed the 66% industrial reduction and recycling rate goal. As shown in Table K-2, the District almost reached that goals with 62% of industrial waste being reduced or recycled in the reference year. The 2017 Plan projected about a 33% recycling rate for the industrial sector through 2031.

In comparison to the 2017 Plan, the industrial sector is projected to recycled/reduced 48,000 tons more every year than what was projected in the 2017 plan. The 2017 plan projected 8,000 to 10,000 tons recycled per

year. The industrial sector recycled between 9,000 to 12,000 tons during 2010, 2012 and 2013. In 2011 and 2014 the District saw around 57,000 tons recycled by the industrial sector. In more recent years, the current reference year and the four prior years, the recycled tons has stayed high, mostly above 50,000 tons, explaining why the projections are significantly different that those of the 2017 Plan.

In terms of disposal, the District has seen an increase in industrial tons disposed in 2019 and the four year prior. The 2017 Plan projected slightly less than 30,000 ton being disposed of by the end of the planning period whereas this plan projects slightly less than 40,000 tons by the end of 2037.

Table K-3 Annual Rate of Waste Reduction: Total Solid Waste

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2019	81,280	138,733	220,013	36.94%
2020	82,234	138,535	220,769	37.25%
2021	82,138	138,342	220,480	37.25%
2022	82,110	138,152	220,261	37.28%
2023	82,083	137,964	220,047	37.30%
2024	82,059	137,778	219,837	37.33%
2025	82,036	137,595	219,631	37.35%
2026	82,015	137,415	219,430	37.38%
2027	81,996	137,237	219,232	37.40%
2028	81,978	137,061	219,039	37.43%
2029	81,978	136,888	218,866	37.46%
2030	81,978	136,717	218,696	37.49%
2031	81,978	136,549	218,527	37.51%
2032	81,978	136,383	218,362	37.54%
2033	81,978	136,220	218,198	37.57%
2034	81,978	136,059	218,037	37.60%
2035	81,978	135,901	217,879	37.63%
2036	81,978	135,745	217,723	37.65%
2037	81,978	135,591	217,570	37.68%

Source:

Recycled – Appendix F, Table F-4 and F-5 and Appendix E, Table E-4 and E-5

Disposed – Appendix D, Table D-3

Sample Calculation:

Total Generated = Recycled + Disposed

Waste Reduction & Recycling Rate = Recycled / Total Generated

Notes: Excludes exempt waste

Overall, in comparing the 2017 Plan projections to the actual data, more material was generated than was predicted. The previous plan projected the total recycling rate of the District to reach about 25% during the planning period, whereas this plan predicts the District will reach about 38%. The following table highlights the differences between this plan’s projections and the previous 2017 Plan.

Table K- Plan Projection Comparison

Sector	Material	Projections Compared to 2017 Plan	Sector Outcome
Residential/ Commercial	Recycling Tons	≈ Projected tons roughly equal	↓ Decrease in projected recycling rate
	Disposed Tons	↑ Medium increase in projected tons	
Industrial	Recycling Tons	↑ Larger increase in projected tons	↑ Increase in projected recycling rate
	Disposed Tons	↑ Smaller increase in projected tons	

APPENDIX L MINIMUM REQUIRED EDUCATION PROGRAMS: OUTREACH AND MARKETING PLAN AND GENERAL EDUCATION REQUIREMENTS

A. Minimum Required Education Program

GOAL 3: MINIMUM REQUIREMENTS

District Website

The SWMD maintains a website at www.lsswmd.org. The website is managed by the Lawrence Scioto Solid Waste District. The SWMD has direct access to post or change information on the webpage. This also provides more capability for tracking web stats and flexibility for posting/adding information. The website needs to be used more a resource to provide information that residents, local governments, businesses and educational institutions would seek.

Target for Next 5 Years: Re-branding the District The homepage is key to user navigation and will be updated regularly to reflect recycling services, seasonal program info, and simple opportunities. The webpage will be updated to provide an inventory of the infrastructure, drop-off collection locations, information about special collection events, and available education and outreach opportunities. A business menu option will be added to provide access to recycling survey forms, waste audits information, grants, links to Ohio EPA's Material Exchange, etc.

The webpage address will be added on all collateral and business cards, as well as promoted on Facebook.

Comprehensive Resource Guide

The SWMD's webpage lists District drop-offs. The SWMD updates this annually to ensure the information remains accurate.

Inventory

Infrastructure inventory can be found in the Plan, which is updated every five years, and specific infrastructure is identified on the website. The website data regarding solid waste management infrastructure is updated at least annually, or more frequently if changes occur.

Speaker

Both the SWMD Director and Assistant Director are available for speaking engagements.

B. Outreach and Education – Outreach Plan and General Education Requirements

As prescribed by the 2020 State Plan, each SWMD will provide education, outreach, marketing, and technical assistance regarding education and reuse through an outreach and marketing plan. Per *Format 4.0*, the Outreach and Marketing Plan needs to have the following components:

1. Five target audiences as identified in Ohio EPA Format 4.0
2. Follow basic best practices when developing and selecting outreach programs
3. Outreach priority
4. Education and outreach programs to all appropriate audiences in the context of the priority using social marketing principles and tools

The Outreach and Marketing Plan needs to demonstrate these best practices:

- Demonstrate that the SWMD will address all of the five target audiences.
- Explain how the SWMD will align its outreach and education programs with recycling opportunities (both existing and needed).
- Explain how the SWMD will incorporate principles and tools for changing behavior into the outreach and marketing plan.

Outreach and education are critical to a recycling program's success. Strategic communications campaigns provide the most powerful results in creating behavior change. Appendix H evaluated the programs the In the table a description detailing the evaluation of the program. These programs were restructured as presented in the Table below to develop an education and outreach plan to better serve the SWMD's direction in this 2023 Plan Update.

The SWMD needs to implement best practices education campaigns that are simple and engaging with regular consistent messaging across multimedia platforms. Investments should be made in expanding communication programs to target groups and ensure diversion efforts succeed.

To align with *Format 4.0*, the SWMD's existing programs were organized by target audience. (Note: some of these are new, some have been consolidated for streamline and preventing cross-over reporting, and some are existing.)

Education/Outreach Program	Target Audience				
	Residents	Schools	Industries	Institutions and Commercial Businesses	Communities and Elected Officials
Website	X	X	X	X	X
Advertisements and Promotional Item Distribution	X	X	X	X	X
Caught Green Handed Contest	X				
Countywide Curbside Recycling Promotion	X				X
School Classroom Presentations		X			
Illegal Dumping Campaign	X				X

Name	Start Date	End Date	Goal
Advertisements and Promotional Item Distribution	2023	Ongoing	4

The SWMD will use various media to reinforce messaging. All advertisements and marketing collateral will be developed and branded with SWMD logo, colors and fonts to create and reinforce brand identity.

Advertisements will be used to alert residents about various recycling opportunities including drop-off sites, special collection events, litter cleanup activities, and education programs. Where appropriate at outreach activities, District staff will distribute promotional materials such as recycled-content pens, pencils, magnets, and notepads to further reinforce the recycling, litter prevention, and/or waste reduction message(s) being presented.

The SWMD will track the number of promotional items handed out and advertisements each year.

Name	Start Date	End Date	Goal
Social Media Outreach	2023	Ongoing	4

The SWMD uses Facebook as social media outlet to regularly post information about SWMD events. The SWMD will use postings to drive traffic to the webpage. The type of posts to Facebook will also direct residents to social norms of recycling, composting, and reducing waste.

The SWMD will develop a social media calendar with blast topics. Type of topics to include:

- How and where to recycle
- Proper recycling techniques
- Crazy popular – “what not to do Tuesday”
- Weather related closures

In 2023, the SWMD will schedule a Facebook contest for Earth Day, with daily questions and prizes, plus one large random raffle at end of week.

The SWMD will aim to increase the number of Facebook followers by 10% by year 2025.

Name	Start Date	End Date	Goal
Caught Green Handed Contest	2023	Ongoing	4

Caught Green Handed is an outreach strategy promoting recycling at the drop-off recycling locations. This was slated to be implemented in the 2017 Plan but never took off. A barrier to using drop-off recycling is the lack of convenient collection, that is, recyclables are not collected at the curb rather the user must drive recyclables to the drop-off. The benefit is the potential to receive a reward if the user uses a drop-off location.

“Caught Green Handed” promotes the act of recycling with recognition and awards. This is social modeling and one of the elements that works well with community-based social marketing. For a period of four weeks, the SWMD will visit the recycling drop-off locations to “catch” someone recycling. Those “caught” will be photographed and given recycled content prizes. Winners will be featured on Facebook and in the *News Journal*.

This program emphasizes and awards behavior for recycling, and the publicity provided demonstrates peer influence and social approval. Community-based social marketing strategies use strategies such as commitment, incentives, prompts, social modeling, and social norms to promote change. Each of the tools is matched to the behavior and context and some tools work better in some situations than others. For this strategy, both incentives and social modeling are used to promote the change.

The SWMD will track the number of contest winners each year.

Name	Start Date	End Date	Goal
Countywide Curbside Recycling Promotion	2025 (maybe 2024)	Ongoing	4

This outreach targets local governmental/community officials to develop recycling infrastructure.

The SWMD will actively engage with community officials to promote curbside recycling throughout both Counties. The approach includes phone conversations, in person meetings, resident research and engagement, and technical assistance. This outreach program targets community and elected officials to equip them with data to make informed decisions regarding curbside recycling for their community. The SWMD will engage with 1 community a year and provide research for their community residents to gauge resident interest in curbside recycling. The SWMD will also help to advance the curbside infrastructure by evaluating options and helping with contracts.

Community elected officials will first be approached to explore curbside recycling and discuss any challenges with a curbside program. To measure residents' level of interest, the SWMD will conduct a residential survey in the communities. When District conducts the survey, they will provide information about current recycling opportunities along with promotional items in the survey packets. Results from each community's survey will be compiled and presented to the mayor of each village, along with suggestions for implementing curbside recycling programs in their respective areas. The District will also offer to assist villages with applying for grants to implement such programs.

The SWMD will track the number of meetings with political jurisdictions are held each year.

Name	Start Date	End Date	Goal
School Classroom Presentations	Ongoing	Ongoing	4

The SWMD is available for presentations to school-age students on recycling, litter prevention, and other solid waste related issues.

The District provides educational presentations to various groups ranging from preschool, elementary, middle, high schools, colleges/universities, scout groups, 4-H, civic groups, environmental/nature clubs, and businesses. Classroom presentations typically last 45 minutes and cover important topics such as recycling and litter prevention.

The District also participated in the Lawrence County Science Fair and the Scioto County Science Fair, judging entries of environmental interest.

The SWMD will track the number of presentations given each year, number of students in attendance, and topics of presentation.

Name	Start Date	End Date	Goal
Illegal Dumping Campaign	2023	Ongoing	4

The SWMD suspects a combination of issues as to why littering and illegal dumping occurs in the SWMD: inadequate waste management services, generators not knowing what to do with waste, or those not wanting to pay for proper management. Monitoring, enforcement, and cleanup efforts are all tactics used by the SWMD. To understand the reasons behind littering and open dumping in the community the SWMD will gather research

directly from the people living in the communities, political stakeholders, and experts. After gathering the research to be more effective the SWMD will employ community based social marketing principles for behavior change.

Gathering research is a way to get neighbors and the community involved. The research should be performed by conducting a community survey, holding focus groups, and hearing from experts. Goals are to understand what motivates people to illegally dump and enable strategies to address the motivations.

Also, the SWMD will research if bulky item curbside collection is available and what cost households pay for bulky item disposal. Explore whether the SWMD can provide vouchers for citizens to disposal of bulky items. Engage with private haulers/scrap haulers to provide on-demand pick up for lesser fee or free (for example, a scrap company in Butler County SWMD offers appliance pick up for free). Engage with private haulers to explore adjusting rates to include bulky pickup as part of the base service costs.

OUTREACH PRIORITY –

Name	Start Date	End Date	Goal
Outreach Priority – Recycle740	2023	Ongoing	4

As part of an effort to position the SWMD as a trusted partner and community resource, the SWMD will refresh the brand. Re-freshening the brand and updating the website will be the first steps the SWMD begins. Steps include a new logo, adopting a new color palette, fonts, appearances, and possibly adding a tag line. As an organization's major graphical representation, a logo anchors a company's brand and becomes the single most visible manifestation of the company. For this reason, a well-designed logo is an essential part of any company's overall marketing strategy.

Multi-layered and multi-faceted means various marketing materials, approaches, and collateral are used. If the SWMD re-brands, then all materials should be updated, and additional collateral developed. **Flyers, ads, postcards**, etc. should be re-branded and have a consistent recognizable look that ties the resident back to the SWMD. Flyer best practices include:

- Limited text with a visible call for action, typically to visit the website for more information.
- Colors consistent with the branding of the SWMD.
- Images that tell the story and compliment the call for action.
- Layout should be easy for the eyes to flow between images and content without overwhelming the user with additional repetitive text.

Flyers designed as a hand-out should include content information that is more static and doesn't change frequently. Including a QR code on a flyer can lead the intended party to a website with the updated information.

The **website** needs to be updated to reflect any branding refresh. The website is an incredible resource of information and needs to have the most up-to-date information on programs, services, and how to properly manage solid waste.

- Education/Outreach – Setting several goals 1) change behavior and cultural of citizens to move beyond “take, make, waste” system 2) increase materials recovered per capita 3) decrease contamination at drop-offs 4) enhance take-back retailers, reuse centers, food donation and food bank infrastructure

- Develop an outreach plan to achieve each of the 4 goals identified above.
- Develop a resource guide to donating.
- Add available outlets for diverting materials on the SWMD website.
- Enhance SWMD social media outreach.

