



August 2, 2024

2026-2040 SOLID WASTE MANAGEMENT DISTRICT

Draft Plan

**Geauga-Trumbull Joint Solid Waste
Management District**

Prepared by:



TABLE OF CONTENTS

SECTIONS

SECTION I – Solid Waste Management District Information	i-1
---	-----

CHAPTERS

CHAPTER 1 Introduction	1-1
CHAPTER 2 District Profile	2-1
CHAPTER 3 Waste Generation	3-1
CHAPTER 4 Waste Management	4-1
CHAPTER 5 Waste Reduction and Recycling	5-1
CHAPTER 6 Budget	6-1

APPENDICES

APPENDIX A Miscellaneous Information	A-1
APPENDIX B Recycling Infrastructure Inventory	B-1
APPENDIX C Population Data	C-1
APPENDIX D Disposal Data	D-1
APPENDIX E Residential/Commercial Reduction and Recycling Data	E-1
APPENDIX F Industrial Reduction and Recycling Data	F-1
APPENDIX G Waste Generation	G-1
APPENDIX H Strategic Analysis	H-1
APPENDIX I Conclusions, Priorities, and Program Descriptions	I-1
APPENDIX J Reference Year Opportunity to Recycle and Demonstration of Achieving Goal 1	J-1
APPENDIX K Waste Reduction and Recycling Rates and Demonstration of Achieving Goal 2	K-1
APPENDIX L Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements	L-1
APPENDIX M Waste Management Capacity Analysis	M-1
APPENDIX N Evaluating Greenhouse Gas Emissions	N-1
APPENDIX O Financial Data	O-1
APPENDIX P Designation	P-1
APPENDIX Q District Rules	Q-1
APPENDIX R Blank Survey Forms and Related Information	R-1
APPENDIX S Siting Strategy	S-1
APPENDIX T Miscellaneous Plan Documents	T-1
APPENDIX U Ratification Results	U-1
APPENDIX V Inventory of Open Dumps and Other Disposal Facilities	V-1
APPENDIX W District Map	W-1

Section i. Solid Waste Management District Information

Table i-1. Solid Waste Management District Information

SWMD Name	Geauga-Trumbull Joint Solid Waste Management District
Member Counties	Geauga & Trumbull
Coordinator’s Name (main contact)	Jennifer Jones
Job Title	Director
Street Address	5138 Enterprise Blvd. NW
City, State, Zip Code	Warren, OH 44481
Phone	(330) 675-2673
Fax	(330) 675-2672
Email address	Jenn@startrecycling.com
Webpage	https://startrecycling.com/about/

Table i-2. Members of the Policy Committee

Member Name	Representing
Geauga County	
Ralph Spidalieri	County Commissioners
Randal Sharpe	Municipal Corporations
Kristina O’Brien	Townships
J. Jeffrey Cameron	Health District
Mitch DeFranco	Generators
Amanda Meitz	Citizens
Henry Duchscherer	Public
Trumbull County	
Denny Malloy	County Commissioners
Mayor Doug Franklin	Municipal Corporations
Tom Shay	Townships
Frank Migliozi	Health District
Ben Kyle	Generators
Ken Kubala	Citizens

Edward Anthony	Public
Additional Representatives	
Mark Finamore	Public At Large (Trumbull County)

Table i-3. Chairperson of the Policy Committee

Name	Kristina O'Brien
Street Address	17826 Chillicothe Road
City, State, Zip Code	Chagrin Falls OH, 44023
Phone	(440) 543-9871
Fax	None
Email address	kobrien@bainbridgetwp.com

Table i-4. Board of County Commissioners

Commissioner Name	County
James W. Dvorak	Geauga
Timothy C. Lennon	Geauga
Ralph Spidalieri	Geauga
Mauro Cantalamessa	Trumbull
Niki Frenchko	Trumbull
Denny Malloy	Trumbull

Technical Advisory Committee

A Technical Advisory Committee was not used to prepare this plan update and has not been appointed.

Consultant Information

Identification of consultants for plan preparation: The SWMD used GT Environmental to prepare the solid waste management plan.

Consulting Firm:



GT Environmental, Inc.
 2400 Corporate Exchange Dr., Suite 150 Columbus, OH 43231
 (614) 794-3570

Principal Consultant: Jamie Zawila

CHAPTER 1. INTRODUCTION

A. Brief Introduction to Solid Waste Planning in Ohio

In 1988, Ohio faced a combination of solid waste management problems, including rapidly declining disposal capacity at existing landfills, increasing quantities of waste being generated and disposed of, 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 dramatically revised Ohio's 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 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

Because 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. 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 the county commissioners from all 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

¹ Counties 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.

² In 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.

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.

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 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 Geauga-Trumbull Joint Solid Waste Management District (the District) was established on April 19th, 1993, after the withdrawal of Ashtabula County from the Ashtabula, Geauga, and Trumbull Joint Solid Waste Management District. The District operates from one centralized location located in the City of Warren, Ohio. The Trumbull County location is a campus for the solid waste district management system. The campus has administrative offices, and a permanent HHW recycling facility, which operates year round and serves as a drop-off for electronics, appliances, and drop-off recyclables. In 2022, a second facility was built in Geauga County providing another permanent HHW recycling facility and services.

The District does not have an active permitted municipal solid waste landfill, meaning it relies on neighboring districts for landfill disposal. All waste is hauled or transferred out of the district for disposal. The District's waste disposal is fairly evenly distributed between direct haul to landfills or taken to transfer stations before disposal. The District primarily utilizes Carbon Limestone Landfill in

Mahoning County and Ohio Valley Waste's transfer station in Trumbull County as the facilities to manage its waste. Waste collection throughout the District is either by contract, self-hauled by political jurisdictions or individual residents, or by subscription (residents subscribe with a private service company). The District operates in an open market system, which means customers have a choice of any waste hauler because the system is open to competition.

The District continues to prioritize work in a cost-conscious manner, using a per-ton contract fee to support House Bill 592 programming. The District has levied a \$5.50 per ton fee that has remained unchanged since 2007. Historically, the contract fee has secured roughly \$1.7 million which is used on programming to promote recycling, waste reduction, and proper waste disposal from all households, retail locations, industrial locations, and schools. Based on a financial analysis conducted in *Appendix O*, the District will raise this per-ton fee to \$7.50. At the time this raise is anticipated to take place, the District will have held its contract fee stagnant for nearly 20 years. Rising costs to provide recycling services such as drop-off locations and hard-to-recycle material collection paired with lower recycling revenue markets and inflation are the primary drivers necessitating the fee increase.

The District contracts services with the private sector to provide drop-off recycling infrastructure throughout both counties for residents to have recycling opportunities. Curbside recycling is secured through political jurisdiction contracts or residents directly subscribing to their service provider. Hard-to-recycle materials such as HHW, electronics, and appliances are directed to the HHW facilities in both counties. The District offers political jurisdictions scrap tire grants.

The District offers numerous recycling programs designed to assist and educate the residential, commercial, and industrial sectors in diverting solid waste from the landfill. The District continues to work towards being a key resource for disposal and recycling information for its residents and commercial businesses. In the reference year of 2021, the District had a residential/commercial diversion rate of 24.5% and expects to be at or above the state goal of 25% in the first year of the planning period.

The District's role is to administer the programs in the solid waste management plan. These programs reduce reliance on landfills through diversion. Equally important is ensuring the landfills used will have adequate capacity for the waste that does not get diverted. Over the next 15 years, the District is planning to continue existing programming as well as expand service options for communities lacking curbside recycling.

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), which 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 the 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 the Ohio EPA regarding the implementation of the SWMD's solid waste management plan.

SWMDs are encouraged but not required to demonstrate they 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, providing evidence the approved Solid Waste Plan is implemented each year.

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 is a two-county District including Geauga and Trumbull Counties. Geographically located in northeastern Ohio, the total District population is roughly 300,000. Geauga County is part of the Cleveland-Elyria-Mentor metropolitan statistical area and Trumbull County is part of the Youngstown-Warren-Boardman metropolitan statistical area. Historically, Trumbull County has played a large role in Ohio manufacturing. Geauga County's population is expected to grow minimally while Trumbull County is expected to decline in part due to the continued decline in manufacturing jobs in the area.

The majority of District residents live in townships (64%) and cities (29%). Roughly 7% of residents live in villages. Warren is the District's largest city, with about 13% of residents living within its boundaries.

The Office of Research generally defines the District as predominantly rural¹. The land use/cover is broken down into the following categories:

- Developed, Low Intensity: 15%
- Developed, High Intensity: 2 %
- Barren: 0 %
- Forest: 43%
- Grassland: 2%
- Pasture: 20%
- Cultivated Crops: 8%
- Wetlands: 8%
- Open Water: 2%

2) County Overview

Geauga County is 40 miles east of Cleveland. It spans just over 400 square miles with the most populous areas encompassing the western half. There are two US highways in Geauga County. US Route 322 connects Pennsylvania to Cleveland and cuts through the northwest corner of the County. US Route 422 runs through the southern portion of the county and provides a route connecting Warren and Youngstown in Trumbull County. State Route 44 runs north-south through the middle of the County. Chardon City is the seat of the County and had a population of 5,200 in the reference year. By 2050, the Ohio Department of Development projects a nearly 8% increase in population from 2020 to 2050².

Trumbull County sits on the border of Pennsylvania. It spans roughly 640 square miles with the most populous areas encompassing the southern portion where the cities of Warren, Niles, and Girard are located. Two state routes are present in Trumbull County, State Route 5 and 11, providing access to Youngstown in Mahoning County and Warren. Trumbull County hosts one of Kent State University's regional campuses with roughly 2,500 students. Warren City is the seat of the County and had a population of 38,800 in the reference year. By 2050, the Ohio Department of Development projects a nearly 20% decrease in population from 2020 to 2050.

B. Population

1) Reference Year Population

Ohio law requires that the entire population of a municipality located in more than one solid waste management district is added to the solid waste management district containing the largest portion of the jurisdiction's population. The District has two communities that reside predominantly in another county and therefore are subtracted from the District's total population. The communities of Hunting Valley Village and

¹ Ohio Department of Development, Geauga and Trumbull County Profile. <https://development.ohio.gov/about-us/research/county/county-trends>

² Ohio Department of Development, Projected 2050 Ohio County Populations, <https://development.ohio.gov/static/research/pop1/Projected-2050-Ohio-County-Populations.pdf>

Youngstown City are subtracted from the District’s population, resulting in a 135-person subtraction from the total population.

Table 2-1 presents the adjusted population, the largest political jurisdiction, and the population of the largest political jurisdiction in the SWMD during the 2022 reference year:

Table 2-1. Population of the District in 2022

County		Largest Policial Jurisdiction		
Name	Population	Community Name	Population	Percent of Total County Population
Geauga	95,541	Bainbridge Township	12,994	14%
Trumbull	200,009	Warren city	38,764	19%

Source(s) of information: Ohio Development Services Agency, “2021 Population Estimates by County, City, Village, and Township.”

2) *Population Distribution*

Both Counties have a majority of their populations residing in unincorporated townships. Geauga County has 86% of the population living in these areas while Trumbull has 54% of the population. Trumbull County has a sizeable population living in cities. Both Counties have similar populations living in villages.

Table 2-2: Population Distribution

County	Percent of Population in Cities	Percent of Population in Villages	Percent of Population in Unincorporated Township
Geauga	5%	9%	86%
Trumbull	40%	6%	54%

3) *Population Change*

According to the U.S. Census Bureau, Geauga County experienced a large increase in population in the late 1990s into the 2000s which has since slowed. Trumbull County has seen a consistent decrease over the same period. The Ohio Department of Development (ODOD) projects an increase to 103,000 residents in 2050 in Geauga County, a nearly 8% increase from 2020. ODOD also projects a 20% decrease in population for Trumbull County to 162,000 in 2050. ODOD provides population projections for every five years. To estimate the population in between the five-year increments, linear interpolation was used.

4) *Implications for Solid Waste Management*

Per capita waste generation is projected to increase. In 2022, per capita waste generation was 6.67 pounds per person per day. This is projected to rise to 7.82 pounds per person per day by 2032 where projections flatline. The drivers for this increase are both that the population is decreasing, and waste generation (primarily waste disposal) is increasing. This combination leads to an increasing per capita generation. Population affects waste generation rates but factors of population growth such as income, people per family, and economic activity are also contributing factors. Higher-income households typically produce

more waste; however, they also tend to participate in recycling activities more often than lower-income households. These factors are all simultaneously involved and affect each other, creating a dynamic system that is challenging to predict. The District has generated between 290,000 tons and 385,000 tons of residential/commercial waste historically over the last five years. In the reference year, 360,000 tons were generated. Generation is projected to steadily increase over the planning period, reaching 410,000 tons in 2032 when projections flatline.

C. Profile of Commercial and Institutional Sectors

There were approximately 6,164 commercial businesses located in the District according to the US Census Bureau³. The largest employment sectors are retail trade, other services, and health care & social assistance. The District’s employment sectors are divided into North American Industry Classification System (NAICS) code classifications. **Table 2-3** shows the number of commercial establishments by NAICS code.

Table 2-3 Commercial Establishments

NAICS Code	NAICS Description	Number of Commercial Establishments	Percent of Total Establishments
11	Agriculture, forestry, fishing and hunting	19	0%
22	Utilities	10	0%
23	Construction	787	13%
42	Wholesale trade	331	5%
44-45	Retail trade	928	15%
48-49	Transportation and warehousing	205	3%
51	Information	71	1%
52	Finance and insurance	336	5%
53	Real estate and rental and leasing	230	4%
54	Professional, scientific, and technical services	565	9%
55	Management of companies and enterprises	32	1%
56	Administrative and support and waste management and remediation services	461	7%
61	Educational services	75	1%
62	Health care and social assistance	788	13%

³ U.S. Census Bureau, <https://data.census.gov/>

NAICS Code	NAICS Description	Number of Commercial Establishments	Percent of Total Establishments
71	Arts, entertainment, and recreation	101	2%
72	Accommodation and food services	559	9%
81	Other services (except public administration)	666	11%

Source: 2020 County Business Patterns. U.S. Census Data.
 Note: Data from 2022 was not available as of this report.