APPENDIX M CAPACITY ANALYSIS

This appendix provides the SWMD’s strategy for ensuring access to solid waste management facilities. While the primary focus of this strategy is ensuring access to adequate disposal capacity, the SWMD will also ensure that it has access to processing capacity for recyclables, and if needed, access to transfer facilities.

A. Access to Publicly Available Landfill Facilities

Table M-1 Remaining Operating Life of Publicly Available Landfills

Facility	Location		Years of Remaining Capacity
	County	State	
Rumpke Brown County Sanitary Landfill	Brown	OH	83
Pine Grove Regional Facility	Fairfield	OH	67
Gallia County Landfill	Gallia	OH	32
Beech Hollow Landfill	Jackson	OH	86
Stony Hollow Landfill, Inc.	Montgomery	OH	24
Suburban Landfill Inc	Perry	OH	66
Pike Sanitation Landfill	Pike	OH	31
American Landfill, Inc.	Stark	OH	70
Boyd County Sanitary Landfill	Boyd	KY	133
Green Valley Landfill	Boyd	KY	78

Source(s) of Information

2019 Ohio Solid Waste Facility Data Report Tables (Table 13) published by Ohio EPA

KY Landfill data from 2018 from Solid Waste Annual Report 11-8-2019 by Kentucky Energy and Environment Cabinet (most recent data)

Table M-1 lists the municipal solid waste landfills where waste from the SWMD was disposed in the reference year. The landfills listed include those that accepted direct-haul and those that accepted transferred waste.

Over the reference year and two previous years, the SWMD sent material for disposal to 8 in-state landfills and out-of-state landfills in Kentucky and Indiana. Table M-2 lists the landfill facilities and percentage of SWMD’s waste accepted in 2019. The landfills identified and percentages include direct hauled and transferred waste.

Table M-2 Tons and Percent Waste Sent to Disposal

Facility	Location		Tons	Percentage of Lawrence-Scioto 2019 Disposed Waste
	County	State		
Pine Grove Regional Facility	Fairfield	OH	3	Less than 0.01%
Gallia County Landfill	Gallia	OH	1	Less than 0.01%
Beech Hollow Landfill	Jackson	OH	2,156	1%
Suburban Landfill Inc	Perry	OH	403	Less than 0.5%
Pike Sanitation Landfill	Pike	OH	85,554	50%
American Landfill, Inc.	Stark	OH	4	Less than 0.01%
Misc. Facilities	Unk.	IN	4	Less than 0.01%
Boyd County Sanitary Landfill	Boyd	KY	28,460	17%
Green Valley Landfill	Boyd	KY	53,950	32%

Facility	Location		Tons	Percentage of Lawrence-Scioto 2019 Disposed Waste
	County	State		
Total			170,535	100%

Source:

2019 Ohio Facility Data Tables published by Ohio EPA

Sample Calculation: 2,156.05 tons to Beech Hollow Landfill / 88,121.55 total tons disposed by the SWMD in 2019 = 2.4% of the SWMD's waste disposed was disposed in Beech Hollow Landfill.

Transferred waste to each landfill was calculated using ratio of total waste hauled to waste reported to each landfill.

Percentage of waste disposed in landfills = landfill total tons / total landfilled waste x 100%

As seen in Table M-2, half of the SWMD's waste, was disposed of in Pike County, at the Pike Sanitation Landfill. Lawrence-Scioto's 2019 tonnage disposed at this landfill represents 27% of the Pike Sanitation Landfills' total tons accepted for disposal in 2019. This landfill has 31 years of landfill capacity, which is adequate capacity. There are no known issues with this landfill that could cause it to cease accepting waste.

The other two main facilities that the SWMD sends solid waste to are both in Boyd County, Kentucky. The Green Valley Landfill (which receives 32% of the SWMD's waste) and Boyd County Sanitary Landfill, (which 17% of the SWMD's waste) also both appear to have adequate capacity according to the most recent data from Kentucky Energy and Environment Cabinet. The facilities have collectively over 200 years of capacity left. Rumpke Waste & Recycling purchased the Boyd County Sanitary Landfill in 2019 with a long-term goal to balance solid waste disposal with increased recycling services. There does not appear to be any known issues with either of these landfills that could cause them to stop accepting waste.

Based on the capacity of the SWMD's top three used landfills (representing where 99% of the SWMD's solid waste is sent), there appears to be adequate disposal capacity with no known reasons to suspect potential capacity shortages in near and long term.

B. Capacity at Private Landfill Facilities

Captive or residual waste landfills are designated exclusively for the disposal of one or any combination of wastes from seven specific industrial categories. Due to regulations these facilities will not receive municipal solid waste. Residual/captive landfills are landfills used to dispose of waste generated exclusively by the manufacturing company that owns the landfill. The SWMD did not send waste to captive landfills in the reference year.

Table M-3 Remaining Operating Life of Privately Available Landfills

Facility	Location	Years of Remaining Capacity
None		

Source(s) of Information:

2019 Ohio Facility Data Report Tables. Table 13.1. Landfill Remaining Capacities and Daily Waste Receipts Amounts – Industrial and Residual Solid Waste Landfills

C. Incinerators and Energy Recovery Facilities

The SWMD has not sent any waste to a waste-to-energy facility during the reference year or previous two years. In general, incinerating solid waste is not a major component of solid waste management in Ohio.

Table M-4 Incinerators and Energy Recovery Facilities Used by the District in the Reference Year

Facility Name	Location		Type of Facility	Waste Processed from the District (in tons)
	County	State		
<i>In-District</i>				
none				
<i>Out-of-District</i>				
none				
<i>Out-of-State</i>				
Total				

APPENDIX N EVALUATING GREENHOUSE GAS

The Waste Reduction Model (WARM)

WARM is a tool that US EPA developed to quantify the effects of waste management decisions on greenhouse gas emissions. The model demonstrates the benefits of alternative management technologies over traditional management methods. The WARM model is updated regularly. A SWMD can use a different but comparable modeling program to calculate greenhouse gas emission reductions provided the model accounts for waste management and recycling activities.

WARM is intended to compare municipal solid waste management scenarios. Therefore, data is used for only the residential/commercial sector.

Each SWMD will run WARM twice and include the results in the solid waste management plan:

- For the first run, enter all quantities recycled in the reference year in the landfill column (for the baseline year) and for the alternative scenario, enter the quantities recycled in the tons recycled column.
- For the second run, enter the quantities of residential/commercial material recycled in the reference year in the tons recycled column (for the baseline scenario), and then enter the quantities projected to be recycled in the sixth year of the planning period in the alternative scenario column.

Include printouts of the results for both runs in the solid waste management plan.

A. GHG Measurement

Gases that trap heat in the atmosphere are called greenhouse gases. The main greenhouse gases are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. Each gas's effect on the climate depends on how much is in the atmosphere, how long they stay in the atmosphere, and how strongly they impact the atmosphere. Disposal and treatment of materials results in greenhouse gas emissions from collection, transport, landfill disposal, manufacture, etc.

The most common way to measure climate impact of waste management is to state the impact in carbon equivalents. Since waste reduction results in the reduction of several types of greenhouse gases, the conversion to a standard carbon equivalent (CO₂E) measurement allow for a total quantification of the impact. It also provides a standard language to compare these actions to others such as transportation and energy conservation efforts. A carbon equivalent, CO₂E, is simply the amount of CO₂ that would have the same global warming potential as the waste reduction impacts, when measured over a specified timescale. The international reporting standard for CO₂ emissions is metric tons, so carbon dioxide amounts may be reported as MTCO₂E, metric tons of carbon equivalent.

Produced by US EPA, the Waste Reduction Model (WARM) was designed to help solid waste planners, municipal leaders, and other stakeholder organizations track and report greenhouse gas emissions reductions. It is a database tool that helps decision makers predict the strategies that most reduce GHG emissions. The WARM model calculates GHG emission across six waste management modalities (source reduction, recycling, composting,

anaerobic digestion, combustion, and landfilling). Modeling different combinations of waste management practices allows decision makers to see which approach leads to the least GHG entering the atmosphere.

WARM is a standard tool used for waste management GHG impacts, however the model does have limitations. For example, the WARM GHG-related impacts of composting organics were developed within the framework of the larger WARM development effort and the presentation of results, estimation of emissions and sinks, and description of ancillary benefits are not comprehensive. Also, the material categories within the model are not exhaustive therefore materials like household hazardous wastes (HHW) are excluded from the modeling because they have no relevant WARM proxy.

This report shows the metric tons of carbon dioxide equivalent (MTCO₂E), which describes the global-warming potential of all common greenhouse gases as an equivalent of carbon dioxide. Negative values indicate GHG savings and positive values indicate increasing emissions. In 2019, Lawrence-Scioto County generated 125,133 tons of MSW from the residential and commercial sectors, landfilled or incinerated 82% (102,220 tons), and diverted 18% (22,913 tons). The tons diverted was plugged into WARM to determine the GHG emission savings from the material being diverted instead of landfilled.

Total GHG Emissions from Baseline – Year 2019	(76,667) MTCO ₂ E
Total GHG Emissions from Alternative – Year 2028	(79,245) MTCO ₂ E
Incremental GHG Emissions Savings	(2,578) MTCO ₂ E

By the SWMD having diversion programs, the diverted tons of residential/commercial material in the reference year resulted in approximately 83,176 MTCO₂E prevented from being emitted. In other words, if the diverted material was landfilled this is the amount of emissions that would have been produced. To put this into perspective, the diversion programs are equivalent to:

- Removing emissions from 16,589 passenger vehicles
- Conserving over 8.7 million gallons of gasoline
- Conserving 9,396 households’ annual energy consumption

With the projected increase in diversion by 2028, there is an additional savings of 2,578 MTCO₂E which is equivalent to:

- Removing emissions from an additional 547 passenger vehicles
- Conserving 290,111 more gallons of gasoline
- Conserving 309 additional households’ annual energy consumption

APPENDIX O FINANCIAL PLAN

Ohio Revised Code Section 3734.53(B) requires a solid waste management plan to present a budget. This budget accounts for how the District will obtain money to pay for operating the District and how the District will spend that money. For revenue, the solid waste management plan identifies the sources of funding the District will use to implement its approved solid waste management plan. The plan also provides estimates of how much revenue the District expects to receive from each source. For expenses, the solid waste management plan identifies the programs the SWMD intends to fund during the planning period and estimates how much the SWMD will spend on each program. The plan must demonstrate that planned expenses will be made in accordance with ten allowable uses that are prescribed in ORC Section 3734.57(G).

Ultimately, the solid waste management plan must demonstrate that the SWMD will have adequate money to implement the approved solid waste management plan for a period of 15 years, from 2023 to 2037.

A. Funding Mechanisms and Revenue Generated

In this section, all of the funding mechanisms expected to be used by the SWMD are discussed. In addition, anticipated revenues from each source listed below are projected for each year of the planning period.

1. Disposal Fee

Disposal fees are collected on each ton of solid waste that is disposed at landfills in the levying SWMD. There are three components, or tiers, to the fee. The tiers correspond to where waste was generated – in-district, out-of-district, and out-of-state. In-district waste is solid waste generated by counties within the levying SWMD and disposed at landfills in that SWMD. Out-of-district waste is solid waste generated in Ohio counties that are not part of the SWMD and disposed at landfills in the SWMD. Out-of-state waste is solid waste generated in other states and disposed at landfills in the SWMD.

Ohio’s law prescribes the following limits on disposal fees:

- The in-district fee must be \geq \$1.00 and \leq \$2.00;
- The out-of-district fee must be \geq \$2.00 and \leq \$4.00; and
- The out-of-state fee must be equal to the in-district fee.

Statute (Ohio Revised Code 3734.57(B)) allows for the SWMD to generate revenues by levying fees on any waste disposed in landfills located in the SWMD. In accordance with ORC Section 3734.53(B), the SWMD has set its disposal fees at \$1.25 per ton for waste generated in-district and out-of-state, and \$2.50 per ton for waste generated out-of-district. The SWMD does not have active operating landfills in the SWMD and does plan to have operating landfills in the SWMD’s borders. Revenues are not collected and will not be collected from disposal fees at this time or during the planning period.

Table O-1 Disposal Fee Schedule and Revenue (in accordance with ORC Section 3734.57(B))

Year	Disposal Fee Schedule (\$/ton)			Revenue (\$)			Total Disposal Fee Revenue (\$)
	In-District	Out-of-District	Out-of-State	In-District	Out-of-District	Out-of-State	
2015	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2016	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0

Year	Disposal Fee Schedule (\$/ton)			Revenue (\$)			Total Disposal Fee Revenue (\$)
	In-District	Out-of-District	Out-of-State	In-District	Out-of-District	Out-of-State	
2017	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2018	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2019	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2020	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2021	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2022	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2023	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2024	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2025	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2026	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2027	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2028	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2029	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2030	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2031	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2032	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2033	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2034	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2035	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2036	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0
2037	\$1.25	\$2.25	\$1.25	\$0	\$0	\$0	\$0

Source(s) of Information:

CY 2015-2021 revenues sourced from SWMD quarterly fee reports. All other amounts projected.

Sample Calculations:

Total Revenue from Disposal Fee (2020) = In District Fee + Out-of-District Fee + Out-of-State Fee

Total Revenue from Disposal Fee (2020) = \$0 + \$0 + \$0 = \$0

2. Generation Fee

In accordance with ORC 3734.573, a solid waste management district may levy fees on the generation of solid wastes within the SWMD. The SWMD does not have a generation fee.