D. Profile of Industrial Sector

The following table presents the major industrial sector locations in the District. A vast majority of industrial businesses are located in the southern tip of Trumbull County. According to the U.S. Census Bureau, a total of 381 industrial businesses are in the District.

Table 2-5 Top Industrial Companies

Community	Number of Industries
Warren	146
Middlefield	93
Niles	70
Chardon	53
Girard	39

Source: U.S. Business Database. Rep. Reference USA

E. Other Characteristics

Most of the District’s population base lives in unincorporated townships. Geauga County especially has a high percentage of residents in townships, 86% compared to Trumbull’s 54%. With a majority of the population living in low-density rural areas, challenges in providing curbside recycling are present. The District provides drop-off recycling locations and private haulers offer subscription curbside recycling services to residents in these areas but participation is difficult to track. This gap is one of the focuses of the District during this planning period. Emphasis is to be placed on facilitating new curbside recycling programs where feasible throughout the District.

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 District's Policy Committee needs to understand the amounts and types of waste the SWMD will generate before it can make decisions regarding how to manage the waste. Thus, the District 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 District'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. In order to calculate how much waste was generated, the District added the quantities of waste disposed of in landfills and reduced/recycled.

Reduction and recycling data was obtained 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 District relies upon an entity's ability and willingness to provide data. When entities do not respond to surveys, only a partial picture of recycling activity can be developed. How much data the District 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 District also obtains disposal information from facilities that are under contract, authorizing them to receive waste generated within the District.

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 the Reference Year

Waste generation is the total amount of waste generated in a given year. It includes the amount of waste disposed of in landfills as well as the amount of waste that is diverted away from landfills, such as composted waste, recycled waste, etc. The sum of waste disposed, and waste diverted is the total amount of waste generated.

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

Table 3-1 below presents the District’s waste generated in the reference year. The amount generated is defined by the tons disposed of in landfills plus the tons recycled, composted, and otherwise diverted from landfill disposal.

Table 3-1 Solid Waste Generated in the Reference Year

Type of Waste	Quantity Generated (tons)
Residential/ Commercial	359,508
Industrial	57,965
Excluded	0
Total	417,472

1) *Residential/Commercial Waste Generated in Reference Year*

The residential/commercial sector generated nearly 360,000 tons of solid waste during the reference year. This sector is the largest generator in the District, generating 86% of all the waste in 2022. With a population of 295,550, the per capita waste generation rate is 6.67 pounds per person per day (PPD).

Figure 3-1 Benchmarked Residential/Commercial Generation Rate

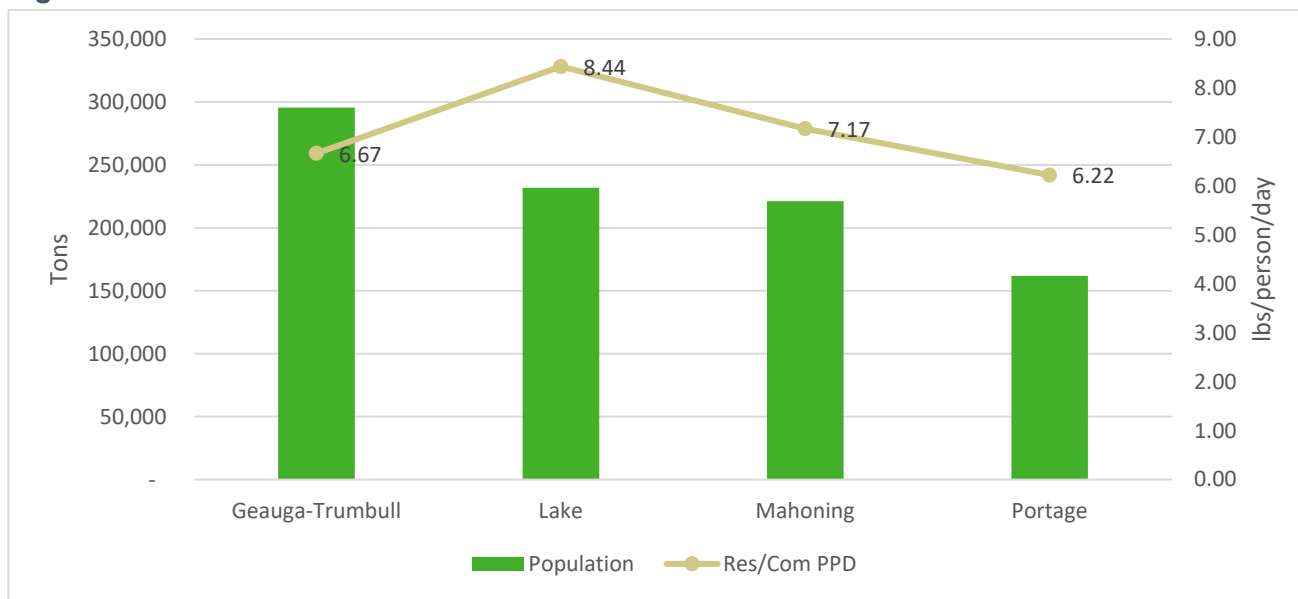
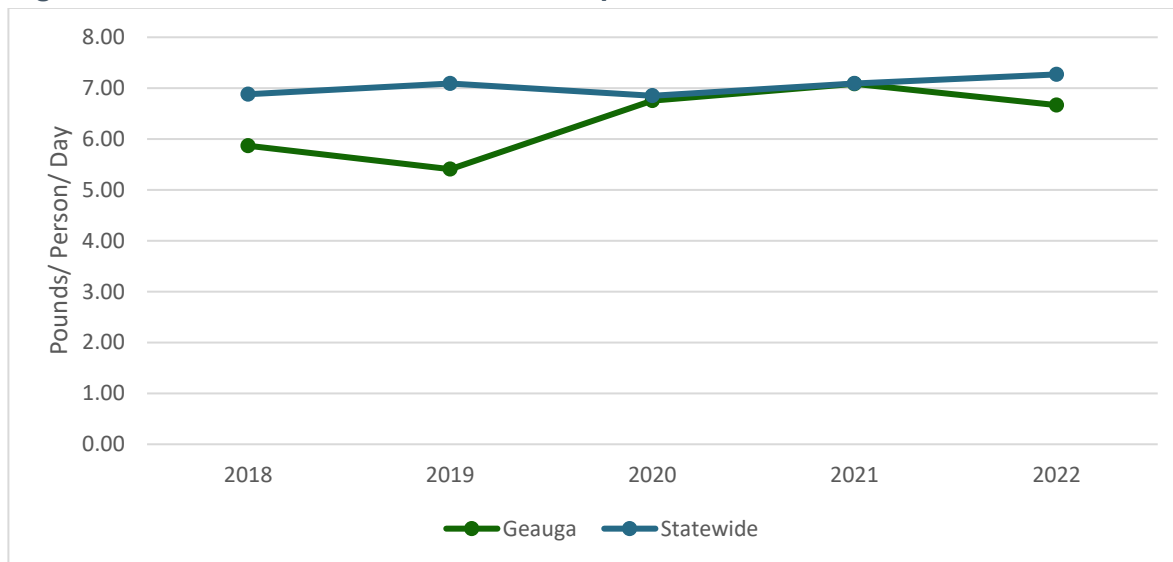


Figure 3-1 benchmarks three regional Districts. The statewide residential/commercial generation for 2022 was approximately 7.27 PPD. The District’s 6.67 per capita generation rate is the second lowest among the benchmarked Districts.

Figure 3-2: Residential/Commercial Per Capita Generation



Source: Ohio EPA Annual SWMD Disposal, Recycling, and Generation reports.

The District’s historical residential/commercial generation per capita data was compared to the Ohio EPA’s statewide average data. As seen in **Figure 3-2**, the District’s per capita generation rate falls just under the State average. The District saw an increase in the generation rate from 5.87 pounds per person per day in 2018 to 6.67 in 2022. The District’s total population has grown from 292,500 to 295,500 in those five years.

The District’s diversion rate was 24.5% in the reference year, just below the state goal of 25% diversion. With the District’s planned programming detailed in this plan, the District believes it will reach this goal and remain above it throughout the planning period.

A little under a quarter of the residential/commercial waste generated was diverted from landfills. The remaining 75% of the waste generated was sent for disposal. The District relies on regional landfills to manage waste to be disposed of. Approximately 55% of waste to be disposed of is first sent to a transfer station before ultimately being disposed of at landfills. The District sent 67% of all waste transferred to Ohio Valley Waste’s transfer station in Trumbull County. From here, waste is landfilled at Carbon Limestone Landfill. Including waste first transferred and waste direct hauled, 61% of the District waste disposal is sent to Carbon Limestone Landfill.

The District’s main points of diversion data are reported from Ohio EPA Compost Data (38%), Internal District Hauler Reporting (16%), and Ohio EPA Commercial Retail Data (11%). The District plans to put more emphasis on the commercial surveys annually to gather data to reach Goal 2.

2) Industrial Waste Generated in Reference Year

In 2022, the District generated almost 60,000 tons of industrial sector waste generation. Most of this was waste disposed, the District still surveys its industrial sector for recycling data, though emphasis is placed on the residential/commercial sector. In the reference year, the industrial sector accounted for 14% of all waste generated.

3) *Excluded Waste Generated in Reference Year*

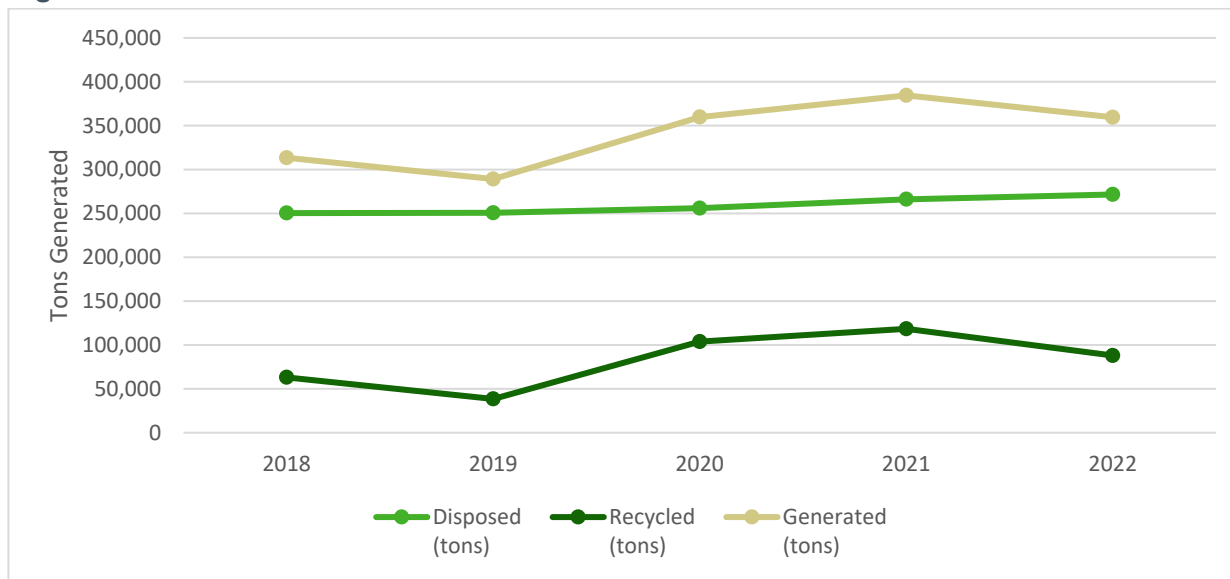
The District generated 8,614 tons of excluded waste in the reference year. Historically, this waste stream makes up less than 5% of the total waste stream. Per Ohio EPA Format 4.1, if this stream is under 10% of the total waste it does not need to be included in projections and calculations. Therefore, it is not included in projections throughout the planning period.

B. Historical Waste Generated

1) *Historical Residential/ Commercial Waste Generated*

Over the past five years, the residential/commercial sector disposed of an average of 258,000 tons annually while diverting about 82,000 tons annually. Over this time period, the District’s diversion rate hovered between 20% and 30% with the exception of 2019 which recorded a 13% diversion rate. The District is predicting increases in waste disposal and recycling. The District expects to be able to reach and maintain diversion levels sufficient enough to meet the 25% state diversion goal through the planning period. The residential/commercial per capita generation in 2022 was 6.67 pounds/person/day and is expected to rise to 7.84 pounds/person/day in 2032, after which projections flatline.

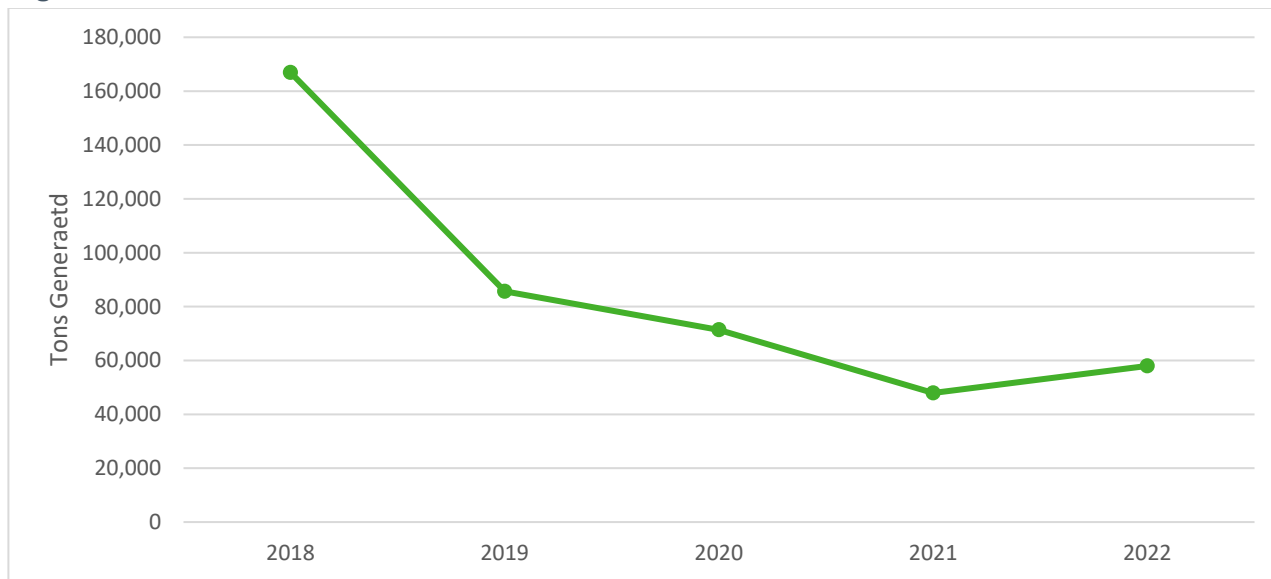
Figure 3-3: Historical Residential/Commercial Generation: 2018 – 2022



2) *Historical Industrial Waste Generated*

The District generated relatively little industrial waste in the reference year. As mentioned, the District surveys the industrial sector for its recycling quantities but with less emphasis on it compared to other sectors. In 2018, the District generated 166,000 tons of industrial waste split evenly between disposal and recycling waste. Since then, the District’s industrial waste generation has declined in part due to the survey efforts being focused on the residential/commercial sectors. In the reference year, 58,000 tons of waste were generated of which 75% of this waste was disposed.

Figure 3-4: Historical Industrial Generation: 2018 – 2022



3) *Historical Excluded Waste Generated*

Excluded waste makes up less than 10% of the waste generation from the District historically. In 2022, there were roughly 9,000 tons of excluded waste generated by the District. These have been excluded from projections per Format 4.1.

C. Waste Generation Projections

Table 3-2 shown below demonstrates that waste generation during the first six years of the planning period is expected to remain at similar levels as waste generation for the reference year 2022.

Table 3-2 Waste Generation Projections

Year	Residential Commercial Waste	Industrial Waste	Excluded Waste	Total
2026	380,621	67,451	0	448,072
2027	385,388	70,126	0	455,514
2028	391,639	72,935	0	464,574
2029	396,681	75,884	0	472,565
2030	401,877	78,981	0	480,858
2031	405,301	82,233	0	487,534

Residential/Commercial Waste Projections

Waste generation projections were estimated by analyzing historical trends in the District’s waste generation, disposal, and recycling. The waste disposal analysis in Appendix D projects an annual increase of about 1% for the residential/commercial sector. This was based on a 10-year historical summary where the average percent change over that time period was 2%. To be conservative, the District used a 1% annual increase for its projections. Using this model, the District’s residential/ commercial

sector is projected to reach roughly 300,000 tons of disposed material in 2032 after which projections flatline.

The analysis in Appendix E looks at the various recycling activities in Geauga and Trumbull Counties and the reported totals. After projecting all recycling activities separately, the cumulative projection for recycling is expected to fall within historical ranges, increasing through the planning period. The District expects to be above the 25% residential/commercial diversion goal through the planning period.

The total projected residential/commercial waste generation (disposal plus recycling) for the District is expected to reach roughly 405,000 tons by 2031. A majority (300,000 tons) is expected to be from the waste disposed, with the remainder (110,000 tons) expected to come from recycling activities.

Industrial Waste Projections

Based on a ten-year historical analysis, the average annual percent change was a decline of 1.4%. However, the District expects to see industrial disposal rise over the planning period due to the District moving away from utilizing auto fluff as ADC in landfills. Landfills that currently utilize auto fluff as ADC may request the waste be exempted. This is evaluated at each contract term and is determined by the Board of County Commissioners to accept or deny. At this time, no exemptions were factored into waste projections. In recent years, the District has used roughly 4,000 tons a month of autofluff and is expected to return to historical tonnage levels during the planning period. The District is projecting a 5% annual increase until 2032 for industrial waste. Using this value steadily returns the District to historic levels.

With the removal of the industrial diversion goal in the 2020 State Plan, the District is not prioritizing surveying this sector. Because of this and the volatility of historic data, the District will hold projections at the 2022 baseline year value of roughly 14,000 throughout the planning period. The District expects the annual hauler reporting to be the primary source of industrial diversion data.

Excluded Waste Projections

Due to the low amount of excluded waste historically, this waste stream was not projected.

CHAPTER 4. WASTE MANAGEMENT

Purpose of Chapter 4

Chapter 3 provided a summary of how much waste the District generated in the reference year and how much waste the Policy Committee estimates the District will generate during the planning period. This Chapter summarizes the Policy Committee's strategy for how the District will manage that waste during the planning period.

A District must have access to facilities that can manage the waste the District 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 District during the planning period.

To ensure the District has access to facilities, the solid waste management plan identifies the facilities the District expects will take the District's trash, compost, and recyclables. Those facilities must be adequate to manage all of the District's solid waste. The District 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 District. Further, identified facilities can be any combination of facilities located within and outside of the District (including facilities located in other states).

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

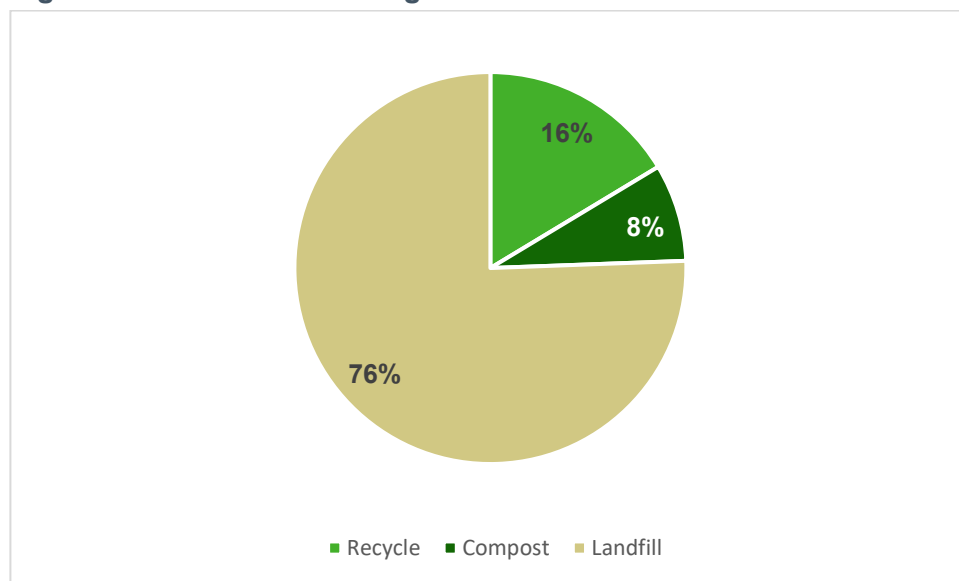
As of 2021, Ohio has more than 40 years of remaining landfill capacity. That is more than enough capacity to dispose of all of Ohio's waste. However, landfills are not located in a manner to geographically serve all areas of the state. Therefore, there is still the potential for a regional shortage of available landfill capacity, particularly if an existing landfill closes. If that happens, then the Districts in that region would likely rely on transfer facilities to transport waste to an existing landfill instead of building a new landfill.

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

A. Waste Management Overview

The District manages waste through a combination of landfills, recycling programs and facilities, transfer stations, and composting facilities. **Figure 4-1** below depicts total waste generation management in the reference year. The majority of the total waste generated by the District is managed through landfill disposal. The majority of waste generation from the District is derived from the residential/commercial sector at 86%, with the industrial sector comprising 14% of total generation.

Figure 4-1 Total Waste Management Method



Based on historical analysis the future waste projections, shown for the first six years of the planning period in **Table 4-1** below, demonstrate an increase in recycling tonnages and minor increases in the total waste landfilled. Overall waste generation is projected to increase through the first six years of the planning period.

Table 4-1 Methods for Managing Waste

Year	Generate	Recycle	Compost	Transfer to Landfill	Direct Haul to Landfill
2022	417,471	68,309	33,607	173,655	141,901
2026	448,072	78,396	33,607	184,943	151,125
2027	455,514	80,337	33,607	187,970	153,599
2028	464,574	83,735	33,607	191,087	156,145
2029	472,565	85,894	33,607	194,296	158,768
2030	480,858	88,179	33,607	197,602	161,470
2031	487,534	88,663	33,607	201,010	164,254

Source:
 Generate: Appendix G-1 and G-2
 Recycle: Appendix G-1 and G-2 subtracting compost
 Compost: Appendix E-7 and E-8
 Transfer: Appendix: D-2 and D-6
 Landfill: Appendix D-1 And D-6

Landfill capacity, demonstrated in Appendix M, remains abundant and exceeds the available volume of waste generated locally. Consequently, tipping fees are low, and landfills continue to be the most economically feasible disposal option. The District is not expecting changes in the structure of the waste management system throughout the planning period. Following historical trends, it is expected waste will be similarly managed with minor changes in tonnages throughout the planning period.

B. Profile of Waste Management Infrastructure

1) Solid Waste Management Facilities

Landfills

There are no active permitted solid waste disposal facilities in Geauga or Trumbull Counties. Fortunately, affordable disposal capacity is available within proximity. The volume of waste each landfill receives is dependent on its own collection and transport capabilities or upon its relationships with independent haulers, and its permit to accept approved daily waste tons.

As discussed in Appendix D, the District used 15 out-of-district landfills and three out-of-state landfills. The out-of-state landfills are located in Pennsylvania. Roughly 66% of the waste direct hauled to these landfills is from the residential/commercial sector. Most landfills are owned and operated by the private sector. There were no captive landfills used. The District sends 55% of its direct hauled waste to Carbon Limestone Landfill in Mahoning County.

Transfer Stations

There are two solid waste transfer facilities in the District, both located in Trumbull County. Combined, these two facilities take 80% of the District's transferred waste. Ten out-of-district transfer stations were used and two out-of-state transfer stations were used by the District in the reference year. The District does not rely on regional facilities for transferring waste like it does for landfill disposal.

Compost Facilities

The District used a total of 11 compost facilities in the reference year ranging from Class III to Class IV. Eight of these facilities are located within the District. The District sent 24,000 tons (73%) of its yard waste to Hauser Services in Geauga County.

Processing Facilities

The District utilizes out-of-district material recovery facilities (MRFs) to process the recyclable materials generated and collected. A MRF is a specialized facility that receives, separates, and prepares recycling materials for end market users. Materials collected through curbside recycling programs and drop-off locations are sent to MRFs for processing. Six regional facilities accept recyclables and are available for use by the District. Each have complex sorting equipment and are able to process recyclables for end markets.

Historically, the District utilized the now-closed MRF in Akron owned by Waste Management, sending roughly 5,000 tons of commingled recyclables annually to this facility for processing. The District relies on Ohio EPA to secure tonnage numbers from the MRFs throughout Ohio. In 2022, multiple MRFs

processed materials from the District. However, they did not directly report to Ohio EPA and therefore are not recorded.

2) Waste Collection

Municipal solid waste is collected from residents, businesses, and institutions and transported to landfills by several private waste operators. There is an open market for the collection of municipal solid waste. This system allows for competition to occur between companies and gives residents or businesses the freedom to select their desired level of service. Waste haulers contract directly with individual homeowners and commercial establishments. However, municipalities secure these services for their residents through a competitive bidding process.

C. Solid Waste Facilities Used in the Reference Year

1) Landfill Facilities

Table 4-2 Landfill Facilities Used by the District in the Reference Year

Facility Name	Location		Waste Accepted from District (tons)	Percent of all District Waste Disposed	Remaining Capacity (years)
	County	State			
<i>In-District</i>					
N/A					
<i>Out-of-District</i>					
Geneva Landfill	Lake	OH	21,954	15%	33
Hancock County Landfill	Hancock	OH	0	0%	14
Countywide RDF - Republic Services	Stark	OH	1,515	1%	60
Mahoning Landfill Inc	Mahoning	OH	17,172	11%	43
American Landfill, Inc.	Stark	OH	197	0%	86
County Environmental of Wyandot	Wyandot	OH	2	0%	104
Athens-Hocking Landfill	Athens	OH	140	0%	46
Rumpke of Northern Ohio Inc Noble Road Landfill	Richland	OH	22	0%	13
Port Clinton Landfill Inc	Ottawa	OH	1	0%	87
Evergreen Recycling & Disposal	Lucas	OH	4	0%	36
Lorain County II Landfill LLC	Lorain	OH	350	0%	14

Facility Name	Location		Waste Accepted from District (tons)	Percent of all District Waste Disposed	Remaining Capacity (years)
	County	State			
Apex Environmental, LLC	Jefferson	OH	42	0%	18
Carbon Limestone Landfill LLC	Mahoning	OH	82,658	55%	37
Kimble Sanitary Landfill	Tuscarawas	OH	414	0%	30
Lake County Solid Waste Facility	Lake	OH	23,699	16%	23
Out-of-State					
Seneca Landfill	Butler	PA	1,787	1%	Data not Available
Imperial Landfill		PA			Data Not Available
Valley Waste		PA			Data Not Available
Total			149,959	100%	644

Note: Table does not include transferred waste that was landfilled.