Table O-2 Generation Fee Schedule and Revenue

Year	Generation Fee Schedule (\$ per ton)	Total Revenue from Generation Fee (\$)
2015	\$0	\$0
2016	\$0	\$0
2017	\$0	\$0
2018	\$0	\$0
2019	\$0	\$0

Year	Generation Fee Schedule (\$ per ton)	Total Revenue from Generation Fee (\$)
2020	\$0	\$0
2021	\$0	\$0
2022	\$0	\$0
2023	\$0	\$0
2024	\$0	\$0
2025	\$0	\$0
2026	\$0	\$0
2027	\$0	\$0
2028	\$0	\$0
2029	\$0	\$0
2030	\$0	\$0
2031	\$0	\$0
2032	\$0	\$0
2033	\$0	\$0
2034	\$0	\$0
2035	\$0	\$0
2036	\$0	\$0
2037	\$0	\$0

Source(s) of Information:
CY 2015-2021 actual revenues sourced from quarterly fee reports.

3. Designation Fee

In accordance with Ohio Revised Code 343.014, a solid waste management district may adopt designation fees to assure adequate financing to implement the approved solid waste plan. The SWMD does not currently have designation fees. A designation fee can be levied on any solid waste landfill (in-state or out-of-state) that is designated by the SWMD to receive SWMD generated solid waste. With the approval of this Plan Update, the SWMD will have the right to designate solid waste facilities as presented in Appendix P. The SWMD will decide to designate where SWMD solid waste will be disposed after this Plan Update is ratified and approved. The process to designate solid waste facilities will comply with Section 343.013 and 343.014 of the Ohio Revised Code. Any designation fee imposed will be paid by all solid waste facilities designated by the SWMD.

As part of designation, contracts are made with solid waste facilities accepting SWMD waste to remit a per ton contract fee to the SWMD. The designation fee is collected at the first point of disposal by the designated facilities, including landfills, transfer stations, incinerators, and material recovery facilities and remitted back to the SWMD. The SWMD is establishing a per ton contract fee of \$3.00 to begin in 2024.

Table O-3 Designation Fee Schedule and Revenue

Year		

	Designation Fee Schedule (\$ per ton)	Total Designation Fee Revenue (\$)
2015	\$0.00	\$0
2016	\$0.00	\$0
2017	\$0.00	\$0
2018	\$0.00	\$0
2019	\$0.00	\$0
2020	\$0.00	\$0
2021	\$0.00	\$0
2022	\$0.00	\$0
2023	\$0.00	\$0
2024	\$3.00	\$413,334.86
2025	\$3.00	\$412,785.90
2026	\$3.00	\$412,244.32
2027	\$3.00	\$411,710.14
2028	\$3.00	\$411,183.34
2029	\$3.00	\$410,663.92
2030	\$3.00	\$410,151.87
2031	\$3.00	\$409,647.18
2032	\$3.00	\$409,149.85
2033	\$3.00	\$408,659.88
2034	\$3.00	\$408,177.26
2035	\$3.00	\$407,701.98
2036	\$3.00	\$407,234.04
2037	\$3.00	\$406,773.44

Notes: Total disposal calculated from Table D-6.

Sample Calculation:

(Res/Comm Solid Waste Disposal + Ind Solid Waste Disposal) * \$3

4. Loans

Table O-4 is not applicable. The SWMD does not have outstanding debt due to existing loans and the Policy Committee does not intend to secure loans to finance implementing this 2023 Plan.

Table O-4 Loans

Year Debt Was/Will be Obtained	Outstanding Balance	Lending Institution	Repayment Term (years)	Annual Debt Service (\$)
n/a	n/a	n/a	n/a	n/a

5. Other Sources of District Revenue

The SWMD receives revenues from: rates and charges, donations, grants, fines, reimbursements, and other.

Rates and Charges: Rates and charges levied on improved parcels in the county. The charge per improved parcel was increased from \$12.00 to \$16.00 in 2018.

Rates and charges are adjusted through the process described in ORC 343.08. With this said, the projections for rates and charges and any increases are not approved through the approval and issuance of this 2023 Plan Update. Any changes in the rates and charges occur through the process described in ORC 343.08 and are initiated by the Board of Directors of the SWMD at their sole discretion. The charge, which is based on certain types of property ownership, provides a reliable funding source for the SWMD. The SWMD will continue to levy a charge throughout the planning period.

In order to maintain its programs and services, the SWMD is planning step increases to the annual charge on each improved parcel. The step increase schedule is as follows:

- \$18 in 2023
- \$20 in 2027
- \$22 in 2031

The SWMD will follow the process in ORC 343.08 for the scheduled rate and charge increases including the following:

- The Board will fix the rate and charge in a public meeting at least one year prior to the scheduled change.
- The Board will publish in a newspaper of general circulation in both counties a public notice about the three public hearings to be held on the rate and charge. This will occur during the year prior to the change.
- Conduct three consecutive public hearings to obtain public comments during the year prior to the change.
- Conduct a Board meeting to consider public comments and then to finalize the rate and charge during the year prior to the change.
- Submit the rate and charge change to the County Auditor by September of the year prior to the change.
- The new rate and charge becomes effective in the scheduled change year.

Rates and charges are adjusted through the process described in ORC 343.08. With this said, the projections for rates and charges and any increases are not approved through the approval and issuance of this 2023 *Plan Update*. Any changes in the rates and charges occur through the process described in ORC 343.08 and are initiated by the Board of Directors of the District at their sole discretion.

Donations: Donations are received by the District's County Court systems. The Court donates funding to offset some of the District's costs for programs involving solid waste law enforcement, litter abatement, and community service programs for legal offenders.

Grants: Grant funding is competitive and not guaranteed. Two grants were awarded in 2014, due to the timing related to the disbursement of grants, one of the grants was actually received in 2015. The grants were for the Recycling/Litter Trailer and one was to purchase surveillance cameras to catch illegal dumpers. The revenue from this source is not stable from year to year and the SWMD does not project receiving any reimbursement revenue during the planning period.

Reimbursements: The SWMD receives revenue from reimbursements from time to time. The revenue from this source is not stable from year to year and the SWMD does not project receiving any reimbursement revenue during the planning period.

Other: Miscellaneous monies resulting from worker’s compensation refunds, various rebates, Bureau of Workers Compensation refunds, vehicle sale, etc. The revenue from this source is not stable from year to year and the SWMD does not project receiving any reimbursement revenue during the planning period.

Table O-5 Other Revenues and Other Revenue Sources

Year	Rates and Charges	County Contributions	Donations	Grants	Reimbursements	Other	Total Other Revenue
2015	\$663,365.25	\$0	\$0	\$30,000	\$0	\$2,532.58	\$695,897.83
2016	\$317,897.18	\$337,965.28	\$787.02	\$0	\$0	\$1,950.00	\$658,599.48
2017	\$663,424.94	\$0	\$0	\$0	\$0	\$7,631.25	\$671,056.19
2018	\$837,062.54	\$0	\$0	\$0	\$0	\$160,364.93	\$997,427.47
2019	\$852,936.50	\$0	\$0	\$0	\$0	\$1,751.61	\$854,688.11
2020	\$854,036.71	\$0	\$0	\$0	\$18,945.26	\$6,882.61	\$879,864.58
2021	\$898,192.00	\$0	\$0	\$0	\$0	\$0	\$898,192.00
2022	\$898,192.00	\$0	\$0	\$0	\$0	\$0	\$898,192.00
2023	\$1,010,466	\$0	\$0	\$0	\$0	\$0	\$1,010,466.00
2024	\$1,010,466	\$0	\$0	\$0	\$0	\$0	\$1,010,466.00
2025	\$1,010,466	\$0	\$0	\$0	\$0	\$0	\$1,010,466.00
2026	\$1,010,466	\$0	\$0	\$0	\$0	\$0	\$1,010,466.00
2027	\$1,122,740	\$0	\$0	\$0	\$0	\$0	\$1,122,740.00
2028	\$1,122,740	\$0	\$0	\$0	\$0	\$0	\$1,122,740.00
2029	\$1,122,740	\$0	\$0	\$0	\$0	\$0	\$1,122,740.00
2030	\$1,122,740	\$0	\$0	\$0	\$0	\$0	\$1,122,740.00
2031	\$1,235,014	\$0	\$0	\$0	\$0	\$0	\$1,235,014.00
2032	\$1,235,014	\$0	\$0	\$0	\$0	\$0	\$1,235,014.00
2033	\$1,235,014	\$0	\$0	\$0	\$0	\$0	\$1,235,014.00
2034	\$1,235,014	\$0	\$0	\$0	\$0	\$0	\$1,235,014.00
2035	\$1,235,014	\$0	\$0	\$0	\$0	\$0	\$1,235,014.00
2036	\$1,235,014	\$0	\$0	\$0	\$0	\$0	\$1,235,014.00
2037	\$1,235,014	\$0	\$0	\$0	\$0	\$0	\$1,235,014.00

Source(s) of Information:

CY 2015-2021 revenues sourced from SWMD quarterly fee reports.

Sample Calculations:

Other Revenue Total (2015) = rates and charges + county contributions + donations + grants + reimbursements + other

6. Summary of District Revenues

Table O-6 Total Revenue (in accordance with ORC 3734.57, ORC 3734.572 and ORC 3734.573)

Year	Designation Fees	Other Revenue	Total Revenue
2015	\$0	\$695,898	\$695,898
2016	\$0	\$658,599	\$658,599
2017	\$0	\$671,056	\$671,056

Year	Designation Fees	Other Revenue	Total Revenue
2018	\$0	\$997,427	\$997,427
2019	\$0	\$854,688	\$854,688
2020	\$0	\$879,865	\$879,865
2021	\$0	\$898,192	\$898,192
2022	\$0	\$898,192	\$898,192
2023	\$0	\$1,010,466	\$1,010,466
2024	\$413,335	\$1,010,466	\$1,423,801
2025	\$412,786	\$1,010,466	\$1,423,252
2026	\$412,244	\$1,010,466	\$1,422,710
2027	\$411,710	\$1,122,740	\$1,534,450
2028	\$411,183	\$1,122,740	\$1,533,923
2029	\$410,664	\$1,122,740	\$1,533,404
2030	\$410,152	\$1,122,740	\$1,532,892
2031	\$409,647	\$1,235,014	\$1,644,661
2032	\$409,150	\$1,235,014	\$1,644,164
2033	\$408,660	\$1,235,014	\$1,643,674
2034	\$408,177	\$1,235,014	\$1,643,191
2035	\$407,702	\$1,235,014	\$1,642,716
2036	\$407,234	\$1,235,014	\$1,642,248
2037	\$406,773	\$1,235,014	\$1,641,787

CY 2015-2021 revenues sourced from quarterly fee reports. All other amounts are projections (refer to Table O-2 and O-5).

Sample Calculations:

Total Revenue (2015) = Other Revenue

Table O-6 includes all funding mechanisms that will be used, and the total amount of revenue generated by each method for each year of the planning period. The SWMD is diversifying revenue sources in the planning period as demonstrated in Figure O-1 by adding the designation fee.

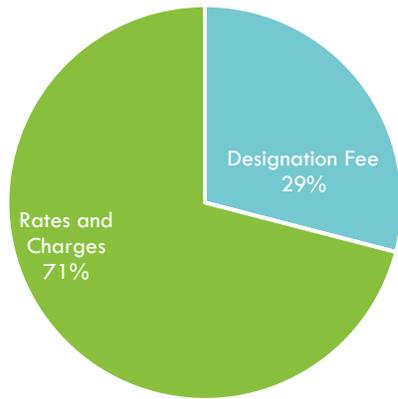


Figure O-1 Year 2024 Major Funding Sources

B. Cost of Implementing Plan

Table O-7 Expenses

Line #	Category/Program	2015	2016	2017	2018	2019	2020	2021	2022
1	1. Plan Monitoring/Prep.	\$0.00	\$14,882.96	\$0.00	\$0.00	\$0.00	\$0	\$34,090	\$8,850
1.a	a. Plan Preparation		\$14,882.96					\$34,090	
1.b	b. Plan Monitoring								\$8,850
1.c	c. Other								
2	2. Plan Implementation	\$603,966	\$712,016	\$675,996	\$711,764	\$780,832	\$643,830	\$794,232	\$984,227
2.a	a. District Administration	\$435,440.59	\$480,359.23	\$469,469.31	\$478,190.51	\$452,080.78	\$342,075	\$441,605	\$549,499
2.a.1	Personnel	\$314,895.23	\$311,192.66	\$385,836.29	\$320,820.17	\$228,500.00	\$273,757	\$288,083	\$371,049
2.a.2	Office Overhead	\$120,545.36	\$169,166.57	\$0.00	\$156,220.34	\$223,500.78	\$68,317	\$153,522	\$115,950
2.a.3	Other			\$83,633.02	\$1,150.00	\$80.00	\$0		\$62,500
2.b	b. Facility Operation		\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0
2.b.1	MRF/Recycling Center								
2.b.2	Compost								
2.b.3	Transfer								
2.b.4	Special Waste								
2.c	c. Landfill Closure/Post-Closure								
2.d	d. Recycling Collection	\$77,742.00	\$159,082.29	\$170,616.84	\$159,294.20	\$266,608.02	\$290,742	\$306,721	\$357,828
2.d.1	Curbside								
2.d.2	Drop-off		\$159,082.29	\$170,616.84	\$159,294.20	\$266,608.02	\$290,742	\$306,721	\$357,828
2.d.3	Combined Curbside/Drop-off								
2.d.4	Multi-family								
2.d.5	Business/Institutional								
2.d.6	Other	\$77,824.50							
2.e	e. Special Collections	\$647	\$55,649	\$7,768	\$44,621	\$0	\$0	\$32,000	\$35,000
2.e.1	Tire Collection	\$646.90		\$7,767.75	\$12,000.00		\$0	\$5,000	\$5,000
2.e.2	HHW Collection		\$30,829.44		\$32,621.06			\$25,000	\$25,000
2.e.3	Electronics Collection								
2.e.4	Appliance Collection								
2.e.5	Other Collection Drives		\$24,820.00					\$2,000	\$5,000
2.f	f. Yard Waste/Other Organics								
2.g	g. Education/Awareness	\$9,646.60	\$13,633.45	\$6,608.51	\$4,024.26	\$5,867.87	\$4,893	\$5,000	\$11,900
2.g.1	Education Staff								
2.g.2	Advertisement/Promotion	\$4,322.96	\$13,633.45	\$6,608.51			\$4,893	\$5,000	\$6,900
2.g.3	Other	\$98.00			\$4,024.26	\$5,867.87			\$5,000
2.h	h. Recycling Market Development	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0	\$0	\$0
2.h.1	General Market Development Activities								
2.h.2	ODNR pass-through grant								
2.i	i. Service Contracts	\$19,803.09							
2.j	j. Feasibility Studies								
2.k	k. Waste Assessments/Audits								
2.l	l. Dump Cleanup	\$22,291.00	\$758.10	\$21,533.70	\$25,633.92	\$31,801.82	\$4,944		\$30,000
2.m	m. Litter Collection/Education								
2.n	n. Emergency Debris Management								
2.o	o. Loan Payment							\$4,554	
2.p	p. Other	\$38,396.00	\$2,533.00			\$24,474.00	\$1,177	\$4,352	
3	3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$17,000	\$0	\$0
4.a	a. Maintaining Roads								
4.b	b. Maintaining Public Facilities								
4.c	c. Providing Emergency Services								
4.d	d. Providing Other Public Services						\$17,000		
5	5. Well Testing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	6. Out-of-State Waste Inspection								
7	7. Open Dump, Litter Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7.a	a. Health Departments								
7.b	b. Local Law Enforcement								
7.c	c. Other								
8	8. Health Department Training								
9	9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads								
9.b	b. Maintaining Public Facilities								
9.c	c. Providing Emergency Services								
9.d	d. Providing other Public Services								
10	10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Expenses	\$603,966.18	\$726,898.47	\$675,996.11	\$711,763.95	\$780,832.49	\$660,830	\$828,322	\$993,077