2) Transfer Facilities

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

Facility Name	Location		Waste Accepted from District (tons)	Percent of all District Waste Transferred	Landfill Where Waste was Taken for Disposal
	County	State			
In-District					
Girard Transfer Station	Trumbull	OH	23,623	14%	Seneca Landfill
Ohio Valley Waste Warren	Trumbull	OH	116,092	67%	Carbon Limestone Landfill
Out-of-District					
Cleveland Transfer/Recycling Station	Cuyahoga	OH	15,604	9%	American Landfill
Kimble Transfer & Recycling - Canton	Stark	OH	361	0%	Kimble Sanitary Landfill
Kimble Transfer & Recycling - Twinsburg	Summit	OH	2,349	1%	Kimble Sanitary Landfill
Rumpke Waste Inc Broadview Heights Transfer Facility	Cuyahoga	OH	5,979	3%	Noble Road Landfill

Facility Name	Location		Waste Accepted from District (tons)	Percent of all District Waste Transferred	Landfill Where Waste was Taken for Disposal
	County	State			
Harvard Road Transfer Station	Cuyahoga	OH	1,216	1%	Noble Road Landfill
Browning Ferris Industries of Ohio, Inc- Glenwillow	Cuyahoga	OH	8,962	5%	Countywide RDF - Republic Services
<i>Out-of-State</i>					
Tri-County Industries Transfer Station	Mercer	PA	50	0%	Data not Available
Total			174,238	100%	

3) Composting Facilities

Table 4-4 Composting Facilities Used by the District in the Reference Year

Facility Name	Location (County)	Material Composted (tons)	Percent of all Material Composted
<i>In District</i>			
Mapledale Farm Inc	Geauga	672	2%
Midwest Mulch	Geauga	4,631	14%
TRC Landscape Service Inc	Geauga	2,941	9%
Abate Landscaping	Geauga	73	0%
Sagamore Soils Compost	Geauga	15	0%
Hauser Services	Geauga	24,009	73%
Van Ness Inc	Geauga	0	0%
City of Warren Water Pollution Control Center	Trumbull	487	1%
<i>Out-of-District</i>			
Sagamore Soils Twinsburg Rd Compost Facility	Summit	64	0%
City of Wickliffe Composting Facility	Lake	29	0%
Pro Tree Service	Lake	0	0%
Total		32,921	100%

4) Processing Facilities

Table 4-5 Processing Facilities Used by the District in the Reference Year

Name of Facility	Location		Facility Type	Recyclables Accepted from District (tons)
	County	State		
<i>In-District</i>				
NA				
<i>Out-of-District</i>				
Rumpke Recycling - Dayton	Montgomery	Ohio	MRF	5
<i>Out-of-State</i>				
NA				
Total				5

D. Use of Solid Waste Facilities During the Planning Period

An estimated 291,000 tons of municipal solid waste (not including excluded waste) is expected on average annually from 2022 through the end of the planning period. Projections flatline after the sixth year of the planning period. An estimated net disposal of about 5.5 million tons is needed in landfill capacity for the duration of the planning period.

E. Siting Strategy

The solid waste management plan must demonstrate that the District will have access to enough capacity at landfill facilities to accept all of the waste the District 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 could conclude that it is in the District's best interest to construct a new solid waste landfill facility to secure disposal capacity. In that situation, Ohio law (ORC Section 3734.53(A)(8)) requires the policy committee to develop a strategy for identifying a suitable location for the facility. The policy committee must include its siting strategy in the solid waste management plan. See Appendix S for siting strategy details.

F. Designation

Ohio law gives each District the ability to control where waste generated from within the District can be taken. This provision for disposal is generally referred to as flow control. In Ohio, Districts establish flow control by designating facilities. Districts can designate any type of solid waste facility, including recycling, transfer, and landfill facilities.

Even though a District 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 District 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 facilities in a solid waste management plan, the board of directors decides whether or not to act on that authority. If it chooses to designate facilities, then the board of directors must follow the process 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 are permitted to receive the District's waste. That means, no one can legally take waste from the District to undesignated facilities and undesignated facilities cannot legally accept waste from the District. The only exception is in a situation where the board of directors grants a waiver to allow an undesignated facility to take the District'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 issue a waiver request.

If the board of directors designates facilities, then the next section will provide a summary of the designation process.

1) Description of the District’s Designation Process

The Board is authorized to establish facility designations in accordance with Sections 343.013 and 343.014 of the Ohio Revised Code. In addition, facility designation will be established and governed by applicable District rules. The District relies on revenue from fees paid pursuant to contract agreements with designated solid waste facilities that receive solid waste generated within the District. In June 2007, the Board of Directors designated solid waste facilities to ensure adequate financing to implement approved solid waste plans. As part of the “Designation,” contracts were signed with solid waste facilities that included a \$5.50 per ton contract fee.

In this plan update the contract fee will increase to \$7.50 per ton beginning in 2027.

2) List of Designated Facilities

Table 4-6 Facilities Currently Designated

Facility Name	County	State	Facility Type
Ohio Valley Waste Warren	Trumbull	OH	Transfer Station
Ohio Valley Waste - Youngstown	Trumbull	OH	Transfer Station
Carbon Limestone Landfill	Mahoning	OH	Landfill
Mahoning Landfill	Mahoning	OH	Landfill
Lake County Landfill	Lake	OH	Landfill
Geneva Landfill	Ashtabula	OH	Landfill
Kimble Sanitary Landfill	Tuscarawas	OH	Landfill
Countywide Recycling & Disposal	Stark	OH	Landfill
American Landfill	Stark	OH	Landfill
Lorain County Landfill Inc.	Lorain	OH	Landfill
Coshocton Landfill	Coshocton	OH	Landfill
Suburban Landfill	Perry	OH	Landfill
Pine Grove Regional	Fairfield	OH	Landfill
Athens Hocking Reclamation Center	Athens	OH	Landfill
Apex Environmental LLC	Belmont	OH	Landfill
Liberty Tire Monofill	Stark, Tuscarawas, Wayne	OH	Landfill
Richland County Transfer	Richland	OH	Transfer Station
Broadview Heights Transfer	Cuyahoga	OH	Transfer Station
Cleveland Transfer/Recycling Center	Cuyahoga	OH	Transfer Station
Glenwillow Transfer Station	Cuyahoga	OH	Transfer Station
Harvard Road Transfer	Cuyahoga	OH	Transfer Station
Akron Transfer Station	Summit	OH	Transfer Station
Kimble Transfer & Recycling	Stark	OH	Transfer Station
Hancock County Landfill	Hancock	OH	Landfill
Cambridge Transfer and Recycling	Guernsey	OH	Transfer Station
Noble Road Landfill	Richland	OH	Landfill
Seneca Landfill	Butler	PA	Landfill
Imperial Landfill	Allegheny	PA	Landfill
Tri-County Industries	Mercer	PA	Transfer Station
Valley Waste Services Transfer	Beaver	PA	Transfer Station

Short Creek Landfill	Ohio	WV	Landfill
Kimble Transfer & Recycling - Twinsburg	Summit	OH	Transfer Station
Waste Management of Ohio Inc - Chardon Hauling	Geauga	OH	Transfer Station

The above list presents the list of designated facilities as of 2022.

CHAPTER 5. WASTE REDUCTION AND RECYCLING

Purpose of Chapter 5

As was explained in Chapter 1, a District must have programs and services to achieve reduction and recycling goals established in the state solid waste management plan. A District must also ensure that there are programs and services available to meet local needs. The District 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.

Through achieving the goals of the *State Plan* and meeting local needs, the District ensures that a wide variety of stakeholders have access to reduction and recycling programs. These stakeholders include residents, businesses, institutions, schools, and community leaders. Programs and services collectively represent the District's strategy for furthering reduction and recycling within its jurisdiction.

Before deciding upon the programs and services that are necessary and will be provided, the Policy Committee performed a strategic, in-depth review of the District's existing programs and services, recycling infrastructure, recovery efforts, finances, and overall operations. This review consisted of a series of 13 analyses that allowed the Policy Committee to obtain a holistic understanding of the District by answering questions such as:

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

Using what it learned, the policy committee drew conclusions about the District'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 District could take, programs the District could implement, or other things the District 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 District 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. Program Evaluation and Priorities

1) Actions

Appendix H evaluates the District's performance of programs and strategies in offering and maintaining services. Evaluation of these programs involves determining whether the performance observed was expected or desired. If these strategies did not perform as anticipated, suggestions were presented to improve and strengthen programs and performance and increase effectiveness. As part of this analysis, a list of opportunities was created, identifying possibilities for the District's future programming.

The District estimates that 48% of the items generated could be recycled at the curb or drop-off locations. These materials consist of cardboard, paper, plastics, metal, and glass. There is a great potential for collecting and processing more recyclables. The effort to increase the collection of materials requires changes to programs, such as expanded curbside collection, increased education/awareness, and promotion of District programs.

A working strategy session with the Policy Committee discussed existing program improvements and future programming that could be pursued. What ensued was a suggested list of programming. In this working session, the Policy Committee identified three major areas, among other improvements, to pursue this planning period. These are additional support for District staff in the form of an annual budget for contracted assistance, exploring food waste diversion opportunities, and working with communities to establish new curbside recycling services as well as receiving reliable data from existing services. Suggested areas of improvement and new programs do not bind the District to commit to every action listed.

2) Priorities

As part of the planning process, the Policy Committee gave a priority status for each program and further discussed goals, changes, and ways to improve or continue existing programs. Please see Appendix I for the full analysis.

The matrix below includes the list of existing programs, potential changes, and potential new programs. The priority status rating is defined as:

- Priority 1: Short term, 1 – 3 years.
- Priority 2: Medium term, 3 – 5 years.
- Priority 3: Long-term, 5+ years.

Program Description	Potential Changes	Priority			
		No Changes	1	2	3
Curbside Feasibility Study	Contract, consortium, franchise evaluation		X		
Drop-off Program	None	X			
Other Drop-Offs	Emphasize education/outreach at independent drop-off locations through media ads, presentations, improved signage, and training sessions.			X	

Program Description	Potential Changes	Priority			
		No Changes	1	2	3
	Evaluate if additional independent drop-offs are needed to better serve the District.			X	
	Emphasize the importance of data collection from these sites.	X			
Commercial Recycling & Source Reduction	Roll out Green Achievement Certification for businesses.			X	
	Reach out to local businesses twice a year via a newsletter or email to establish relationships and make them aware of the District's programs.			X	
	Identify the largest generating businesses, and target these first with District funded recycling containers		X		
	Research and apply for EPA grants annually.		X		
	Research how small CESQG businesses can safely handle HHW		X		
Waste Audits	Increase awareness of program offerings through ads, social media, and District website promotion		X		
Event Recycling	None	X			
Document Destruction Day	None	X			
Monitoring/Tracking Yard Waste	None	X			
Yard Waste Management Technical Assistance	None	X			
Organics Management	Explore partnering with local businesses/organizations to divert organic waste such as food banks.			X	
	Explore providing technical assistance on food scrap management for businesses.			X	
	Provide grant funding to develop down-stream solutions to organics management			X	
Electronics Collection	None	X			
Appliance Collection	None	X			

Program Description	Potential Changes	Priority			
		No Changes	1	2	3
HHW Collection	None	X			
Scrap Tire Grants	None	X			
Market Development Grants	Work with local vendors on a joint grant application for funding the development of a small MRF.			X	
Drop-Off Litter	Change name to Drop-Off Improvement Grants (DIG)		X		
Recycling Incentive Grants	None	X			
Go Green Grants	None	X			
Other Grants	None	X			
District Collection Facilities	None	X			
Great American Clean-Up - Recycle Ohio 2021-2022	None	X			
Health Department Enforcement	None	X			
Environmental Crimes Task Force	None	X			
Data Collection	Conduct annual surveys for ADR with an emphasis on attaining new responses from commercial businesses		X		
	Work with haulers/communities to get individual community tonnage data for curbside programs in the District		X		
	Work with individual communities to gather yard waste tonnages that aren't already reported to Ohio EPA.		X		
Inventory List	Develop an inventory list of processors and diversion locations within the District including recycling centers, scrap yards, food banks, etc. for residents to reference. Post on the website and social media.			X	
District Website	None	X			
R3 Directory	None	X			
Education Program	None	X			
Awareness Program	Conduct a study to gain an understanding of underserved areas and population bases within the District.			X	
	Develop education/awareness material targeted at underserved populations. Ensure all populations are being reached and are given adequate opportunities to recycle.			X	

Program Description	Potential Changes	Priority			
		No Changes	1	2	3
Resident Outreach	Continue to engage District residents, and work within the awareness program goals to prioritize any underserved resident populations such as with postcard and social media impacts		X		
School Outreach	Add schools to drop-off programs and extend outreach to explain		X		
Institutions and Commercial Business Outreach	Attempt to reach commercial property management and multi-family housing complexes to encourage and assist in developing recycling services				X
	Focus on developing relationships with local businesses. Many may be unaware of the services available for the District. Encourage participation in annual commercial surveys.		X		
Community and Elected Official Outreach	Work with elected officials from at least 1 community a year to establish curbside recycling. Continue to attend township meetings and establish relationships		X		
Social Media	None	X			
New Program Opportunities					
School Recycling Program	Add a section to drop-off RFP that would bid out collection bins at each school in the District		X		
Food Waste Management Program	Food Waste Drop-off Pilot		X		
	Create web infrastructure promoting local food waste diversion methods			X	
Keep America Beautiful Affiliation	The district is applying to KAB in the summer of 2024.		X		
Full-Time Additional Staff Member	Hire a new FT staff member to assist with District programs.	Not Pursuing			
Part-Time Additional Staff Member	Hire a new PT staff member to assist with District programs.	Not Pursuing			
Summer Intern	Bring on an intern(s) in the summer to help the District with grant applications, research projects, database building, outreach, etc.			X	
Contracted Assistance	Annual budgeted contracted assistance based on the needs of the District in that year up to \$50,000/year.		X		

B. Program Descriptions

This section briefly describes major programs and services available during the planning period.