Line #	Category/Program	2023	2024	2025	2026	2027	2028	2029	2030
1	1. Plan Monitoring/Prep.	\$0	\$9,000	\$0	\$34,090	\$9,000	\$0	\$0	\$9,000
1.a	a. Plan Preparation				\$34,090				
1.b	b. Plan Monitoring		\$9,000			\$9,000			\$9,000
1.c	c. Other								
2	2. Plan Implementation	\$1,451,458	\$1,191,293	\$1,404,948	\$1,147,918	\$1,190,865	\$1,234,931	\$1,282,447	\$1,323,588
2.a	a. District Administration	\$556,391	\$524,827	\$570,253	\$589,365	\$609,156	\$629,651	\$650,876	\$672,860
2.a.1	Personnel	\$397,868	\$411,797	\$447,010	\$462,619	\$478,806	\$495,595	\$513,009	\$531,074
2.a.2	Office Overhead	\$94,246	\$96,926	\$106,681	\$109,714	\$112,833	\$116,041	\$119,339	\$122,732
2.a.3	Other	\$64,277	\$16,104	\$16,562	\$17,033	\$17,517	\$18,015	\$18,527	\$19,054
2.b	b. Facility Operation	\$300,000	\$20,000	\$320,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
2.b.1	MRF/Recycling Center		\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
2.b.2	Compost								
2.b.3	Transfer								
2.b.4	Special Waste	\$300,000	\$0	\$300,000	\$0	\$0	\$0	\$0	\$0
2.c	c. Landfill Closure/Post-Closure								
2.d	d. Recycling Collection	\$368,563	\$379,620	\$391,009	\$402,739	\$414,821	\$427,266	\$440,084	\$453,286
2.d.1	Curbside								
2.d.2	Drop-off	\$368,563	\$379,620	\$391,009	\$402,739	\$414,821	\$427,266	\$440,084	\$453,286
2.d.3	Combined Curbside/Drop-off								
2.d.4	Multi-family								
2.d.5	Business/Institutional								
2.d.6	Other								
2.e	e. Special Collections	\$49,554	\$58,695	\$71,044	\$81,788	\$91,440	\$101,104	\$113,074	\$117,481
2.e.1	Tire Collection	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
2.e.2	HHW Collection	\$30,574	\$38,217	\$45,860	\$53,504	\$61,147	\$68,790	\$78,727	\$81,089
2.e.3	Electronics Collection	\$8,981	\$10,478	\$11,975	\$13,471	\$13,876	\$14,292	\$14,721	\$15,162
2.e.4	Appliance Collection								
2.e.5	Other Collection Drives	\$0	\$0	\$3,209	\$4,813	\$6,418	\$8,022	\$9,626	\$11,231
2.f	f. Yard Waste/Other Organics								
2.g	g. Education/Awareness	\$22,096	\$17,298	\$17,790	\$18,295	\$18,815	\$19,350	\$19,900	\$20,466
2.g.1	Education Staff								
2.g.2	Advertisement/Promotion	\$7,096	\$7,298	\$7,505	\$7,719	\$7,938	\$8,164	\$8,396	\$8,635
2.g.3	Other	\$15,000	\$10,000	\$10,284	\$10,577	\$10,877	\$11,187	\$11,505	\$11,832
2.h	h. Recycling Market Development	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.h.1	General Market Development Activities								
2.h.2	ODNR pass-through grant								
2.i	i. Service Contracts								
2.j	j. Feasibility Studies								
2.k	k. Waste Assessments/Audits								
2.l	l. Dump Cleanup	\$150,853	\$160,853	\$30,853	\$31,730	\$32,632	\$33,560	\$34,514	\$35,495
2.m	m. Litter Collection/Education								
2.n	n. Emergency Debris Management								
2.o	o. Loan Payment								
2.p	p. Other	\$4,000	\$30,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	4000
3	3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.a	a. Maintaining Roads								
4.b	b. Maintaining Public Facilities								
4.c	c. Providing Emergency Services								
4.d	d. Providing Other Public Services								
5	5. Well Testing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	6. Out-of-State Waste Inspection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	7. Open Dump, Litter Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7.a	a. Health Departments								
7.b	b. Local Law Enforcement								
7.c	c. Other								
8	8. Health Department Training								
9	9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads								
9.b	b. Maintaining Public Facilities								
9.c	c. Providing Emergency Services								
9.d	d. Providing other Public Services								
10	10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Expenses	\$1,451,458	\$1,200,293	\$1,404,948	\$1,182,008	\$1,199,865	\$1,234,931	\$1,282,447	\$1,332,588

Line #	Category/Program	2031	2032	2033	2034	2035	2036	2037
1	1. Plan Monitoring/Prep.	\$34,090	\$0	\$9,000	\$0	\$0	\$34,090	\$0
1.a	a. Plan Preparation	\$34,090					\$34,090	
1.b	b. Plan Monitoring			\$9,000				
1.c	c. Other							
2	2. Plan Implementation	\$1,362,341	\$1,402,388	\$1,443,775	\$1,486,550	\$1,530,762	\$1,576,461	\$1,623,701
2.a	a. District Administration	\$695,631	\$719,220	\$743,658	\$768,977	\$795,213	\$822,399	\$850,574
2.a.1	Personnel	\$549,814	\$569,258	\$589,432	\$610,368	\$632,094	\$654,643	\$678,049
2.a.2	Office Overhead	\$126,221	\$129,809	\$133,500	\$137,295	\$141,198	\$145,212	\$149,340
2.a.3	Other	\$19,595	\$20,153	\$20,725	\$21,315	\$21,921	\$22,544	\$23,185
2.b	b. Facility Operation	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
2.b.1	MRF/Recycling Center	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000
2.b.2	Compost							
2.b.3	Transfer							
2.b.4	Special Waste	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.c	c. Landfill Closure/Post-Closure							
2.d	d. Recycling Collection	\$466,885	\$480,891	\$495,318	\$510,178	\$525,483	\$541,248	\$557,485
2.d.1	Curbside							
2.d.2	Drop-off	\$466,885	\$480,891	\$495,318	\$510,178	\$525,483	\$541,248	\$557,485
2.d.3	Combined Curbside/Drop-off							
2.d.4	Multi-family							
2.d.5	Business/Institutional							
2.d.6	Other							
2.e	e. Special Collections	\$118,273	\$119,089	\$119,929	\$120,794	\$121,685	\$122,603	\$123,548
2.e.1	Tire Collection	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
2.e.2	HHW Collection	\$81,089	\$81,089	\$81,089	\$81,089	\$81,089	\$81,089	\$81,089
2.e.3	Electronics Collection	\$15,617	\$16,086	\$16,568	\$17,065	\$17,577	\$18,105	\$18,648
2.e.4	Appliance Collection							
2.e.5	Other Collection Drives	\$11,568	\$11,915	\$12,272	\$12,640	\$13,019	\$13,410	\$13,812
2.f	f. Yard Waste/Other Organics							
2.g	g. Education/Awareness	\$21,048	\$21,646	\$22,262	\$22,895	\$23,546	\$24,215	\$24,903
2.g.1	Education Staff							
2.g.2	Advertisement/Promotion	\$8,880	\$9,133	\$9,392	\$9,659	\$9,934	\$10,216	\$10,507
2.g.3	Other	\$12,168	\$12,514	\$12,870	\$13,236	\$13,612	\$13,999	\$14,397
2.h	h. Recycling Market Development	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.h.1	General Market Development Activities							
2.h.2	ODNR pass-through grant							
2.i	i. Service Contracts							
2.j	j. Feasibility Studies							
2.k	k. Waste Assessments/Audits							
2.l	l. Dump Cleanup	\$36,504	\$37,542	\$38,609	\$39,707	\$40,835	\$41,996	\$43,190
2.m	m. Litter Collection/Education							
2.n	n. Emergency Debris Management							
2.o	o. Loan Payment							
2.p	p. Other	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000	\$4,000
3	3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.a	a. Maintaining Roads							
4.b	b. Maintaining Public Facilities							
4.c	c. Providing Emergency Services							
4.d	d. Providing Other Public Services							
5	5. Well Testing	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	6. Out-of-State Waste Inspection							
7	7. Open Dump, Litter Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7.a	a. Health Departments							
7.b	b. Local Law Enforcement							
7.c	c. Other							
8	8. Health Department Training							
9	9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads							
9.b	b. Maintaining Public Facilities							
9.c	c. Providing Emergency Services							
9.d	d. Providing other Public Services							
10	10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	Total Expenses	\$1,396,431	\$1,402,388	\$1,452,775	\$1,486,550	\$1,530,762	\$1,610,551	\$1,623,701

The expense line items in Table O-7 are the same as those that the SWMD uses to report expenses for the quarterly fee report. In 2015, Ohio EPA updated the expense line items on the quarterly fee report. In some cases, the line items used to report expenses historical quarterly fee reports will differ from the line items in Table O-7. Each expenses applicable to the District allocated to line items in Table O-7 are explained here:

1. Plan Monitoring/Prep.

1.a Plan Preparation

2015 – 2020 – Actual consultant expenses for developing Solid Waste Management Plan.

2021 – 2037 – The SWMD contracted a consultant for developing the 2023 Plan Update using Format 4.0. The expense line item shown are for consulting fees for plan preparation.

1.b Plan Monitoring

2022 – 2037 – Expected costs outside of SWMD personnel costs to conduct surveys, assist with quarterly fee reports and other needed monitoring reports. Costs were incurred in 2021 for consultant services to help with the annual district report preparation and submittal to Ohio EPA. These expenses were recorded in office overhead, line item 2.a.2.

2. Plan Implementation

2.a District Administration

2.a.1 Personnel

2015 – 2021 - Personnel costs paid by the SWMD include Solid Waste District Director, Assistant Director, Enforcement Officer, Lawrence County Litter Supervisor and Scioto Litter County Supervisor. Expense line items include cost for payroll, payroll taxes, and benefits for SWMD personnel (including PERS, Medicare, and insurance). The costs shown for 2015 through 2021 are actual expenses. Staff position changes and retirements impacted the salary expense resulting in historical yearly fluctuations.

2022 – 2037 - In 2021, the U.S. national inflation rate trended around 2.8%. The SWMD is budgeting for a 3% annual rate increase on salaries and 5% annually on fringes and benefits. With the addition of a part-time employee added in 2023 and another added in 2025, the forecasted personnel budget supports 5 full-time and 2 part-time employees.

2.a.2 Office Overhead –

2015 – 2021 - This includes office rent, utilities, supplies, computer software and hardware, meeting expenses, magazine subscriptions, equipment rental, purchase or maintenance, liability insurance, office disposal contracts, telephone, postage, travel for SWMD staff including conferences, printing, displays, advertising done by the SWMD office (such as public notices), state audits, payments to counties for their administration (including commissioners, auditor, treasurer). The SWMD is also recording fuel expenses to this line item. The costs shown for 2015 through 2021 are actual expenses. In 2021 higher costs include purchase of a pickup truck, boat and boat motor, and boat trailer. This equipment is used for litter and dump cleanup. Historically there has been a lack of consistency in which line item on the Ohio EPA quarterly fee report form these expenses were reported.

2022 – 2037 - In 2022, the SWMD aligned the auditor report to the Ohio EPA quarterly fee form for more consistent reporting moving forward. In 2025, the SWMD expects additional utility expenses from operating two locations, one in Scioto County and one in Lawrence County. Additionally, an inflation factor of 2.8% is applied annually.

2.a.3 Other

2015 – 2021 – This includes expenditures for SWMD administration that are not represented by the other line items in this subcategory such as legal fees, financial audits, etc. The costs shown for 2015 through 2021 are actual expenses. Historically there has been a lack of consistency in which line item on the Ohio EPA quarterly fee report form these expenses were reported.

2022 – 2037 - In 2022, the SWMD aligned the auditor report to the Ohio EPA quarterly fee form for more consistent reporting moving forward. Legal expenses to assist with the designation fee are budgeted at \$50,000 in 2022 and 2023. An inflation factor of 2.8% is applied annually.

2.b. Facility Operation

2.b.1 MRF/Recycling Center

2024 – 2037 – The SWMD will contribute to an annual equipment fund beginning in 2024 contributing \$20,000 annually through the planning cycle.

2.b.2 Compost - No expenses incurred or budgeted.

2.b.3 Transfer - No expenses incurred or budgeted.

2.b.4 Special Waste –

2024 – 2037 – The SWMD is budgeting for purchase of property in each county to serve as a permanent super drop-off. One property is planned to be purchased in 2023 and the second in 2025. However, the actual purchase may be delayed if revenues sources are insufficient.

2.c. Landfill Closure/Post-Closure - No expenses incurred or budgeted.

2.d. Recycling Collection

2.d.1 Curbside – No expenses incurred or budgeted.

2.d.2 Drop-off

2015 – 2021 – Actual program contract costs to service the recycling drop-off containers. The costs dipped in 2018 as a result of halted service from the contracted service provider. A new service provider was contracted in 2019. Since then costs have annually increased.

2022 – 2037 – Beginning in 2023 drop-off program contract costs are budgeted at an annual inflation factor of 2.8%.

2.d.3 Combined Curbside/Drop-off - No expenses incurred or budgeted.

2.d.4 Multi-Family - No expenses incurred or budgeted.

2.d.5 Business/Institutional - No direct costs. All expenses are indirect costs from SWMD staff time.

2.d.6 Other - No expenses incurred or budgeted.

2.e. Special Collections

2.e.1. Tire Collection

2015 – 2021 – Actual tire collection drive expenses.

2022 – 2037 – Tires will be accepted at the District Recycling Center locations. Annual management costs are budgeted.

2.e.2. HHW Collection –

2015 – 2021 – Actual HHW collection event expenses. Events were held every other year.

2022 – 2037 – Year 2022 are projected budget expenses for an HHW event. HHW will be accepted at the District Recycling Center locations. Annual management costs are budgeted beginning in 2023

by multiplying the number of households to an average pounds per household and an average estimated management cost per pound. A user estimate factor was applied to number of households to estimate an approximate number of households that will use the system. To estimate the average pounds per household of HHW collected, the SWMD turned to other SWMD's programs operating permanent drop-off locations with similar seasonal availability.

HHW Cost Estimations	Modeled Factors	
Lawrence HH	23,221	
Scioto HH	29,858	
Estimated Pounds Per HH	2	Greene County SWMD collects about 2 lb/HH. Geauga Trumbull SWMD collects about 3 lb/HH.
Estimated Annual Pounds of HHW	106,158	
Estimated Cost per Pound	\$0.72	Greene County SWMD average annual per pound cost is \$0.98. Geauga Trumbull SWMD average annual per pound cost is \$0.72.
Total Annual Estimated Costs	\$76,433.76	

The household user estimate factor assumed 40% of HHs in 2023, 50% in 2024, 60% in 2025, 70% in 2026, 80% in 2027, and 90% in 2028. This assumes a gradual increase to the \$76K annual cost. Projections from 2029 through the end of the planning period inflate at an annual 3%.

2.e.3. Electronics Collection -

2022 – 2037 – Electronics will be accepted at the District Recycling Center locations. Annual management costs are budgeted beginning in 2023 and were calculated similarly as described above in the HHW.

Electronic Costs	Modeled Factors	
Lawrence HH	23,221	
Scioto HH	29,858	
Estimated Pounds Per HH	1.88	Geauga Trumbull receives about 1.55 pounds per HH (based on only 80,000 HH) Greene County, Ohio receives about 1.89 pounds per HH
Estimated Annual Pounds of Electronics	99,789	
Estimated Cost per Pound	\$0.15	Geauga Trumbull estimated cost per pound is \$0.17 Greene County, Ohio estimated cost per pound is \$0.08
Total Annual Estimated Costs	\$14,968.28	

The household user estimate factor assumed 60% of HHs in 2023, 70% in 2024, 80% in 2025, and 90% in 2026. This assumes a gradual increase to the \$15K annual cost. Projections from 2027 through the end of the planning period inflate at an annual 3%.

2.e.4. Appliance Collection - No expenses incurred or budgeted.

2.e.5. Other Collection Drives -

2022 – 2037 – Mattresses will be accepted at the District Recycling Center locations. Annual management

costs are budgeted beginning in 2025 and were calculated similarly as described above in the HHW.

Mattress Costs	Modeled Factor	
Mattress Recycling Council stated daily mattress disposal	50,000	mattresses
Total annual mattress disposal	18,250,000	mattresses
US number of Household's	120,756,048	2019 US Census Bureau Facts and Figures
Estimated Mattress Disposal per Household	0.15	Calculated: mattress disposal divided by households
Estimated Cost per Mattress	\$20.00	based on disposal costs of mattress

The household user estimate factor assumed 2% of HHs in 2023, 3% in 2024, 4% in 2025, 5% in 2026, 5% in 2027, and 7% in 2028. Projections from 2029 through the end of the planning period inflate at an annual 3%.

2.f.1. Yard Waste/Other Organics - No expenses incurred or budgeted.

2.g. Education/Awareness

2.g.1 Education Staff - No expenses incurred or budgeted for this line item. Staff costs to implement programs and strategies for education and outreach are absorbed in the personnel line item.

2.g.2. Advertisement/Promotion - Advertising and promotional costs for programs and strategies are budgeted annually. Costs are budgeted at an annual inflation factor of 2.8%.

2.g.3. Other – In 2023 costs are increased to develop a new website. In 2024, it's anticipated about \$10,000 is needed for education materials. Thereafter costs are budgeted at an annual inflation factor of 2.8%.

2.h.1 General Market Development Activities - No expenses incurred or budgeted.

2.h.2 ODNR pass-through grant - No expenses incurred or budgeted.

2.i Service Contracts - No expenses incurred or budgeted.

2.j Feasibility Studies - No expenses incurred or budgeted.

2.k Waste Assessments/Audits - No expenses incurred or budgeted.

2.l Dump Cleanup -

2015 – 2021 - This includes expenses to clean up litter and dump sites and for community clean ups which includes fuel, .

2022 – 2037 – Expenses in 2022 are estimated at \$30,000. Costs through the planning period are budgeted at an annual inflation factor of 2.8%. Additional equipment expenses are budgeted in 2023 for a truck with dump box estimated at \$120,000 and in 2024 for a backhoe and trailer estimated at \$130,000.

- 2.m. Litter Collection/Education - No expenses incurred or budgeted.
- 2.n. Emergency Debris Management - No expenses incurred or budgeted.
- 2.o. Loan Payment - No expenses incurred or budgeted. An expense shown in year 2021 was recorded on the quarter 1 fee report, however the SWMD has no loans.
- 2.p. Other -
 2015 – 2021 - This includes trash disposal fees, surveillance cameras, and enforcement officer expenses: security body cameras, decals.
 2023 – 2037 – Costs are estimated at \$4000 with an annual 2.8% inflation. In 2024, the SWMD is budgeting about \$26,000 for a bulky waste pilot project.

3. **Health Dept. Enforcement**
 No expenses incurred or budgeted.

4. **County Assistance**
 No expenses incurred or budgeted

5. **Well Testing**
 No expenses incurred or budgeted

6. **Out-of-State Waste Inspection**
 No expenses incurred or budgeted

7. **Open Dump, Litter Law Enforcement**
 No expenses incurred or budgeted

8. **Health Department Training**
 No expenses incurred or budgeted

9. **Municipal/Township Assistance**
 No expenses incurred or budgeted

Nothing contained in these budget projections should be construed as a binding commitment by the SWMD to spend a specific amount of money on a particular strategy, facility, program and/or activity. The SWMD Coordinator will review and revise the budget as needed, with support from the Board of County Commissioners and Policy Committee, to implement planned strategies, facilities, programs and/or activities as effectively as possible with the funds available.

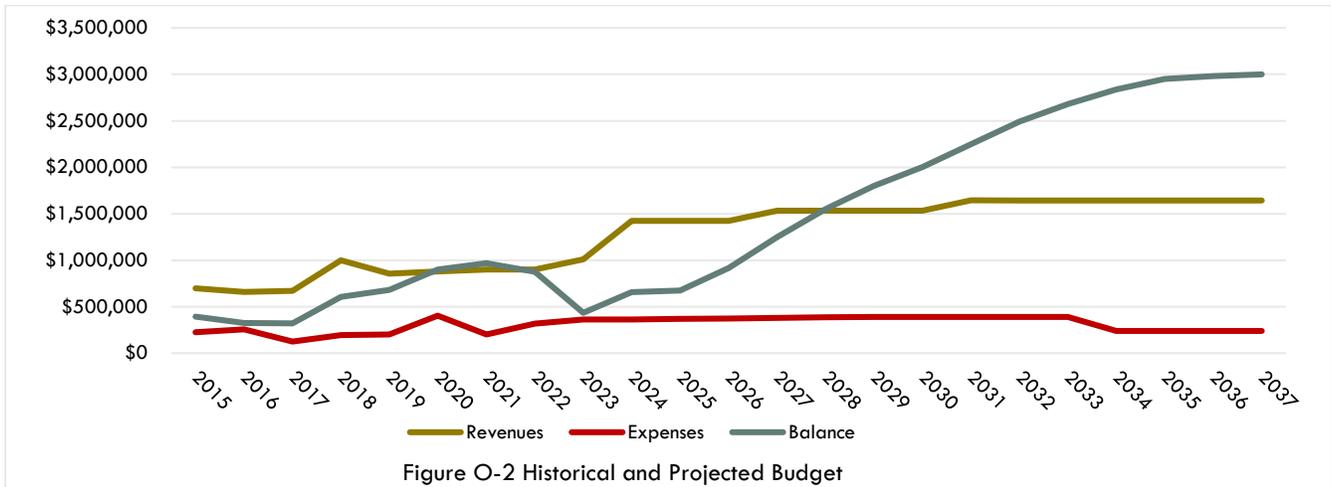
The SWMD reserves the right to revise the budget and reallocate funds as programs change or as otherwise determined to be in the best interest of the SWMD. The Board of County Commissioners shall thereafter approve any adjustments to the budget on an annual or more frequent basis. The SWMD is committed to implementing planned strategies, facilities, programs and/or activities in a cost-effective manner.

The SWMD is committed to improving the effectiveness and reducing the cost of all strategies, facilities, programs and activities. The Board of County Commissioners is authorized to expend SWMD funds among other uses included in the Plan Update when costs are reduced. Additionally, the Board of County Commissioners is authorized

to use reduced costs to provide grant funds or direct funding to evaluate, test and implement new strategies, facilities, programs and activities that are in the best interest of the SWMD and are in concert with this Plan Update.

Table O-8 Budget Summary

Year	Revenue (\$)	Expenses (\$)	Annual Surplus/Deficit (\$)	Balance (\$)
2014	Ending Balance			\$301,681.59
2015	\$695,898	\$603,966	\$91,932	\$393,613.24
2016	\$658,599	\$726,898	-\$68,299	\$325,314.25
2017	\$671,056	\$675,996	-\$4,940	\$320,374.33
2018	\$997,427	\$711,764	\$285,664	\$606,037.85
2019	\$854,688	\$780,832	\$73,856	\$679,893.47
2020	\$879,865	\$660,830	\$219,034	\$898,927.72
2021	\$898,192	\$828,322	\$69,870	\$968,798
2022	\$898,192	\$993,077	-\$94,885	\$873,913
2023	\$1,010,466	\$1,451,458	-\$440,992	\$432,921
2024	\$1,423,801	\$1,200,293	\$223,508	\$656,429
2025	\$1,423,252	\$1,404,948	\$18,304	\$674,733
2026	\$1,422,710	\$1,182,008	\$240,702	\$915,436
2027	\$1,534,450	\$1,199,865	\$334,585	\$1,250,021
2028	\$1,533,923	\$1,234,931	\$298,993	\$1,549,014
2029	\$1,533,404	\$1,282,447	\$250,956	\$1,799,970
2030	\$1,532,892	\$1,332,588	\$200,303	\$2,000,274
2031	\$1,644,661	\$1,396,431	\$248,230	\$2,248,504
2032	\$1,644,164	\$1,402,388	\$241,776	\$2,490,280
2033	\$1,643,674	\$1,452,775	\$190,899	\$2,681,179
2034	\$1,643,191	\$1,486,550	\$156,641	\$2,837,820
2035	\$1,642,716	\$1,530,762	\$111,954	\$2,949,774
2036	\$1,642,248	\$1,610,551	\$31,697	\$2,981,471
2037	\$1,641,787	\$1,623,701	\$18,087	\$2,999,557



C. Alternative Budget

The SWMD does not anticipate the need to identify any type of contingent funding or financing that would be necessary to fund any type of program activity in conjunction with Plan implementation efforts.

An additional funding source, not estimated in this 2023 Plan, is the possibility of adding user fees to the materials collected at special collections. The District reserves the right to charge any fees and fluctuate fees based on materials, markets, or management methods. Services may change year to year with the changing needs of society and the costs involved in providing these services. User fees and hours of operation will be available on the website.

An example listing of possible user fees:

Scrap Tires may be on or off rim.