Curbside Recycling Services

Table 5-1 Curbside Recycling Services

ID#	Name of Curbside Service/Community Served	Service Provider	When Service Was/Will be Available
NSC1	Chardon City	Waste Management	Ongoing
NSC2	Burton Village	Waste Management	Ongoing
NSC3	Middlefield Village	Major Waste Disposal	Ongoing
NSC4	Cortland City	Republic Services	Ongoing
NSC5	Liberty Township	Republic Services	Ongoing
NSC6	Lordstown Village	Republic Services	Ongoing
NSC7	Newton Falls Village	Ohio Valley Waste	Ongoing
NSC8	Weathersfield Township	Republic Services	Ongoing
NSC9	Hubbard City	Republic Services	Ongoing
SC1	South Russell Village	Various	Ongoing
SC2	Auburn Township	Various	Ongoing
SC3	Bainbridge Township	Various	Ongoing
SC4	Aquilla Village	Various	Ongoing
SC5	Burton Township	Various	Ongoing
SC6	Chardon Township	Various	Ongoing
SC7	Chester Township	Various	Ongoing
SC8	Claridon Township	Various	Ongoing
SC9	Hambden Township	Various	Ongoing
SC10	Huntsburg Township	Various	Ongoing
SC11	Middlefield Township	Various	Ongoing
SC12	Munson Township	Various	Ongoing
SC13	Newbury Township	Various	Ongoing
SC14	Russell Township	Various	Ongoing
SC15	Troy Township	Various	Ongoing
SC16	Montville Township	Various	Ongoing
SC17	Parkman Township	Various	Ongoing
SC18	Thompson Township	Various	Ongoing
SC19	Howland Township	Contract with Hauler	Ongoing
SC20	Brookfield Township	Various	Ongoing
SC21	Newton Township	Various	Ongoing
SC22	Bazetta Township	Various	Ongoing
SC23	Bloomfield Township	Various	Ongoing
SC24	Braceville Township	Various	Ongoing
SC25	Bristol Township	Various	Ongoing

ID#	Name of Curbside Service/Community Served	Service Provider	When Service Was/Will be Available
SC26	Champion Township	Various	Ongoing
SC27	Farmington Township	Various	Ongoing
SC28	Fowler Township	Various	Ongoing
SC29	Greene Township	Various	Ongoing
SC30	Gustavus Township	Various	Ongoing
SC31	Hartford Township	Various	Ongoing
SC32	Hubbard Township	Various	Ongoing
SC33	Johnston Township	Various	Ongoing
SC34	Kinsman Township	Various	Ongoing
SC35	Mecca Township	Various	Ongoing
SC36	Orangeville Village	Various	Ongoing
SC37	Southington Township	Various	Ongoing
SC38	Vernon Township	Various	Ongoing
SC39	Vienna Township	Various	Ongoing
SC40	Yankee Lake Village	Various	Ongoing

Source: 2022 Annual District Report

Nine political jurisdictions in the District have non-subscription curbside services. Six of those programs are in Trumbull County and three are in Geauga County. All non-subscription curbside services are provided by private haulers. Subscription curbside recycling services are available throughout the District in areas lacking an existing non-subscription program. Two villages and every township in both Geauga and Trumbull Counties have access to subscription curbside service. In subscription-based service, residents must take voluntary action to sign up for and agree to pay for their curbside recycling service with a hauler. The District confirmed haulers servicing each of these political jurisdictions with trash service offer curbside recycling. Service is available for households to subscribe.

The materials collected through these programs vary based on each hauler. The end market for recyclables drives the ability of processors to collect different materials. In general, plastic bottles, jars & jugs, cardboard, mixed paper, and metal cans are accepted.

Drop-off Recycling Locations

Table 5-2 Drop-off Recycling Locations

ID#	Name of Drop-off/Community Served	Service Provider	When Service was/will be Available
FTU1	Newbury Township	Ohio Valley Waste	Ongoing
FTU2	Bainbridge Township	Ohio Valley Waste	Ongoing
FTU3	Chester Township	Ohio Valley Waste	Ongoing
FTU4	Russell Township	Ohio Valley Waste	Ongoing
FTU5	Notre Dame - Cathedral Latin School (Munson Township)	Ohio Valley Waste	Ongoing
FTU6	Chardon City	Ohio Valley Waste	Ongoing

ID#	Name of Drop-off/Community Served	Service Provider	When Service was/will be Available
FTU7	Brookfield Township	Ohio Valley Waste	Ongoing
FTU8	Girard City	Ohio Valley Waste	Ongoing
FTU9	Hubbard City	Ohio Valley Waste	Ongoing
FTU10	Hubbard Township	Ohio Valley Waste	Ongoing
FTU11	Niles City	Ohio Valley Waste	Ongoing
FTU12	Trumbull County Career and Technical Center (Champion Township)	Ohio Valley Waste	Ongoing
FTU13	Trumbull County Administration Building (Warren)	Ohio Valley Waste	Ongoing
FTU14	Warren, Summit Academy	Ohio Valley Waste	Ongoing
FTU15	SWMD Administrative Building (Warren)	Ohio Valley Waste	Ongoing
FTU16	Liberty Township Schools	Ohio Valley Waste	Ongoing
FTU17	Shepherd of the Valley (Howland Township)	Ohio Valley Waste	Ongoing
FTU18	Warren Harding High School	Ohio Valley Waste	Ongoing
FTU19	Warren Township Sports Complex	Ohio Valley Waste	Ongoing
FTU20	Howland Township Fire Station	Ohio Valley Waste	Ongoing
FTU21	Howland Recycling Center	Ohio Valley Waste	Ongoing
FTR1	Burton Township	Ohio Valley Waste	Discontinued 2022
FTR2	Chardon Township	Ohio Valley Waste	Ongoing
FTR3	Claridon Township	Ohio Valley Waste	Discontinued 2022
FTR4	Huntsburg Township	Ohio Valley Waste	Ongoing
FTR5	Parkman Township	Ohio Valley Waste	Ongoing
FTR6	Thompson Township	Ohio Valley Waste	Ongoing
FTR7	Troy Township	Ohio Valley Waste	Ongoing
FTR8	Geauga Collection Facility (Claridon Township)	Ohio Valley Waste	Ongoing
FTR9	Bloomfield Township	Ohio Valley Waste	Ongoing
FTR10	Braceville Township	Ohio Valley Waste	Ongoing
FTR11	Bristol Township	Ohio Valley Waste	Ongoing
FTR12	Farmington Township	Ohio Valley Waste	Ongoing
FTR13	Gustavus Township	Ohio Valley Waste	Ongoing
FTR14	Hartford Township	Ohio Valley Waste	Ongoing
FTR15	Johnston Township	Ohio Valley Waste	Ongoing
FTR16	McDonald Village	Ohio Valley Waste	Ongoing
FTR17	Southington Township Hall	Ohio Valley Waste	Ongoing
FTR18	Vienna Township	Ohio Valley Waste	Ongoing
FTR19	Fowler Township	Ohio Valley Waste	Ongoing
FTR20	Newton Township	Ohio Valley Waste	Ongoing
FTR21	Kinsman Township	Ohio Valley Waste	Ongoing
FTR22	Mecca Township	Ohio Valley Waste	Ongoing

All drop-offs are available to the public at least 40 hours per week. The end market for recyclables drives the ability of processors to collect different materials. The District maintains a list of acceptable materials

on its website. The District directly contracts with a private hauler to provide and service drop-off locations. The District contract costs include processing, transportation, and any other management-related costs of operating the drop-off locations. The District coordinates the placement of drop-offs with the hosting community or private sector entity. As of 2022, Ohio Valley Waste serviced the full-time drop-off locations in the District. In 2024, the five-year bid contract was awarded to Kimble. The new contract added collection and processing service at Geauga and Trumbull schools for paper recycling.

Drop-off site locations are subject to change at any time for unforeseen reasons or to maintain performance. All options are open for operations and implementation of this program. The standard recyclables collected were bottles, jugs, jars, cans, cardboard, and mixed paper.

School Recycling Drop-Off Program

The District's 2024 Drop-off Bid for Services included servicing of schools. The District communicated with schools and identified those interested in a recycling service. The bid identified the number of schools interested to receive a cost for the program. Returned bids were within the budget and the District selected to add the schools into the service contract.

Other Drop-Offs

Some private operations of drop-off for specific items are available throughout the District. These include special drop boxes for paper, clothing, plastic film bags, batteries, scrap metal, etc. These drop-offs operate independently of District programs but are a valuable resource to help divert materials from the landfill. The District will continue to survey these businesses providing the service for data.

Other Residential Recycling Programs

Curbside Feasibility Study

The District continues to promote Ohio Valley Waste curbside recycling expansion. At workshops and meetings, the District encouraged discussion at the township/city level for communities to contract trash and curbside recycling services for residents in their community. Multiple communities have asked for more information and help to discuss options at their administrative meetings. Due to the high cost of fuel and materials, and scarcity of commercial drivers, the District is waiting to discuss starting a curbside recycling program with Warren until the economic climate is more favorable.

The District will explore conducting a formal feasibility study. If a study is conducted, the District will evaluate contract feasibility, facilitating the formation of a consortium among communities, franchise waste collection, and more.

Drop-Off Improvement Grants (formerly called drop-off litter)

The District is continuing to award grants to communities to purchase cameras, upgrade lighting, signage, and/or fencing to reduce illegal dumping and contamination issues. Over half of the drop-off sites now have camera surveillance and local law enforcement support to catch illegal acts. The District continues to work with remaining communities to have cameras installed, as well as meeting with local law enforcement to coordinate cases when they occur. The District budgets roughly \$100,000 in available spending for DIG applications each year. In recent years, the District has seen a decline in the number of applications for improvements. Still, many communities continue to apply for funding.

Commercial/Institutional Sector Reduction and Recycling Programs

Commercial Recycling & Source Reduction

The commercial sector is a priority focus for the District. Twice per year, the District will reach out to local businesses via a newsletter to inform and raise awareness of the District's programs and funding opportunities once a newsletter is developed. Further, the District will identify the largest generating businesses and create an updateable document to maintain information. These businesses will be the first ones targeted in the District's annual surveys as well as the first ones to receive District-funded recycling containers if interested. Notification of the newsletter will be included on the District's website.

Focus will continue to be placed on the services available to this sector which includes: contract and technical assistance (education, in-person meetings, presentations, etc.), waste audits (see separate program), and third-party resources. Technical assistance will be provided to businesses, industries, and institutions upon request.

Waste Audits

Technical assistance is provided to businesses, industries, institutions, and non-profits free of cost. Technical assistance includes waste assessments, education, in-person meetings, presentations, etc. Upon request, District staff evaluates current waste management strategies and makes recommendations for improvements. Data collection surveys are distributed annually to solicit responses from entities interested in waste assessments. The District hopes to increase local awareness of this free program through social media and by adding information specifically for businesses on the District website.

Event Recycling

The District loans collection containers for special events for recycling beverage bottles and cans. The ClearStream containers are available for free to borrow. Any organization has the opportunity to take advantage of this program.

Industrial Recycling Programs

Waste Audits

See the above description.

Materials Marketplace (new program)

The District will promote the materials marketplace on its website as well as in education and awareness efforts.

Industrial Go Green Grants (new program)

The District will add industrial businesses to the list of eligible recipients for grant money through this program.

Restricted/Difficult to Manage Wastes

Document Destruction Day

Shred events, one day in Geauga and one day in Trumbull, are contracted to a third party but the District manages the events and pays for the services.

Monitoring/Tracking Yard Waste

The District monitored yard waste being delivered to compost facilities, open dumped, or landfilled by using Ohio EPA compost facility reports. Ohio EPA requires these facilities to submit annual reports. Monitoring could include surveying compost facilities, waste haulers, landfills, residents, and landscapers. This strategy can be used to help the District locate illegally disposed of or landfilled yard waste by waste haulers and generators. This information is part of the Health Department enforcement program.

Yard Waste Management Technical Assistance

Yard waste management is decentralized. The District does not fund or operate yard waste management collection or facilities. Haulers in the District do not offer curbside separate yard waste collection hauling. The District will provide technical assistance to communities/political jurisdictions that are interested in the development or expansion of current yard waste management programs. Technical assistance includes identifying existing management resources that are available throughout the District and also in the development of programs that will address the needs of a community in managing yard waste through more efficient and cost-saving programs.

Organics Management

The District continues to offer educational instruction on composting, as well as social media coverage of on-site composting at the District Office. The District has actively strengthened its relationship with the Geauga and Trumbull County Soil & Water Conservation Districts (SWCD), subcontracting all of its educational programs to these partners. The District continues to offer compost bins for sale at a discounted rate.

Costs to develop large-scale downstream infrastructure to process food waste composting in-district is a responsibility the District is not able to address at this time. The District supports decentralized upstream and downstream systems. The District will emphasize upstream reduction of food waste through targeted education and outreach. Downstream solutions will focus on rescue and on-site decentralized diversion education and outreach. Funding for this program can be used to provide one-time grants to commercial businesses, institutions, retailers, and restaurants to implement an on-site diversion strategy (upstream or downstream).

The District is interested in exploring partnerships with local businesses such as food banks to facilitate food donations. The District will explore providing technical assistance on food scrap management for both commercial and industrial businesses

Food Waste Management Program (new program)

The District does not have a centralized program to divert food waste and is interested in exploring a food waste drop-off program. The District has discussed the option of a pilot program with Rust Belt Riders, a northern Ohio company focused on diverting food waste by composting.

The District will explore the potential to develop a pilot program with Rust Belt Riders to provide locations for residents to drop off food waste instead of throwing it into the trash. Based on the results of the pilot program and community feedback, a larger program may be developed.

Electronics Collection

The District accepts electronic waste at both collection facilities. In 2022, the District offered box truck rentals, allowing communities to collect electronics at their local community cleanup events, so they could easily transport materials to the closest collection facility in the District for processing.

Appliances Collection

The District accepts freon-containing appliances at both collection facilities. The District offered box truck rentals, allowing communities to collect appliances at their local community cleanup events, so they could easily transport materials to the closest collection facility in the District for processing.

HHW Collection

The District accepts household hazardous waste at both collection facilities

Funding/Grants

Drop-Off Improvement Grants (formerly called drop-off litter)

See the description above under “Other Residential Recycling Programs”

Scrap Tire Grants

The District offers yearly grants to political jurisdictions to assist in the disposal of scrap tires. Grant funds may be used for one or more or a combination of programs; collection drives in conjunction with spring cleanups; curbside collection drives, and/or roadside cleanup of illegally dumped tires. Grant amounts are based on population percentage. No matching financial commitment is required.

Market Development Grants

The District monitors State and Federal grant programs that become available to aid in the development of this type of funding. The Policy Committee reviews proposals from established businesses and awards funding for local match portions of grant applications. This funding helps “close the loop” in recycling.

Recycling Incentive Grants

Recycling incentives are available to businesses, government entities, non-profit organizations, and education institutions interested in implementing a new recycling program or improving an existing program to support long-term recycling goals. Grants will be awarded on a competitive basis with an emphasis on awards towards non-subscription curbside recycling and will remain available as long as funding permits.