- Misc. small tires — FEE: \$1.50 each
- Passenger car — FEE: \$2.50 each
- Pick-up truck — FEE: \$3.50 each
- Semi-truck — FEE: \$9.00 each
- Farm tractor small front wheel — FEE: \$5.00 each
- Farm tractor medium rear wheel — FEE: \$15.00 each
- Farm tractor very large rear wheel — FEE: \$25.00 each

Used Oil Based Paints and Used Motor Oils

- Oil-Based Paint – FEE: \$0.25/lb.
- Oil based paint only, spray paints in cans, stain, varnish, shellac, turpentine, mineral spirits, linseed oil, water sealants.
- Used Motor Oil – FEE: No charge
- Used oil, brake fluid, antifreeze, transmission fluid

Electronics

- All televisions & computer monitors accepted for a fee of \$10.
- Fluorescent Lights, Fluorescent tubes up to eight feet, Fluorescent U-tubes, circular tubes, and CFL (compact fluorescent light bulbs) - FEE: \$0.30

HHW

- Cleaning Products / Chemicals — FEE: \$0.25/lb

- Bottled cleaning products, oven cleaners, degreasers, drain cleaners, bleach, ammonia, wood & metal polish, shoe polish, fingernail polish and polish remover, pool chemicals, auto waxes, auto cleaners, moth balls, artists supplies, photographic chemicals, acids, bases, and aerosol spray cans containing items listed above - FEE: \$0.25/lb
- Garden Products — FEE: \$0.25/lb
- Fertilizers, pesticides, herbicides, fungicides, plant food, lawn treatments, bug sprays, poisons for ants, rodents, insects, wasps, or arsenic, and aerosol spray cans containing items listed above. - FEE: \$0.25/lb
- Health care products — FEE: \$0.25/lb

User fees could result in \$5,000 to \$15,000 annually in revenue to support the operation costs of special collections.

D. Major Facility Project

A SWMD that is considering whether to construct and operate a new solid waste management facility or renovate an existing solid waste facility will provide a budget for the facility. For the purposes of this section, a solid waste management facility means a facility the SWMD owns and operates or will own and operate to manage solid waste and/or recyclable materials. Examples of solid waste management facilities include:

- a municipal solid waste landfill or solid waste transfer station
- a yard waste composting facility
- a material recovery facility
- a recycling center
- a permanent household hazardous waste collection facility

The SWMD is currently renting one location in Lawrence County for the SWMD operations. To create better opportunities for both Scioto and Lawrence County residents, the SWMD is planning to purchase and own a property in each county. The intent is to develop a comprehensive drop-off recycling center in each county. Both locations will be functional with an office, garage, and storage space. Staggering the purchase of the properties allows for better use of SWMD resources (staff and finances) as well as time to work through the operational mechanics. The budget projects 2023 and 2025 as the two years for property to be purchased. The budget for this planning period projects the following facility costs and size considerations.

Purchase Costs:

Lawrence County- \$300,000

Scioto County - \$300,000

Size Considerations:

Nightingale and Lewry (Handbook and Household Hazardous Waste 2008) suggest a formula to consider for sizing of permanent HHW collection facility. It is suggested to allow for one square foot of operational area for every 200 pounds of anticipated annual throughput with an average of 5 percent of households to participate and volume varying from 60 pounds to 150 pounds per household.

30,000 households times 3 percent participation rate = 900

900 x 100 pounds throughput per year = 90,000 pounds

90,000 pounds divided by 200 pounds = 450 – square foot needed to service 30,000 households

This calculation suggests 450 square foot is needed to manage expected HHW. Yet, many variables influence actual square footage needs. When e-waste and appliances are included, a larger footprint is needed for storage capacity to provide long-term solutions. Ideally a permanent facility having a larger footprint (over 5,000 square feet) will be able to include capabilities to accommodate electronic recycling and appliances under the same roof.

A key factor is variability in pounds. It is uncertain how much material will be handled at each facility.

APPENDIX P DESIGNATION

A. Statement Authorizing/Precluding Designation

ORC Section 3734.53(E)(1) requires a solid waste management plan to provide a clear statement as to whether the board of county commissioners or directors is authorized to or precluded from establishing facility designations under ORC Section 343.01.

The Board of Directors of the Lawrence Scioto Solid Waste Management District is hereby authorized to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code after this plan has been approved by the director of the Ohio Environmental Protection Agency.

A. Designated Facilities

In this Plan Update, the District is not designating facilities to which waste generated in the District must be taken. However, the District reserved the right to establish facility designations in accordance with Section 343.013, 343.014 and 343.015 of the Ohio Revised Code with respect to both in-state and out-of-state facilities. In addition, facility designation will be established and governed by applicable district rules.

B. Waiver Process for the Use of Undesignated Facilities

The District is authorized to designated solid waste management facilities. If the Board elects to designate facilities, the following waiver process must be followed by any person, municipal corporation, township or other entity that wishes to deliver waster to a solid waste facility not designated by the District.

In the Event that any person, municipal corporation, township or other entity requests permission to use a facility, other than a designated facility for the disposal of solid waste generated within the District, the entity must submit a written request for a waiver of designation to the Board. The request must contain the following information:

1. Identification of the persons, municipal corporation, township or other entity requesting the waiver;
2. Identification of the generator(s) of the solid waste for which the waiver is requested;
3. Identification of the type and quantity (in tons per year of solid waste for which the waiver is requested;
4. Identification of the time period(s) for which the waiver is requested;
5. Identification of the disposal facility(s) to be used if the waiver is granted;
6. If the solid waste is to be disposed in an Ohio landfill, a letter from the solid waste management district where the solid waste will be disposed acknowledging that the activity is consistent with that district's current plan;
7. An estimate of the financial impact to the District that would occur with issuance of the requested waiver; and
8. An explanation of the reason(s) for requesting the waiver.

Upon receipt of the written request containing all of the information listed above, the District staff will review it and may request additional information necessary to conduct its review. The Board shall act on a waiver request within

ninety days following receipt of the request. The Board may grant the request for a waiver only if the Board determines that:

1. Issuance of the waiver is not inconsistent with projections contained in the District's approved Plan Update under Section 3734.53 (A)(6) and (A)(7) of the Ohio Revised Code;
2. Issuance of the waiver will not adversely affect implementation and financing of the District's approved Plan Update; and
3. The entity is willing to enter into an agreement requiring the payment of a waiver fee to the District.

APPENDIX Q DISTRICT RULES

A. Existing Rules

The Board of Directors (County Commissioners) of the Lawrence-Scioto Joint County Solid Waste Management District (District), in accordance with Ohio Revised Code Section 343.01(G), reserves the right as authorized by law, to adopt, amend, rescind, and enforce rules to assist the District with the implementation of its approved Solid Waste Management Plan. The District had no existing rules at the time this Plan Update was adopted.

B. Proposed Rules

Any proposed rule as authorized by ORC Section 3734.53(C) will be subject to review by the District's counsel and determined at that time to be within the District's statutory authority to promulgate. In the event any portion of any rule reservation stated herein is determined to be unenforceable by a court of competent jurisdiction, such a determination shall not affect the remainder of the District's reserved authority to develop rules. All reservations of rights to develop rules contained herein are severable and the invalidity of any one or more shall not affect the remainder.

With the writing of this Plan, there are no rules promulgated by the District or proposed for adoption. The District Board of Directors reserves the right to adopt rules at any time after the approval of this Solid Waste Management Plan in accordance with the provisions of the Ohio Revised Code 3734.53(C):

"(C) The solid waste management plan of a county or joint district may provide for the adoption of rules under division (G) of section 343.01 of the Revised Code after approval of the plan under section 3734.521 or 3734.55 of the Revised Code doing any or all of the following:

- (1) Prohibiting or limiting the receipt at facilities located within the solid waste management district of solid wastes generated outside the district or outside a prescribed service area consistent with the projections under divisions (A)(6) and (7) of this section...
- (2) Governing the maintenance, protection, and use of solid waste collection, storage, disposal, transfer, recycling, processing, and resource recovery facilities within the district and requiring the submission of general plans and specifications for the construction, enlargement, or modification of any such facility to the board of county commissioners or board of directors of the district for review and approval as complying with the plan or amended plan of the district;
- (3) Governing development and implementation of a program for the inspection of solid wastes generated outside the boundaries of the state that are being disposed of at solid waste facilities included in the district's plan;
- (4) Exempting the owner or operator of any existing or proposed solid waste facility provided for in the plan from compliance with any amendment to a township zoning resolution adopted under section 519.12 of the Revised Code or to a county rural zoning resolution adopted under section 303.12 of the Revised Code that rezoned or redistricted the parcel or parcels upon which the facility is to be constructed or modified and that became effective within two years prior to the filing of an application for a permit required under division (A)(2)(a) of section 3734.05 of the Revised Code to open a new or modify an existing solid waste facility."

The complete text of Section 343.01 and Section 3734.53 of the ORC are included in Appendix H. Additional language in these sections further defines the limits of the rules which may be promulgated in the four areas listed above.

The following rules will be implemented upon approval of this Plan Update:

RULE 1: DEFINITIONS

All capitalized terms used in the rules adopted by the Board of Directors of the Lawrence-Scioto Solid Waste Management District shall have the meanings established herein:

"Acceptable Solid Waste" means that portion of Solid Waste that is generated within the Lawrence-Scioto Solid Waste Management District, which is appropriate for delivery to a Licensed Solid Waste Facility, but does not include Hazardous Waste, or Unacceptable Waste. If any governmental agency or unit having appropriate jurisdiction determines that substances which are not, as of the date of the adoption of this definition, considered harmful, toxic, or dangerous, are in fact harmful, toxic or dangerous or are hazardous or harmful to health, then any such substances or materials shall thereupon constitute Hazardous Waste or Unacceptable Waste for purposes of this definition.

"Applicant" means a Person proposing to construct or modify a Solid Waste Facility within the District or requests a waiver from the application of a rule adopted by the Board.

"Automotive Shredder Residue" means the nonrecyclable residue that is generated as a direct result of processing automobiles, appliances, sheet steel, and other ferrous and nonferrous scrap metals through a Hammermill shredder for purposes of recycling and that meets all of the following requirements: (a) the residue is Solid Waste; (b) the residue is not Hazardous Waste; (c) the residue created during the recycling process comprises not more than thirty-five per cent (35%) of the total weight of material that is processed for Recycling; and (d) the residue is generated by processing Recyclable Materials that are to be sold, used, or reused within ninety (90) days of the time when the material is processed.

"Board" and **"Board of Directors of the District"** means the Board of County Commissioners of Lawrence and Scioto Counties in Ohio acting in its capacity as the Board of Directors of the District.

"Charitable Organization" means any tax-exempt religious, educational, veteran's, fraternal, sporting, service, nonprofit medical, volunteer rescue service, volunteer firefighter's, senior citizen's, historic railroad, educational, youth athletic, amateur athletic, or youth athletic park organization as such terms are defined in Revised Code Chapter 2915. An organization is tax exempt if the organization has received from the Internal Revenue Service a determination letter that currently is in effect stating that the organization is exempt from federal income taxation under subsection 501(a) and described in subsection 501(c)(3), 501(c)(4), 501(c)(8), 501(c)(10), or 501(c)(19) of the Internal Revenue Code.

"Licensed Solid Waste Facility" means those Solid Waste Facilities licensed by Ohio EPA to receive Solid Waste.

"Disposal" means the discharge, deposit, injection, dumping, spilling, leaking, emitting, or placing of any Solid Wastes or hazardous waste into or on any land or ground or surface water or into the air, except if the disposition or placement constitutes storage or treatment or, if the solid wastes consist of scrap tires, the disposition or placement constitutes a beneficial use or occurs at a scrap tire recovery facility licensed under section 3734.81 of the Revised Code.

"District" means the Lawrence-Scioto Solid Waste Management District with its principal office located at 101 N. Third Street, Ironton, Ohio 45638.

"Electronic Waste" or **"E Waste"** means unwanted electronic appliances and devices, including but not limited to: computers, monitors, fax machines, copy machines, televisions, stereo/audio equipment, phones, cellular phones, personal digital assistants (PDAs), game consoles, video recorders, and electronics from industrial sources.

"Facility" or **"Facilities"** or **"Solid Waste Facility or Facilities"** means any site, location, tract of land, installation, or building used for: incineration, composting, sanitary landfilling, or other method of disposal of Solid Waste; the collection, storage, or processing of Scrap Tires; and includes any Solid Waste Disposal Facility, Solid Waste Energy Recovery Facility, Solid Waste Composting Facility, Solid Waste Transfer Facility, Solid Waste Recycling Facility, Legitimate Recycling Facility, or Resource Recovery Facility including Solid Waste Facilities as defined in Section 6123.01 of the Revised Code.

"General Plans and Specifications" means that information required to be submitted to the Board for review for the construction or Modification of any proposed Solid Waste Facility and includes, but is not limited to, a site plan for the proposed Solid Waste Facility, architectural drawings or artist's renderings of the proposed Solid Waste Facility, the projected size and capacity of the proposed Solid Waste Facility and all other information required by the siting strategy contained in the Plan.

"Generator" means a Person who produces or creates Solid Waste.

"Hazardous Waste" means Solid Waste which, by reason of its listing, composition or characteristics is a hazardous waste (as defined in the Resource Conservation and Recovery Act, 42 U.S.C. Section 6901 et seq., as amended including, but not limited to, amendments thereto made by the Solid Waste Disposal Act Amendments of 1980) and related federal, state and local laws and regulations, or in any additional or substitute federal, state or local laws and regulations pertaining to the identification, treatment, storage or disposal of toxic substances or hazardous wastes; as any of the foregoing is from time-to-time amended or replaced.