Recycle Ohio 2021-2022

The District was awarded a Recycle Ohio Grant in July 2021 to assist in the promotion of the Great American Cleanup events in 2022 and begin an anti-contamination campaign at the recycling drop-off sites. The EPA awarded \$30,000 and the District promised at least \$7,500 in matching funds. The District started initial data collection in 2021 by conducting an audit of multiple drop-off sites. This audit was used to determine messaging for the anti-contamination educational campaign based on the items most contaminating the recycling stream. This campaign focuses on items thought to be recyclable, but not accepted in our single-stream system. There is an illegal dumping component, but the campaign focused primarily on "wish-cycling". A new mascot, Re-Co (Recycle Correctly) was created and is being used to promote new messaging.

Facility Operation

Collection Facilities

The District operates two collection facilities, one each in Trumbull and Geauga Counties, where Geauga and Trumbull County residents can bring hard-to-manage materials for recycling year-round. The Trumbull Collection Facility has been open since 2005 and the Geauga Collection Facility opened in June 2022. The collection facilities accept electronics, appliances, lead-acid batteries, fluorescent bulbs, oil, expanded polystyrene (EPS), and other HHW. An acceptable material list is maintained on the District's website. HHW operations are contracted for transportation and processing. To minimize costs, District staff are used when feasible.

Enforcement & Clean-Up

Great American Litter Clean-Up

For over 30 years, the District has participated in the Keep America Beautiful/Great American Clean Up Program. Cleanups are held throughout the warmer months before the weeds grow to cover unsightly road litter in ditches, parks, and along roadsides. Volunteers are given trash bags, gloves, vests, and other safety equipment for their clean-ups which can be done in conjunction with beautification projects within the community. This strategy helps to reduce litter and keep the community clean.

Health Department Enforcement

The District provides funding to the Ohio EPA-approved Health Districts of Geauga County, Trumbull County, and Warren City. The Health District enforcement duties consist of inspections required by Ohio EPA for the health district to remain on the Director's approved list and working with the District when solid waste issues arise.

Environmental Crimes Task Force

The Environmental Enforcement Program was redeveloped into the Environment Crimes Task Force (ECTF). The ECTF is a partnership between local municipalities, enforcement agencies, regulatory organizations, and District staff.

Other Programs

Data Collection

Commercial and industrial businesses are annually surveyed for recycling and diversion data. Priority is placed on obtaining responses from entities that have not provided data within the last two surveys that are known to generate a significant quantity of recycling and waste. The District relies heavily on Ohio EPA-provided data for MRFs and large box store commercial enterprises.

Beginning in 2023, the District developed a web-based platform to survey the residential, commercial, and industrial sectors. The District plans to survey its communities and local businesses for data on recycling activities annually. Data will be collected and broken down by NAICS code to properly classify which sector it falls under. The District will send out links to the surveys via email to the list of businesses and community contacts in both Geauga and Trumbull Counties. High-priority targets will be identified, and the District will make efforts to follow up with contacts via email and phone calls.

The District will continue to work with waste haulers to gather data on recycling and yard waste tonnage collected as well as rely on Ohio EPA's annual reports on compost operations, MRFs, and big box stores.

The District will review the data received for accuracy and to prevent any double counting of data included in Ohio EPA's reports. Any data that is not reported already can be attributed to the District's recycling rate and improve its ability to achieve Goal 2. Should the District deem it necessary, outside assistance from solid waste consultants may or may not be used to gather data.

Inventory List

The District maintains a list of scrap dealers available in the District, which can also be found on the webpage. The majority are located in the southern portion of Trumbull County. The District is working to develop an inventory list for private facilities recycling. This list is a primary goal during the plan update.

Keep America Beautiful Affiliation (new program)

As of the writing of this plan update the District is in the process of applying to be a Keep America Beautiful Affiliate. The District expects this to be finalized in the summer of 2024.

Summer Internship Opportunities (new program)

The District is interested in exploring the possibility of hiring a summer intern annually. Depending on District funding and applicant interest, interns would help provide much-needed support to District staff. The District plans to keep a running list of items or tasks throughout the year that it would like to accomplish but does not have the time or resources to pursue. Such tasks can be assigned to interns during their time with the District and could include assisting the District with grant applications, research projects, community outreach, database building, and education/awareness.

Contracted Assistance (new program)

Through discussions with the policy committee, it was determined that the District could benefit from additional support with its projects and/or programs to reach its goals. The District will budget \$50,000 annually to be put towards contracted assistance from consultants, planners, engineers, etc. The annual budget will be dependent on the needs of the District in a given year. Should the District decide no assistance is necessary, the funds will not be spent and will be rolled into the following year.

Disaster Debris Management (new program)

Responding to natural disasters, such as flood events, tornados, and severe storms, requires a significant effort of coordination and time from all levels of government. Natural disasters including disease (pandemic bird flu) can also significantly impact communities and specifically solid waste services. Man-made disasters, although unlikely, may also require the management of significant amounts of debris. The Ohio EPA encourages all solid waste management districts to outline a strategy and plans to be prepared in the event a natural or man-made disaster occurs.

The District will work with the Local Emergency Planning Committee to develop and implement their Disaster Debris Management Plan should the need arise.

Education, Outreach, Awareness, and Technical Assistance

District Website

The District maintains a website address at <https://startrecycling.com/>. The District strives to maintain a comprehensive and user-friendly website with all the recycling information users need. The website is a strong resource for residents, schools, businesses, institutions, and local governments to utilize. The

website offers dedicated pages for special waste management, recycling, trash, education, litter, and other district activities. The website provides detailed information and inventories of all the services provided by the Geauga-Trumbull Solid Waste Management District, making it a reliable source for providing instant information for programs, services, and events offered.

Resource Guide

The District's website includes a dedicated page for recycling resources. Under this page are drop-off locations, areas with curbside recycling, acceptable materials to recycle, local alternative recycling options, and information on the District's Recycling Centers. The District updates this annually to ensure the information is accurate and up to date.

Inventory

An infrastructure inventory of all available drop-off locations, curbside programs, compost sites, material recovery facilities, etc. can be found in the Plan, which is updated every five years. Specific recycling inventory can also be found on the District's website. The information on the website is updated more frequently than the District's Solid Waste Management Plans to reflect any changes that may happen in between Plan Update cycles.

Speaker/Presenter

The District's Education Specialist retired in 2019. Instead of hiring another full-time employee, the District established a partnership in the fall of 2022 to subcontract with Trumbull Soil & Water Conservation District (SWCD) and Geauga Soil & Water Conservation District (SWCD) to provide educational programs in their respective territories. The Director is still providing educational and outreach programs to adults.

Reduce, Reuse, Recycle (R3) Directory

Program information on the website serves as a comprehensive resource guide as required by the Ohio EPA 2020 State Plan. To accommodate interested residents the District developed a Reduce, Reuse, Recycling (R3) Directory available online. The directory includes: an introduction, frequently asked questions, how to prepare recyclables, district programs, a listing of outlets by materials, and reuse centers. The directory is updated every other year. Information from the directory is available in the search function of the website.

Education Program

With the District's Education Specialist retiring immediately followed by COVID-19, the District faced challenges in effectively operating this program. However, in the year of the District's partnership with the Soil & Water Conservation Districts, there was a significant increase in the amount of people reached. With 2023 being the first full year of this partnership, the District expects to see this number continue to increase and remain an effective collaboration.

Awareness Program

This program promotes and publicizes environmental issues and district-sponsored programs to the public. The Director and District staff are all involved with the implementation of this program. A display is used at public events throughout the year with the theme changed to address and promote current programs, events, and services. Promotional items related to recycling and other environmental issues are distributed to the public at various awareness events.

Resident Outreach

This program works in conjunction with the Awareness Program and helped spread awareness about the District receiving a Recycle Ohio Grant in 2020 and 2021. In 2022, a new mascot, Re-Co (Recycle Correctly) was created and is used to promote new messaging. One of the issues with recycling in the District is multiple MRFs accept materials from residents and businesses, creating confusion about what can be accepted. Re-Co's message emphasizes that only 5 items (bottles, jugs, jars, cans, and paper/cardboard) are accepted by every company. Anything additional recyclables beyond the five items needs to be checked with a hauler. New recycle bin labels, created with Recycling Partnership designs, new changeable signs at each site, a social media push, and TV commercials helped to educate residents about the importance of only recycling what is accepted.

School Outreach

This program focuses on developing infrastructure and places emphasis on outreach programs to build recycling programs. The District also provides education and outreach to schools through classroom presentations. The District has grade-specific educational activities for K-12 students.

Institutions and Commercial Business Outreach

The District provides institutions and commercial businesses with education and outreach opportunities. The District offers waste audits for industrial and commercial businesses upon request. A high-priority focus for the District during this planning period is collecting data on recycling and/or diversion activities within Geauga and Trumbull Counties. Currently, it is thought that many businesses may be unaware of the services the District provides and the resources available to help the commercial sector divert waste. The District will focus on developing relationships with local businesses to collect data and encourage further diversion, especially through the annual commercial survey process.

Community and Elected Official Outreach

The District's goal is to engage this audience because they are influential to their residents and building relationships can facilitate the vision of the District. As with the resident outreach this outreach will utilize community-based social marketing to change behaviors. Often, elected officials and community leaders may not understand the operational impacts of policy decisions made about solid waste and recycling. Focus on this audience helps familiarize the audience with the industry and also provides support and resources.

Messages communicated to this audience center around contamination in the recycling programs such as drop-off locations and curbside collection, building strong PAYT models, and assisting communities with contracts for trash and recycling collection.

Social Media

It is common for Districts to have a presence on social media such as Facebook, YouTube, Twitter, and Instagram to name a few. These media allow for a two-way conversation with residents. Social media offers an unparalleled way to measure interaction with target audiences through reports on audience engagement. The District can use these reports to create a baseline and set goals for future online engagement measurement. The District has a Facebook and Instagram account that is managed by a subcontracted public relations community outreach coordinator.

Outreach Priority

Through discussions with the Policy Committee and completion of the Program Priority Matrix exercise found in *Appendix I*, the District has elected to focus on food waste diversion as its outreach priority.

Unfortunately, the District does not have access to a Class II compost facility. While there are Class III and Class IV compost facilities within the region, these facilities are not able to accept food waste like a Class II facility is. With no available facilities, the District could look to provide funding and/or establish a food waste diversion facility within its two counties. However, food waste diversion technologies, such as digesters to make compost, can be very expensive. Further issues arise in the feasibility of collecting food waste from commercial businesses and residents alike to serve as feedstock for compost operations.

With these challenges in mind, the District feels a strong alternative route to pursue is education and outreach to residents and schools. Driving behavior change in older generations is exceedingly challenging as many of the undesirable behaviors, in this case wasting food by over-buying, over-ordering, or simply discarding food, have long been established and reinforced throughout the lives of residents. School education will focus on reinforcing behaviors centered around food waste diversion and prevention in the students. Younger generations can take the lessons learned back home.

The District will provide behavior-changing outreach campaign to both adults and school-age residents. The District currently sells compost bins at a discounted rate and has developed a “How To Compost Brochure”. These materials will continue to be advertised and promoted throughout the year at presentations, meetings, and throughout the District’s online footprint.

Goal/Purpose: To change residential behavior around food waste diversion and prevention. Desirable behaviors include reducing food waste at the source.

- 1) **Adult Message:** Only buying what can be consumed at grocery stores, portion control while dining out and/or taking home leftovers, backyard composting using District compost bins, and donating food when possible to local food banks.
- 2) **School/Student Message:** Introduce the issue of food waste, eat what you take, and promote mindful eating with activities and demonstrations.

Target Audience: The District will prioritize school-age residents to use a “bottom-up” behavior change method where the younger audiences take home what was learned and serve as the agent of change for the older audiences rather than the District directly. However, the District will continue to emphasize the same messages to adult residents as a secondary audience through existing programs, presentations, and activities.

Strategy: The District no longer has a full-time educator as of 2019. Instead, the District subcontracts with the local Soil and Water Conservation Districts. However, the District Director gives presentations regularly throughout the year. Using this existing structure, the District will create a robust outreach strategy designed to achieve several objectives. The following components will comprise the strategy:

- **Understandings Barriers:** Exploring and understanding the barriers residents and students of the Districts may have toward diverting food waste.

- Adults: This could be done through a variety of methods including conducting a voluntary survey at the District's collection facilities, an online survey via email outreach, and through discussions at meetings, presentations, and events to name a few.
- Students: This could be done through classroom presentations, online activities, food audit or sort, or teacher lesson planning. World Wildlife Fund toolkit resources for students may be helpful.
- **Development of Food Waste Diversion Materials:**
 - Adults: The District would build upon existing materials like the compost guide. The District would also create a living database to provide residents with information on local food waste diversion facilities including food banks, and other methods of diverting food waste including backyard composting. This would also present an opportunity for the District to establish a working relationship with local diversion outlets. The goal would be to lead these businesses to create diversion opportunities and report food waste diversion annually on the District's survey.
 - Students: The District could use templates from other sources. Posters in the school cafeterias, audit templates, working with school administrators and health departments to create share tables, and create school compost bioreactors or in-vessel systems.
- **Best Practices:** Using the EPA's Food Recovery Hierarchy¹, the District will develop educational materials to highlight best practices that residents and students can use in their everyday lives to reduce food waste. These may include but are not limited to best practices for grocery store trips, food storage, cooking tips, at-home composting efforts, and food donations. Materials will be available in an online PDF format published on the District's website and in hard copy prints to be handed out during classroom visits, adult presentations, District collection facilities, etc.

Measuring Success: Measuring the effectiveness of food waste diversion efforts can be challenging. As such, the District will measure the effectiveness of this outreach priority during the planning period using various quantitative metrics. The District will continue to track the number of presentations given both from the Soil and Water Conservation Districts as well as from the District Director.

Adults: The District will monitor the sales of backyard compost bins. Generally, if the sales of these bins rise over time in conjunction with this program's efforts, it can be reasonably assumed that the efforts made are being realized. Food waste diversion facilities and businesses connected with while building out resources will be asked to participate in the District's annual surveying process. Any reported values will be monitored annually.