"Legitimate Recycling Facility" means an engineered facility or site where Recycling of material other than Scrap Tires is the primary objective of the Facility, including: (a) Facilities that accept only Source Separated Recyclable Materials, except Scrap Tires, and or commingled Recyclable Materials which are currently recoverable utilizing existing technology; and (b) Facilities that: (i) accept mixed or Source Separated Solid Waste; (ii) recover for beneficial use not less than sixty percent (60%) of the weight of Solid Waste brought to the Facility each month (as averaged monthly) for not less than eight (8) months in each calendar year, and (iii) dispose of not more than forty percent (40%) of the total weight of Solid Waste brought to the Facility each month (as averaged monthly) for not less than eight (8) months in each calendar year.

"Modify" or "Modification" means a change in the operation of an existing in-District Solid Waste Facility that requires the approval of the Director of the Ohio Environmental Protection Agency; or that involves a change in the type of material, manner of operation or activities conducted at the Solid Waste Facility that may directly or indirectly affect the Maximum Feasible Utilization of existing in-District Solid Waste Facilities.

"Person" means a natural person, partnership, association, firm, corporation, limited liability company, charitable organization, municipal corporation, township, government unit or other political subdivision.

"Plan" means the current Solid Waste Management Plan of the District approved by the Director of the Ohio Environmental Protection Agency and as may be amended or updated from time-to-time.

"Processed Infectious/Pathological and Biologic Waste" means a portion of Solid Waste consisting of infectious/pathological or biologic waste which has been rendered non-infectious by sterilization, incineration or other equally effective processing technique. "Property" means any improved or non-improved parcel owned by any Person in the District.

"Recyclable Material(s)" means Solid Waste that is, or may be, collected, sorted, cleansed, treated, reconstituted for return to commerce. Recyclable Materials include, but are not limited to: corrugated cardboard, office paper, newspaper, glass containers, steel containers, aluminum containers, plastic containers, wood packaging and pallets, lead-acid batteries, major appliances, electronic devices and Yard Waste.

"Recycle" or "Recycled" or "Recycling" means the process of collecting, sorting, cleansing, treating and reconstituting Solid Waste that would otherwise be disposed in a Solid Waste Disposal Facility and returning the reconstituted materials to commerce as commodities for use or exchange.

"Recyclable Material Collection Service" means the process, system, or

"Recycling Services" means the collection, transportation, and delivery for processing of Solid Waste Recyclable Materials.

"Rule" means the action of the Board in promulgating, adopting and publishing such action as a rule of the Authority as reserved in the Plan and authorized by Sections 343.01 (G) and 3734.53 of the Revised Code, as now existing or hereafter amended.

"Sanitary Landfill" means a permitted and licensed sanitary landfill approved by the Director of the Ohio Environmental Protection Agency to so accept Solid Waste.

"Scavenging" means the unauthorized removal by any Person of Solid Waste, Recyclable Materials or Yard Waste.

"Scrap Tire(s)" mean Solid Waste consisting of unwanted or discarded tires.

"Single Stream Recycling" refers to a system in which all source separated recyclable materials such as paper fibers, plastics, metals, and other containers are mixed in a collection truck, instead of being sorted by the depositor into separate commodities (newspaper, paperboard, corrugated fiberboard, plastic, glass, etc.) and handled separately throughout the collection process. In single stream, both the collection and processing systems

are designed to handle this fully commingled mixture of recyclables, with materials being separated for reuse at a materials recovery facility.

"Solid Waste" means such Unwanted residual solid or semisolid material as results from industrial, commercial, agricultural, and community operations, excluding earth or material from construction, mining or demolition operations, or other waste materials of the type that would normally be included in demolition debris, nontoxic fly ash, spent nontoxic foundry sand, and slag and other substances that are not harmful or inimical to public health, and includes, but is not limited to, garbage, Scrap Tires, combustible and non-combustible material, street dirt, and debris. "Solid Waste" does not include any material that is an infectious waste or a hazardous waste.

"Solid Waste Collection Service" means the process, system, or service of collecting Solid Waste from a Generator.

"Solid Waste Composting Facility" means any site, location, tract of land, installation, or building used for composting Solid Wastes where the owner or operator has met all registration, licensing or permitting requirements of rule 3745-560 of the Administrative Code.

"Solid Waste Disposal Facility" means any site, location, tract of land, installation, or building used for incineration, composting, sanitary landfilling, or other approved methods of disposal of Solid Waste.

"Solid Waste Energy Recovery Facility" means any site location, tract of land, installation or building where Solid Waste is used as, or the owner or operator of the Solid Waste Energy Recovery Facility intends to use Solid Waste as, fuel to produce energy, heat, or steam.

"Solid Waste Facilities" include Solid Waste: Disposal Facilities, Energy Recovery Facilities, Resource Recovery Facilities, Composting Facilities, Transfer Facilities, Legitimate Recycling Facilities, Recycling Facilities, and Collection Facilities.

"Solid Waste Recycling Facility" means any site, location, tract of land, installation, or building used for Recycling Solid Waste.

"Solid Waste Resource Recovery Facility" means Solid Waste Energy Recovery Facilities, Legitimate Recycling Facilities, and Solid Waste Recycling Facilities.

"Solid Waste Transfer Facility" means any site, location, tract of land, installation, or building that is used or intended to be used primarily for the purpose of transferring Solid Wastes that were generated off the premises of the facility from vehicles or containers into other vehicles for transportation to a Solid Waste Disposal Facility.

"Source Separate" or **"Source Separation"** means the process of separating, or the separation of, Solid Waste, including Yard Waste or Recyclable Materials by the Generator at the location were generated for the purpose of Recycling.

"Source Separated Recyclable Materials" means Solid Waste Recyclable Materials that are separated from other Solid Waste at the location where generated.

"Special Handling Waste" means a portion of Solid Waste which consists of sludge, Processed Infectious/Pathological or Biologic Waste, ash residue, contaminated soil and other materials requiring additional handling or treatment prior to disposal.

"Thermal and Biological Solid Waste-to-Fuel Conversion Facility" means a facility that processes solid waste, non-hazardous or hazardous waste through magnetic separation, wet separation, picking, drying, pressing, baling, mixing, shredding and/or crushing to produce a fuel to be utilized by an industrial boiler, cement kiln, lime kiln or other thermal conversion process.

"Unacceptable Waste" means any Solid Waste that may not be accepted at a Licensed Solid Waste Facility, including but not limited to:

- i. Infectious/Pathological or Biological Waste;
- ii. Chemotherapeutic waste;
- iii. Radioactive materials;
- iv. Hazardous Waste;
- v. Explosive and ordnance materials;
- vi. Drums, barrels, buckets and other containers unless lids have been removed and interiors are cleaned and free of residue;

- vii. Liquid waste, including used motor oil from commercial or industrial businesses;
- viii. Asbestos;
- ix. Yard Waste (Acceptable at Central Processing Facility);
 - x. Scrap Tires, including whole tires;
 - xi. Lead-acid batteries;
- xii. Motor vehicles and major motor vehicle parts weighing in excess of fifty (50) pounds such as transmissions, rear ends, frames, springs and fenders, agricultural and farm machinery and equipment, marine vessels and major parts thereof, and any other types of large equipment or machinery;
- xiii. Gas cylinders, unless empty, valve removed, punctured and delivered separate from other Solid Waste;
- xiv. Contaminated soil, including soil which contains petroleum-based products; and
- xv. Solid Waste generated outside the District, unless approved in writing by the District Coordinator.

"Unwanted" means to discard, abandon, or deliver to any location for subsequent collection and removal any residual solid or semisolid material as results from industrial, commercial, agricultural, and community operations, excluding earth or material from construction, mining or demolition operations, or other waste materials of the type that would normally be included in demolition debris, nontoxic fly ash, spent nontoxic foundry sand, and slag and other substances that are not harmful or inimical to public health, and includes, but is not limited to, garbage, Scrap Tires, combustible and non-combustible material, street dirt, and debris without payment to the Generator. For purposes of this section, "payment" means money received by a generator in excess of the costs incurred, attributed or imputed to the Generator relating to the collection or removal of the items.

"White Goods" means a portion of Solid Waste consisting of large appliance (i.e., weighing more than fifty (50) pounds) including the following: (i) air conditioners; (ii) clothes and drying machines; (iii) dish washers; (iv) furnaces and electric heaters; (v) hot water heaters; (vi) refrigerators and freezers; (vii) stoves, ovens, cook surfaces and microwave ovens; and (viii) residential trash compactors.

"Yard Waste" means all garden residues, leaves, grass clippings, shrubbery and tree pruning or cuttings less than one-quarter inch in diameter, and similar material.

RULE LS-02: CONSTRUCTION, MODIFICATION AND IMPROVEMENTS TO SOLID WASTE FACILITIES

No Person shall construct, enlarge, improve, Modify or replace any Solid Waste Facility until General Plans and Specifications of the proposed improvement or Modification have been submitted to and approved by the Board as complying with the Plan. General Plans and Specifications shall be submitted to the Board, attention: District Coordinator, 101 N. Third Street, Ironton, Ohio 45638. All such General Plans and Specifications shall be clearly marked as complying with the requirements of Rule Number LS-02 and Section 343.01(G)(2) of the Revised Code. Rule LS-02 does not apply to a Solid Waste Facility owned, operated, or to be owned or operated, by the District.

RULE LS-03: COMPLIANCE OF IMPROVEMENTS WITH DISTRICT SOLID WASTE MANAGEMENT PLAN

No Person shall construct, enlarge, improve, Modify or replace any Solid Waste Facility that does not comply with the Plan.

RULE LS-04: PROHIBITION ON DISPOSAL OF SOURCE SEPARATED SOLID WASTE RECYCLABLE MATERIAL

No Person shall deliver Solid Waste Recyclable Material that has been Source Separated by the Generator for disposal at a Sanitary Landfill without the prior written consent of the District.

RULE LS-05: PROHIBITION ON DISPOSAL OF PROCESSED SOLID WASTE RECYCLABLE MATERIAL

No Person shall deliver Solid Waste Recyclable Material that has been separated, processed or Recycled at a Solid Waste Recycling Facility, Legitimate Recycling Facility or Resource Recovery Facility for disposal at a Sanitary Landfill without the prior written consent of the District.

RULE LS-06: PROHIBITION ON DISPOSAL OF SOLID WASTE RECYCLABLE MATERIALS

All Source Separated Recyclable Materials shall be delivered for Recycling to a Solid Waste Recycling Facility, Legitimate Recycling Facility or Resource Recovery Facility.

RULE LS-07: PROHIBITION ON IMPROPER DISPOSAL OF SOLID WASTE

No Person shall deliver Solid Waste for Disposal to any Person, Property or facility other than a Solid Waste Facility, Sanitary Landfill or Solid Waste Transfer Station.

RULE LS-08: ENFORCEMENT

The Board may enforce these Rules pursuant to Revised Code Chapter 343.

C. Rule Approval Process

Proposed rules shall be adopted and enforced by the Board of Directors as provided in Section 343.01(G).

APPENDIX R BLANK SURVEY FORMS AND RELATED INFORMATION

Dear Commercial Business,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Lawrence Scioto Solid Waste Mgt. District's progress towards achieving Ohio's recycling goals. Your information will be combined with information submitted by other businesses and used to calculate the amount of material commercial businesses recycled in the Lawrence Scioto Solid Waste Mgt. District and Ohio, in 2018. Your company's response **will not** be reported individually; all data will be summarized by each North American Industry Classification Systems (NAICS) category.

For assistance completing this form or any questions related to the survey, please contact xxx, the Lawrence Scioto Solid Waste Mgt. District's Coordinator, at xxxxx.

Please complete and submit this survey no later than 4/1/2019.

Options for Returning the Completed Survey

- Email directly to xxxxx, Subject Line: 2018 Industrial Survey
- Mail to xxx at 101 North 3rd Street, Ironton, Ohio 45638

Instructions for Table A:

Please provide all information requested in **Table A** below. Even if your business does not currently recycle or is unable to report quantities of materials recycled, please complete **Table A**. Doing so will allow the Lawrence Scioto Solid Waste Mgt. District to contact you in the future to discuss your recycling needs.

Table A. Company Information			
Name:		County:	
Address:	City:	Zip:	
Contact Person:	Title:		
Email:	Telephone Number (include area code): () -		
Primary NAICS:	Secondary NAICS:	Number of full-time employees:	
Would you like to be contacted by your local solid waste management district for recycling assistance? <input type="checkbox"/> Yes <input type="checkbox"/> No			

Instructions for completing Table B:

Table B provides a list of common materials that are recycled by industrial facilities on Ohio. Please indicate the unit of each quantity of material that is reported (pounds, tons or cubic yards). Provide any comments related to each material as necessary. Please do not report any liquid waste, hazardous waste or construction & demolition debris.

The list in **Table B** is not all-inclusive. If your facility recycles a material that is not listed in **Table B**, please enter the name and quantity of that material on a line labeled **"Other"**. Some materials may not apply to your operation; simply enter "0" for those materials. Some of the materials are listed in broad categories. For example, "Plastics" include plastics #1-7, plastic films, etc. Please refer to the **"Materials Cheat Sheet"** attached to the end of this document for examples of materials and definitions.

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If you do not currently track this information internally, your solid waste hauler or recycling processor may be able to provide it upon request. The Lawrence Scioto Solid Waste Mgt. District may also be able to provide you with assistance.

APPENDIX S SITING STRATEGY

A. Definitions

Although the District does not anticipate the need to site a new solid waste facility, it has chosen to include a siting strategy in the event that a facility is needed, or to address the possibility that another entity decides to pursue locating a facility in Lawrence County or Scioto County. The District's Siting Strategy includes the following:

Submission and Review of Plans and Specifications and Application of Siting Strategy to Proposed Solid Waste Facilities, Maximum Feasible Utilization and Exemption of Existing in-District Solid Waste Facilities.