Schools: Pre-and post-campaign audits will be conducted on any participating school.

Timeline: The general timeline planned for this outreach priority is as follows:

¹ US EPA Food Recovery Hierarchy, https://19january2017snapshot.epa.gov/sustainable-management-food/food-recovery-hierarchy_.html

1. **Q1 2025:** Begin exploring perceived barriers residents may see with diverting food waste. Desktop research, case studies, and direct outreach to residents will be used to gain a foundational understanding of common barriers faced, as well as potential solutions. Explore other District’s solutions to managing food waste. Explore school interest in participating in a food reduction campaign.

2. **Q3 and Q4 2025:** Conduct short resident outreach surveys and voluntary discussions with the District at commonly used sites such as the District collection facilities, drop-off locations, festivals/events, etc. Develop participating school programs/toolkits to share with the school. Conduct pre-audit campaign measurements.

3. **FY 2025 and 2026:** Creation of a District database to be updated annually, providing information on local food waste diversion opportunities and facilities. Information such as location, acceptable items, contact information, and website links will be included. During this process, the District will reach out to any identified facilities/businesses and try to create a working relationship, informing them of programs, technical assistance, and funding that may be available to support these outlets as well as requesting the completion of the annual recycling survey. Deliver presentations and hands-on activities to students for a time of 4 to 6 weeks.

4. **FY 2025 and 2026:** Creation of educational materials to be posted on the District website and social media, as well as printed materials to be given at the District collection facilities, presentations, school visits, festivals/events, etc. Deliver presentations and hands-on activities to residents and students for a time of 4 to 6 weeks.

5. Upon completion of the education and outreach materials, conduct a post-audit in schools to measure campaign progress. Conduct analysis of compost bin sales and other metrics for the adults.

6. Repeat. The District will work with its educational partners to continue implementing.

At current staffing levels, the District may not be able to conduct both campaigns concurrently. If not, the plan for the outreach priority will start with one target audience and when the program cycle is complete alternate to the other target audience.

C. Waste Reduction and Recycling Rate

Table 5-3 Residential/ Commercial Waste Reduction and Recycling Rate

Year	Projected Quantity Collected (tons)	Residential/ Commercial WRR (%)
2022	87,969	25%
2026	99,468	26%

Year	Projected Quantity Collected (tons)	Residential/ Commercial WRR (%)
2027	101,393	26%
2028	104,775	27%
2029	106,917	27%
2030	109,186	27%
2031	109,654	27%

Source: Appendix K
 Note: WRR = Waste Reduction Rate

Table 5-4 Industrial Waste Reduction and Recycling Rate

Year	Projected Quantity Collected (tons)	Industrial WRR (%)
2022	13,946	24%
2026	13,946	21%
2027	13,946	20%
2028	13,946	19%
2029	13,946	18%
2030	13,946	18%
2031	13,946	17%

Source: Appendix K
 Note: WRR = Waste Reduction Rate

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 District will obtain money to pay for operating the District programs 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 District intends to fund during the planning period and estimates how much the District 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 District 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 District will not have enough money to pay for all planned expenses or if the District has reason to believe that uncertain circumstances could change its future financial position, then the plan must demonstrate how the District 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 District's budget. Detailed information about the budget and District budget policies are provided in Appendix O.

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. Overview of the District’s Budget

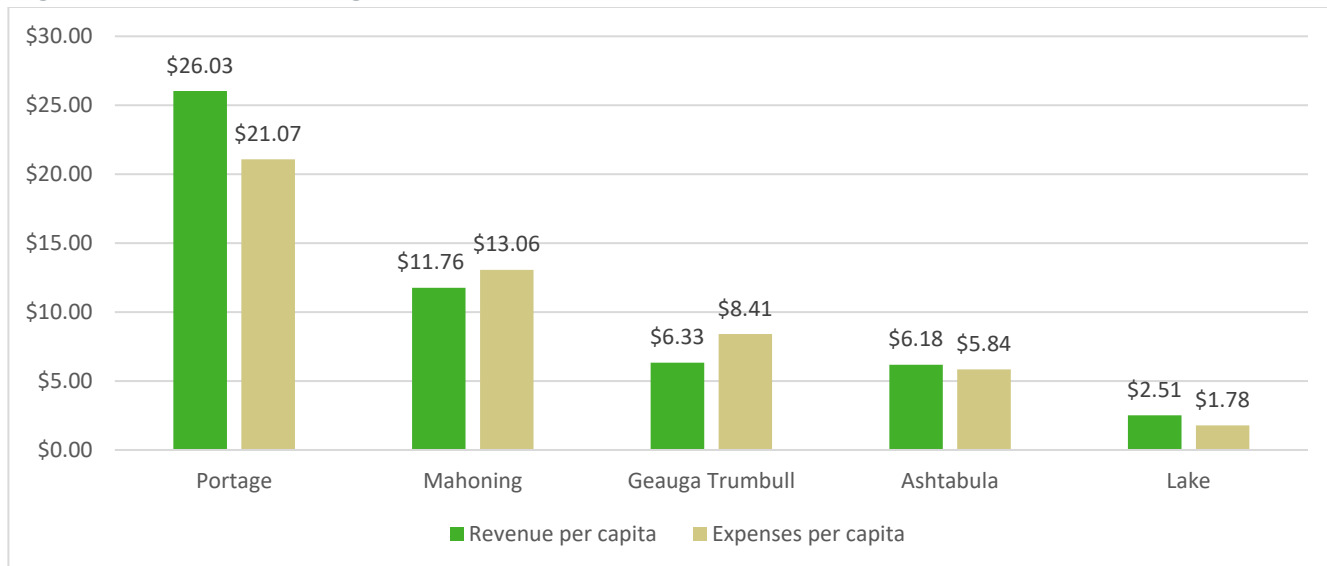
The District’s primary funding source is revenue earned through designation fees. The District does receive revenue from other sources such as interest and the sale of recyclables. Designation fees are collected on each ton of solid waste that is generated within the levying District and accepted at either a contracted transfer facility or contracted landfill located in Ohio or Pennsylvania. The fee is collected at the first facility that accepts the District’s waste.

Historically, the District has operated from a designation fee of \$5.50. As part of the designation contracts, solid waste facilities accepting District waste remit a \$5.50 per ton contract fee to the District. To support new programming and the rising costs of existing programs, the Policy Committee is planning to increase the contract fee by \$2.00 per ton in 2027. The District has maintained a constant designation fee since 2007. The contract 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 District. The designation fee revenue accounts for roughly 93% of the District’s annual revenue.

The District estimates earning roughly \$1.8 million while expending roughly \$2.4 million from 2024 to 2026. This cost deficit is not sustainable, and the District will be drawing down the fund balance to support programming. It is estimated that by 2030, the District will have nothing left in its balance to support programming if no changes are made. As such, a designation fee increase of \$2.00 to \$7.50 per ton is expected in 2027. This will be the first fee increase in 20 years.

Compared to neighboring solid waste management districts, the per capita revenue and expenses sit in the middle of the five districts below. However, the disparity between per capita revenue and expenses of the District is proportionally the highest in the comparison.

Figure 6-1 Per Capita Regional Comparison 2022

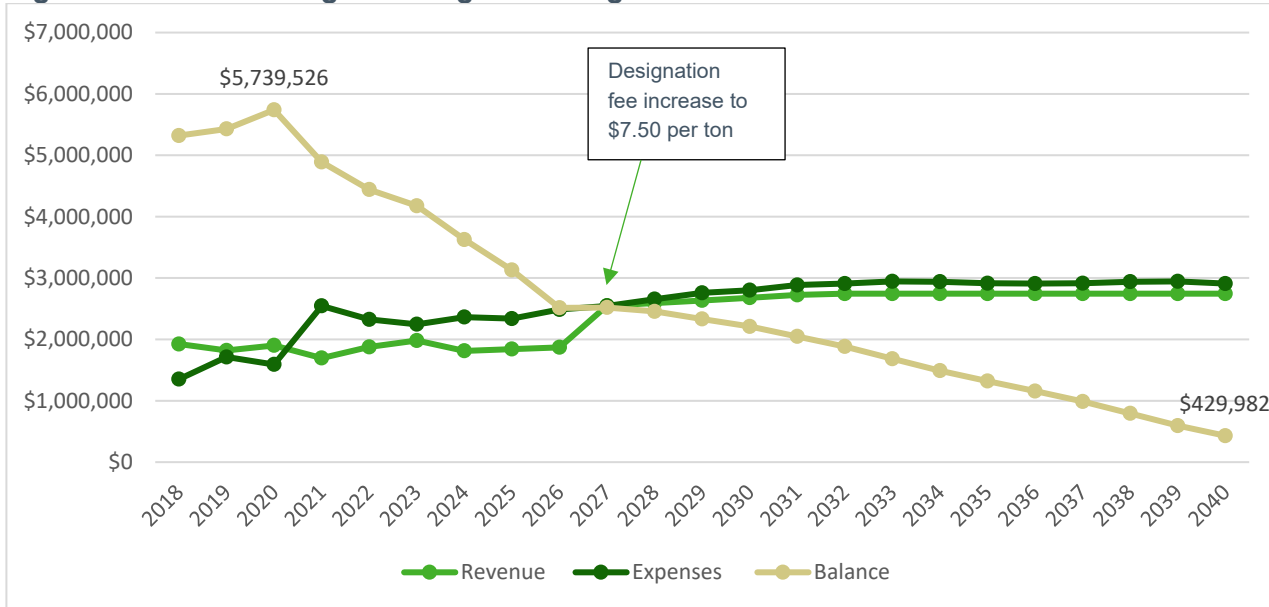


Source: Ohio EPA Summary Fee Report 2022

The District is committed to prioritizing the highest level of service for solid waste management at the greatest value to the community. Based on historical expenses, planned future expenses, and estimated inflationary factors, the District does not believe the current fee structure is sustainable.

Historically, the District was able to operate with a surplus of funds. Beginning in 2021, the District’s fund balance began to be drawn down to support increased services to residents such as the development of the Geauga Collection Facility. The District operated from 2021 to 2023 with expenses elevated, drawing the budget down.

Figure 6-2 District Budget Through Planning Period



Values from 2018 – 2023 are actual values reported and sourced from District Quarterly Fee Reports. Values from 2024 – 2040 are projected values.

The full financial analysis can be found in Appendix O.

B. Revenue

Overview of How Solid Waste Management Districts Earn Revenue

SWMDs have multiple options to raise the revenue to finance their solid waste management plans. A SWMD can use just one or as many of these options as needed. Two of the most used options 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.

Types of Fees:

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

Disposal fees are collected on each ton of solid waste that is disposed of at landfills within 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 of at landfills in the SWMD. Out-of-state waste is solid waste generated in other states and disposed of 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.

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. The statute does not set 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 who receives solid waste services from the SWMD to pay for those services. The board does this by establishing and collecting rates and charges on behalf of the SWMD. Rates and charges must be paid by anyone who owns an improved lot or parcel that receives services from the SWMD. Qualifying services include solid waste collection, transfer, disposal, recycling, and processing services.

Rate and charges can be collected in two ways:

- 1) Through periodic billings made by the SWMD. The SWMD can bill for services through either a direct bill or through a utility bill issued by a county waste district, a county sewer district, or another political jurisdiction that provides a public utility service.
- 2) Through an improved parcel assessment (collected as a property tax).

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:

- Revenue from the sale of recyclables.
 - User fees (such as fees charged to drop off hard-to-recycle materials)
 - 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, loans, or bonds.
1. Fees Collected via Designation Agreements

In June 2007, in accordance with Ohio Revised Code 343.014, the Board of Directors adopted designation to ensure adequate financing to implement the approved solid waste plan. As part of the Designation, contracts were signed with solid waste facilities accepting SWMD waste to remit a \$5.50 per ton contract fee to the District. The Policy Committee of the Geauga-Trumbull Solid Waste Management District has decided to continue to use/include a facility designation fee of \$5.50 per ton to fund the solid waste plan until 2027 when a fee increases to \$7.50 is expected. The contract 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 District

2. Other Funding Mechanisms

The District may receive funding from other sources. Other sources as described below are typically 10 percent or less of contributing funding.

Recycling Revenue:

The District receives revenue from the sale of collected recyclable materials. The District used the average revenue received from 2022 to 2023 as a baseline value for projections and applied a 3% inflation factor for future values. The District averaged about \$11,000 annually from this source.

Reimbursements:

Reimbursement revenues are miscellaneous monies resulting from refunds and reimbursements. Reimbursement revenue is not guaranteed and therefore is not projected during the planning period.

Grants:

Funds received from Ohio EPA grants and other grants as applied for by the District. Grant funds are not guaranteed and therefore are not projected during the planning period.

Interest:

Funds are received as interest for the accounts that hold the District’s fund balance. The District used the average revenue received from 2018 to 2023 as a baseline value for projections and applied a 1% inflation factor for future values. The District averaged about \$92,000 annually.

Other:

Other revenue was held at the historic annual average through the planning period.

Table 6-1 Summary of Revenue

Year	Designation Fees	Other Revenue					Total Revenue
		Recycling Revenue	Reimbursements	Grants	Interest	Other	
Reference Year							
2022	\$1,718,368	\$9,381	\$0	\$85,000	\$60,110	\$4,575	\$1,877,434
Planning Period							
2026	\$1,755,957	\$11,428	\$0	\$0	\$93,441	\$10,164	\$1,870,990
2027	\$2,433,680	\$11,771	\$0	\$0	\$94,375	\$10,164	\$2,549,990
2028	\$2,474,028	\$12,124	\$0	\$0	\$95,319	\$10,164	\$2,591,635
2029	\$2,515,580	\$12,488	\$0	\$0	\$96,272	\$10,164	\$2,634,504
2030	\$2,558,388	\$12,863	\$0	\$0	\$97,235	\$10,164	\$2,678,650
2031	\$2,602,507	\$13,249	\$0	\$0	\$98,207	\$10,164	\$2,724,127

Source: Appendix O, Table O-5 and O-6

C. Expenses

Overview of How Solid Waste Management Districts Spend Money

SWMDs can spend revenue on 10 purposes named in law. All 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.