The following definitions shall apply to this section:

- a. Solid Waste Facilities shall mean all solid waste collection, storage, disposal, transfer, recycling, processing, and resource recovery facilities.
- b. Siting Strategy shall mean the process by which the Board of Directors (Board) shall review proposals for the construction or modification of any Solid Waste Facility and determine whether such proposal complies with the Plan Update.
- c. General Plans and Specifications shall mean that information required to be submitted to the Board for review for the construction or modification of any proposed Solid Waste Facility and includes, but is not limited to, a site plan for the proposed facility, architectural drawings or artists renderings of the proposed facility, the projected size and capacity of the proposed facility and all other information identified in this Siting Strategy.
- d. Applicant shall mean a person, Municipal Corporation, township or other political subdivision proposing to construct or modify a Solid Waste Facility within the District.
- e. Modify shall mean a significant change in the operation of an existing in-District Solid Waste Facility: (1) that requires the approval of the Director of the Ohio Environmental Protection Agency; or (2) that involves a change in the type of material, manner of operation, or activities conducted at the facility (i.e., a conversion of a legitimate recycling facility to a transfer station).

B. Purpose and Objective

The District's Siting Strategy for Solid Waste Facilities ensures that proposals to construct a new Solid Waste Facility within the District or modify an existing Solid Waste Facility within the District are in compliance with the Plan Update. The Board shall not approve the General Plans and Specifications for any proposed Solid Waste Facility or the modification of any existing in-District Solid Waste Facility where the construction and operation of the proposed facility, as determined by the Board, will:

- 1) have significant adverse impacts upon the Board's ability to finance and implement the Plan Update;
 - 2) interfere with the Board's obligation to provide for the maximum feasible utilization of existing in-District Solid Waste Facilities;
 - 3) materially and adversely affect the quality of life of residents within 300 feet of the proposed facility;
- or
- 4) have material adverse impacts upon the local community, including commercial businesses within 500 feet of the proposed facility and the adequacy of existing infrastructure to serve the proposed facility.

Except as otherwise provided herein, all proposed Solid Waste Facilities, whether to be sited by or on behalf of the District, or by or on behalf of any person, municipal corporation, township or other political subdivision, shall be

subject to this Siting Strategy and shall comply with the requirement to submit General Plans and Specifications to the District.

1. Siting Procedure Limited Exemption

Notwithstanding the foregoing requirement, existing in-District Solid Waste Facilities specifically identified in this Siting Strategy are not subject to this Siting Strategy unless the owner or operator of any such in-District Solid Waste Facility proposes a modification to the operation of the in-District Solid Waste Facility: 1) that requires the approval of the Director of the Ohio Environmental Protection Agency; or 2) that involves a change in the type of material, manner of operation or activities conducted at the facility (i.e., a conversion of a legitimate recycling facility to a transfer station).

2. Maximum Feasible Utilization of Existing In-District Solid Waste Facilities

The Board has determined that the owners and operators of existing in-District Solid Waste Facilities rely on market factors in the determination of whether to expand or modify the facilities or current operations and activities at such existing facilities. The private corporate decisions of those owners and operators determine and establish the maximum feasible utilization of those existing in-District Solid Waste Facilities and the limited exemption for such existing in-District Solid Waste Facilities from the application of this Siting Strategy permits the owners and operators of those facilities to determine the maximum feasible utilization of those facilities. Other than the limited exemption from the application of this Siting Strategy, the Board has no additional obligation with respect to the continuing operation or modification of those facilities.

C. Requirements

The District intends to require that General Plans and Specifications for all proposals to construct any new Solid Waste Facility within the District or modify any existing in-District Solid Waste Facility be submitted for a determination by the Board of whether such General Plans and Specifications and the proposals comply with the Plan Update. The District intends to adopt rules upon final approval of this Plan Update as follows:

RULE LS-02: CONSTRUCTION, MODIFICATION AND IMPROVEMENTS TO SOLID WASTE FACILITIES

No Person shall construct, enlarge, improve, Modify or replace any Solid Waste Facility until General Plans and Specifications of the proposed improvement or Modification have been submitted to and approved by the Board as complying with the Plan. General Plans and Specifications shall be submitted to the Board, attention: District Coordinator, 101 N. Third Street, Ironton, Ohio 45638. All such General Plans and Specifications shall be clearly marked as complying with the requirements of Rule Number LS-02 and Section 343.01(G)(2) of the Revised Code. Rule LS-02 does not apply to a Solid Waste Facility owned, operated, or to be owned or operated, by the District.

RULE LS-03: COMPLIANCE OF IMPROVEMENTS WITH DISTRICT SOLID WASTE MANAGEMENT PLAN

No Person shall construct, enlarge, improve, Modify or replace any Solid Waste Facility that does not comply with the Plan.

District rules are contained in Appendix Q of this Plan Update.

D. Procurement Implementation Siting Strategy

Unless otherwise provided herein, or an exemption or waiver from this requirement has been granted by the Board, the following procedure and process shall be followed in the event the construction of a new Solid Waste Facility or the modification of an existing in-District Solid Waste Facility is proposed within the District:

Step 1: Submittal of Plans and Specifications

Any person, municipal corporation, township or other political subdivision proposing to construct a new Solid Waste Facility or modify an existing in-District Solid Waste Facility shall:

a. Provide General Plans and Specifications of the proposed facility to the Board. Such General Plans and Specifications shall include, but may not be limited to, the following documents and information:

- I. a site plan for the proposed Solid Waste Facility;
- II. architectural drawings or artists renderings of the proposed Solid Waste Facility;
- III. availability of necessary utilities;
- IV. projected size and capacity of the proposed Solid Waste Facility;
- V. hours of operation;
- VI. anticipated source of solid waste or recyclable materials to be received at the proposed Solid Waste Facility. If recycling activities will be conducted at the proposed facility, a detailed description of the recycling activity including materials to be recycled, technology to be utilized to accomplish the separation and processing of the recyclable materials, the anticipated percentage of waste reduction anticipated from the operation of the facility and the identification of the market for the sale of the recyclable materials recovered at the facility must be submitted;
- VII. types and anticipated number of vehicles utilizing the proposed Solid Waste Facility on an hourly and daily basis;
- VIII. routes to be used by vehicles utilizing the facility and methods of ingress and egress to the facility; and
- IX. any other information necessary for the Board to evaluate whether the proposed Solid Waste Facility complies with each of the criteria listed below.

b. Adequately demonstrate to the Board that the construction or modification and subsequent operation of the proposed Solid Waste Facility will:

- I. be consistent with the goals, objectives, projections and strategies contained in the Plan Update;
- II. not adversely affect financing for the implementation of the Plan Update;
- III. not adversely affect the Board's obligation to provide for the maximum feasible utilization of existing in-District solid waste facilities;
- IV. be installed, operated and maintained to be harmonious and appropriate in appearance and use with the existing or intended character of the area;
- V. be adequately served by essential public facilities and services;
- VI. not create excessive additional requirements at public cost for public facilities or services;
- VII. not be detrimental to the economic welfare of the community;
- VIII. not involve the excessive production of traffic, noise, smoke, fumes or odors;
- IX. have vehicular approaches to the property that are designed not to create an interference with traffic;
- X. not result in the destruction, loss or damage of a natural, scenic, or historic feature of major importance; and
- XI. not adversely affect property values within the surrounding community.

The Applicant shall submit any additional information as the Board requests to establish, to the reasonable satisfaction of the Board, that the construction or modification and subsequent operation of the proposed Solid Waste Facility or proposed modification of an existing in-District Solid Waste Facility will comply with the Plan Update.

Step 2: Board Review

The Board shall conduct a review of the information submitted for the proposed Solid Waste Facility to determine whether the Applicant has adequately demonstrated that the proposed Solid Waste Facility will be constructed or modified and subsequently operated in compliance with the Plan Update and demonstrated that the impacts listed in Step I do not adversely affect the District, its residents and businesses. The Board may expend District funds to employ a consultant or consultants familiar with Solid Waste Facility construction and operation, land use planning

and solid waste planning to assist the Board in implementing this Siting Strategy and in its determination of whether a proposed Solid Waste Facility or modification of an existing in-District Solid Waste Facility complies with the Plan Update.

Within sixty days of receiving the General Plans and Specifications from an applicant, the Board shall make a determination as to whether the General Plans and Specifications submitted by the applicant contain sufficient information for the Board to complete its review of the proposal. In the event the Board determines that more information is necessary to complete its review of the proposal, the Board shall notify the Applicant of such request in writing within ten days.

Within ninety days of determining that the Applicant has submitted a complete set of General Plans and Specifications, the Board shall determine whether the proposal complies with the Plan Update and the criteria identified in Step 1 herein. The Board shall notify the Applicant of its decision in writing. While the Board has broad discretion regarding the approval of General Plans and Specifications for a proposed Solid Waste Facility or modification of an existing in-District Solid Waste Facility, it is the intent of this Siting Strategy that the Board shall not approve General Plans and Specifications for a proposed Solid Waste Facility unless the Board determines that the proposed Solid Waste Facility or modification of an existing in-District Solid Waste Facility complies with the Plan Update and the criteria identified in Step 1 herein.

Step 3: Development Agreement

In the event the Board determines that the proposed construction or modification and subsequent operation of a Solid Waste Facility complies with the Plan Update, the person, municipal corporation, township or other political subdivision proposing to construct or modify the Solid Waste Facility shall enter into a development agreement with the District which memorializes the obligations that are the basis of the Board's conclusion that the General Plans and Specifications demonstrate that the proposed facility or its modification complies with the Plan Update. The party proposing to construct a Solid Waste Facility shall have an ongoing obligation to comply with the Plan Update and the development agreement.

Waiver

The Board reserves the right to waive application of the requirement for the submission and Board approval of General Plans and Specifications, and any portion or all of the Siting Strategy or otherwise grant exceptions to the rules of the District, or unilaterally modify or amend the Siting Strategy if the Board concludes such waiver, modification or amendment is in the best interest of the District, its residents and businesses and will assist the Board in the successful implementation of the Plan Update and further District goals with respect to solid waste and waste reduction activities.

A determination by the Board to construct or modify any District-owned Solid Waste Facility shall be deemed to be in compliance with the Plan Update and the other requirements of these rules.

E. Waiver of Legitimate Recycling Facilities

The Board has a strong commitment to encourage the development of recycling and waste reduction activities that are consistent with the waste reduction, reuse and recycling goals as may be required by the Ohio Revised Code, the Ohio Administrative Code, the State Solid Waste Management Plan and the Plan Update. Upon adequate demonstration to the Board of the likelihood of attainment of certain waste reduction goals, the Board may waive application of the Siting Strategy for any facility determined by the Board as likely to qualify as a "legitimate recycling facility" as defined in Section 3745-27-01 (L)(2) of the Ohio Administrative Code.

In the event an Applicant desires a waiver from the application of the Siting Strategy for a legitimate recycling facility, the Applicant shall submit sufficient information to the Board regarding the proposed facility, the waste reduction method to be implemented, technology to be used in the operation of the facility, the source and type of waste to be received at the facility, the materials to be removed from the waste stream and the anticipated amount of waste reduction.

The Board shall review the proposal following the procedures and process in Step 2 of this Siting Strategy and determine whether the waste reduction standards required by OAC Section 3745-27-01(L)(2) are likely to be satisfied at the proposed facility. In the event the Board determines that such facility is likely to qualify as a legitimate recycling facility, the Board may grant a waiver of the application of the Siting Strategy to the proposed facility.

Such waiver may be made contingent upon the execution of a development agreement by which the proposed facility will be obligated to meet the proposed waste reduction standards on a continuing basis and such other obligations regarding operation of the facility as the Board shall require, including such recordkeeping and reporting requirements as may be necessary to establish compliance with the waste reduction goals. Failure to comply with the terms of any such agreement may result in the revocation of Board approval for operation of any such facility. As part of any such development agreement, the Board may require such bond or other assurances in such amounts as the Board determines, in its discretion, shall be necessary to assure that funds are available for the removal of the facility or conversion of the facility to a legal use in the event of non-compliance with waste reduction standards or other obligations as set forth in the development agreement.

APPENDIX T MISCELLANEOUS PLAN DOCUMENTS

During the process of preparing a plan, the policy committee signs three official documents certifying the plan. These documents are as follows:

1. *Certification Statement for the Draft Solid Waste Management Plan* –The Policy committee signs this statement to certify that the information presented in the draft solid waste management plan submitted to Ohio EPA is accurate and complies with the Format 4.0.
2. *Resolution Adopting the Solid Waste Management Plan* (adopted prior to distributing the draft plan for ratification) – The policy committee signs this resolution to accomplish two purposes:
 - Adopt the draft solid waste management plan.
 - Certify that the information in the solid waste management plan is accurate and complies with the Format 4.0.

The policy committee signs this resolution after considering comments received during the public hearing/public comment period and prior to submitting the solid waste management plan to political jurisdictions for ratification. The policy committee should not make any changes to the solid waste management plan after signing the resolution.

3. *Resolution Certifying Ratification of the Solid Waste Management Plan* – The policy committee signs this resolution to certify that the solid waste management plan was ratified properly by the political jurisdictions within the solid waste management district. The policy committee signs this resolution after the solid waste management plan is ratified and before submitting the ratified plan to Ohio EPA)

Other documents to include in Appendix T include:

- Public notices

Copies of notices sent to:

- adjacent SWMDs;
- the director of Ohio EPA;
- the 50 industrial, commercial or institutional facilities that generate the largest quantities of solid waste within the SWMD; and
- the local trade associations representing the industrial, commercial or institutional facilities generating the largest quantities of solid waste in the SWMD.

APPENDIX U RATIFICATION RESULTS

Table U-1 Ratification Results