Typically, most of a SWMD's budget is used to implement the approved solid waste management plan (allowable use 2). Expenses a SWMD can incur 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 (such as curbside recycling services).
- paying for community clean-up programs.

Table 6-2 below summarizes the expected expenses for this solid waste management plan update. Further information regarding expenses can be found in Appendix O.

Table 6-2 Summary of Expenses

Expense Category	Reference	Planning Period					
	2022	2026	2027	2028	2029	2030	2031
Plan Prep/Monitoring	\$0	\$7,500	\$7,500	\$38,320	\$38,320	\$7,500	\$7,500
District Administration	\$461,978	\$532,968	\$548,957	\$565,426	\$591,989	\$609,748	\$628,041
Facility Operation	\$202,875	\$595,783	\$618,413	\$641,961	\$666,464	\$691,964	\$718,505
Drop-Off Recycling	\$974,525	\$981,450	\$1,018,530	\$1,062,136	\$1,094,000	\$1,126,820	\$1,160,624
Other Recycling Collection	\$6,000	\$0	\$0	\$0	\$0	\$0	\$0
Special Collections	\$145,443	\$162,747	\$163,130	\$163,524	\$163,929	\$164,347	\$164,778
Yard Waste/Organics	\$0	\$0	\$0	\$0	\$10,000	\$10,000	\$10,000
Education/Awareness	\$54,704	\$46,240	\$47,627	\$49,056	\$53,778	\$55,391	\$57,053
Market Development	\$11,153	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Service Contracts	\$391,717	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Feasibility Studies	\$0	\$25,000	\$0	\$0	\$0	\$0	\$0
Dump Cleanup	\$9,001	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
Litter Collection	\$15,990	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Debris Management	\$0	\$0	\$5,000	\$0	\$5,000	\$0	\$5,000
Health Department	\$51,517	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
Total Expenses	\$2,324,904	\$2,486,688	\$2,544,157	\$2,655,422	\$2,758,479	\$2,800,771	\$2,886,501

D. Budget Summary

Table 6-3 Budget Summary

Year	Revenue	Expenses	Net Difference	Ending Balance
Reference Year				
2022	\$1,877,434	\$2,324,904	-\$447,470	\$4,441,487
Planning Period				
2026	\$1,870,990	\$2,486,688	(\$615,698)	\$2,514,255
2027	\$2,549,990	\$2,544,157	\$5,833	\$2,520,089
2028	\$2,591,635	\$2,655,422	(\$63,787)	\$2,456,302
2029	\$2,634,504	\$2,758,479	(\$123,975)	\$2,332,327
2030	\$2,678,650	\$2,800,771	(\$122,121)	\$2,210,206
2031	\$2,724,127	\$2,886,501	(\$162,374)	\$2,047,831

APPENDIX A

MISCELLANEOUS INFORMATION

Appendix A. Miscellaneous Information

A. Reference Year

The reference year for this solid waste management plan is 2022.

B. Requirements of County and Joint Solid Waste Management Districts

The planning period for this solid waste management plan is 2026 to 2040.

C. Goal Statement

The District will achieve the following Goal:

Goal 2: The SWMD shall reduce and recycle at least 25% of the solid waste generated by the residential/commercial sector.

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

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

Table A.1 Residential/Commercial Sector Data Differences

Material	Updated Quantity (tons)	2022 ADR (tons)	Difference (tons)
Appliances/ "White Goods"	333	103	230
Household Hazardous Waste	64	64	0
Used Motor Oil	20	46	-25
Electronics	399	197	202
Scrap Tires	4,044	4,024	20
Dry Cell Batteries	0	0	0
Lead-Acid Batteries	111	51	60
Food	716	686	30
Glass	131	280	-149
Ferrous Metals	14,278	184	14,095
Non-Ferrous Metals	544	110	433
Corrugated Cardboard	17,588	12,242	5,347
All Other Paper	2,239	2,349	-110
Plastics	164	320	-156
Textiles	429	429	0
Wood	4,832	601	4,231
Rubber	0	0	0

Material	Updated Quantity (tons)	2022 ADR (tons)	Difference (tons)
Commingled Recyclables (Mixed)	8,791	14,626	-5,835
Yard Waste	32,922	32,933	-11
Other (Aggregated)	516	660	-144
Total	88,120	69,902	18,218

Source: District internal data and Annual District Report 2022

The District submitted the 2022 ADR totals in May of 2023 in accordance with Ohio EPA’s Annual District Report timeline. However, upon the start of this plan update, the District discovered during its analysis that data was missing from the data tracking spreadsheets. There was a file error that prevented data from being saved correctly, causing the file to become corrupt and inaccurate. The negative difference values seen above are predominantly the result of this data corruption being corrected.

Furthermore, the District was able to document additional recovery from a few large generating businesses during this process. The net difference from these processes was a roughly 18,000 ton increase in diversion from the residential commercial sector.

Table A.2 Industrial Sector Data Differences

Material	Updated Quantity (tons)	2022 ADR (tons)	Difference (tons)
Appliances/ "White Goods"	0	0	0
Household Hazardous Waste	0	0	0
Used Motor Oil	0	0	0
Electronics	0	0	0
Scrap Tires	19	0	19
Dry Cell Batteries	0	0	0
Lead-Acid Batteries	0	0	0
Food	0	0	0
Glass	0	0	0
Ferrous Metals	763	465	299
Non-Ferrous Metals	487	20	467
Corrugated Cardboard	300	103	197
All Other Paper	0	1	-1
Plastics	531	531	0
Textiles	0	0	0
Wood	11,659	12,485	-826
Rubber	0	0	0
Commingled Recyclables (Mixed)	103	0	103
Yard Waste	83	0	83

Material	Updated Quantity (tons)	2022 ADR (tons)	Difference (tons)
Other (Aggregated)	0	0	0
Total	13,948	13,606	343

An identical process as described above took place for the industrial data. The net difference was an additional 343 tons of creditable material.

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

The District’s beginning balance as of 2022 was \$4,888,956. This is calculated based on historical balances and District quarterly fee reports. However, according to Ohio EPA’s Summary Fee Report (SFR) for 2021, the District’s end balance for 2021 was \$4,882,654. By nature, the end balance of 2021 is also the beginning balance of 2022 and therefore there should be no difference. However, there is a difference of \$6,302.

The District traced this difference using historical records of both Ohio EPA SFRs and internal quarterly fee reports and found that this discrepancy extends backward to 2019. The District believes there is a minor typo in Ohio EPA’s SFR from 2019¹. The 2018² ending balance was \$5,321,504 while the 2019 beginning balance was \$5,315,202. These balances by nature should be identical. Using the 2018 end balance as the true beginning balance of 2019 balances the District’s budget.

2018 Summary Fee Report		2019 Summary Fee Report	
Beginning Balance	\$4,749,583.33	Beginning Balance	5,315,201.94
Ending Balance	\$5,321,504.51	Ending Balance	5,422,465.13

E. Process to Determine Material Change in Circumstances and Amend the Plan

In accordance with ORC 3734.56(D), the District’s Solid Waste Management Plan (Plan Update) must be revised if the Board of Directors (Board) has determined that “circumstances materially changed from those addressed in the approved initial or amended plan of the district.” A material change in circumstances shall be defined as a change that adversely affects the ability of the Board of Directors to: (1) assure waste disposal capacity during the planning period; (2) maintain compliance with applicable waste reduction strategies or access goals; (3) adequately finance the implementation of the Plan.

¹ <https://epa.ohio.gov/static/Portals/34/document/general/2019FSR.pdf>
² <https://epa.ohio.gov/static/Portals/34/document/general/2018FSR.pdf>

The Board of Directors shall make the determination of whether a material change in circumstances has occurred as follows:

1) Assurance of Waste Disposal Capacity

a. Decrease in Waste Generation

A material change in circumstances may occur if the temporary or permanent closure of a designated facility reduces the available landfill disposal capacity below the projected disposal requirements for solid waste generated within the District. The Board of Directors may conclude that a material change in circumstances has not occurred if the Board of Directors are able to secure commitments to landfill the waste previously received at a temporarily or permanently closed facility.

The Chairperson of the Board of Directors will determine whether it is necessary to convene a special meeting of the Board of Directors in the event a designated facility is temporarily or permanently closed to determine whether disposal capacity is available to the District from other designated landfills or whether a material change in circumstances has occurred.

b. Increase in Waste Generation

Future capacity needs of the District as outlined in this Plan are based on waste generation estimates. A significant increase in solid waste generation within the District may affect the demand for solid waste disposal capacity at designated solid waste facilities. A material change in circumstances may occur if waste generation increases and the increase consumes more solid waste disposal capacity and reduces the available disposal capacity below the projected disposal requirements for solid waste generated within the District. The Board of Directors may conclude that a material change in circumstances has not occurred if the Board of Directors is able to secure commitments to landfill the increased waste volume.

District staff shall review waste generation figures and report to the Board of Directors any significant increase or decrease in solid waste generation within the District.

c. Compliance with Applicable Waste Reduction or Access Goals Delay in Program Implementation or Discontinuance of Essential Waste Reduction or Recycling Activities

Pursuant to the Ohio Revised Code, the Ohio Administrative Code, and the State Plan, the Geauga-Trumbull Solid Waste District has established specific goals regarding waste reduction and recycling within the District. As established in the Plan, the District will utilize the access goal. The District Director will prepare an annual District report. The annual District report will identify any significant delays in program implementation, changes to waste reduction strategies, recycling strategies, or changes to the implementation schedule of the District Plan for the following year. If the Board of Directors is able to implement new programs or modify existing programs to meet the access goal, the Board of Directors may determine that a material change has not occurred.

d. Financing of Plan Implementation: Decrease in Waste Generation

The District relies on revenue from fees paid pursuant to contract agreements with designated solid waste facilities that receive solid waste generated within the District. A significant reduction in the generation of solid waste within the District could result in a decrease in revenue and adversely affect the ability to finance implementation of the Plan. The Director will monitor the revenue and inform the Board of Directors if a significant decrease in revenue has occurred. A financial assessment report will identify programs and budgeted expenditures that may be adversely affected by the reduction in revenue.

e. Procedures where Material Change in Circumstances has Occurred

If at any time the Board of Directors determines that a material change has occurred and a revision to the Plan is necessary, the Board shall direct the Policy Committee to prepare a Draft Amended Plan. The Board of Directors shall proceed to adopt and obtain approval of the Amended Plan in accordance with the Ohio Revised Code 3734.55 (A) through (C). The Board of Directors shall notify the Ohio EPA of a material change in circumstances within thirty (30) days of making such determination.

The Director shall notify the Chairperson of the Board of Directors within sixty (60) days of the:

- receipt of notice from a designated landfill owner or operator that there is a decrease in solid waste disposal capacity at that solid waste landfill. This would reduce the solid waste disposal that is required for the solid waste generated within the District;
- the Director determines that solid waste disposal capacity that provided a basis for the 3734.53(A) certification is no longer available;
- there is a decrease in solid waste generation within the District that reduces the revenue to fund implementation of the District Plan; or
- solid waste facilities with designation agreements with the District do not pay the required contract fee in an amount sufficient to fund implementation of the District Plan.

Within sixty (60) days of the receipt of the Director's notice that a material change in circumstances may exist, the Chairperson of the Board of Directors shall review the Director's notice with the Board of Directors to determine whether a material change in circumstances has occurred. If the Board of Directors determines that a material change in circumstances has occurred, the Board of Directors will notify the Chairperson of the District Policy Committee and request the Committee prepare an amendment of the District Solid Waste Management Plan as required by 3734.56(D) of the Ohio Revised Code.

The Board of Directors will determine whether there is sufficient solid waste disposal capacity at landfills within a reasonable distance of the District through a review of solid waste landfill disposal capacity records maintained by the Ohio EPA. A material change in circumstances has not occurred if the Board of Directors is able to secure solid waste landfill disposal capacity commitments from landfills within a reasonable distance of the District that replace the solid waste disposal capacity that is otherwise unavailable to the District.

No material change in circumstances exists if the Board of Directors increases the amount of the contract fee, as provided in the designation agreements by and between the District and solid waste facilities, in an amount sufficient to fund implementation of the District Plan.

DRAFT

APPENDIX B
RECYCLING INFRASTRUCTURE
INVENTORY

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 the Planning Period (Y/N)
NSC1	Chardon City	Waste Management	Geauga	Contract with Hauler	Bi-Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Single Stream	Multiple Options	Data not available	Y
NSC2	Burton Village	Waste Management	Geauga	Contract with Hauler	Bi-Weekly	Paper & Cardboard, Glass Bottles & Jars; Plastics Bottles, Jugs, Metal Cans	Single Stream	Multiple Options	Data not available	Y
NSC3	Middlefield Village	Major Waste Disposal	Geauga	Contract with Hauler	Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Single Stream	Multiple Options	Data not available	Y
NSC4	Cortland City	Republic Services	Trumbull	Contract with Hauler	Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs,	Single Stream	Multiple Options	Data not available	Y

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 the Planning Period (Y/N)
						Metal Cans				
NSC5	Liberty Township	Republic Services	Trumbull	Contract with Hauler	Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Single Stream	Multiple Options	Data not available	Y
NSC6	Lordstown Village	Republic Services	Trumbull	Contract with Hauler	Bi-Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Single Stream	Multiple Options	Data not available	Y
NSC7	Newton Falls Village	Ohio Valley Waste	Trumbull	Contract with Hauler	Bi-Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Single Stream	Multiple Options	Data not available	Y
NSC8	Weathersfield Township	Republic Services	Trumbull	Contract with Hauler	Bi-Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Single Stream	Multiple Options	Data not available	Y
NSC9	Hubbard City	Republic Services	Trumbull	Contract with Hauler	Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Single Stream	Multiple Options	Data not available	Y
Total									0	

Source: 2022 Annual District Report

Nine political jurisdictions in the District have non-subscription curbside services. Six of those programs are in Trumbull County and three are in Geauga County. All non-subscription curbside services are provided by

private haulers. Newton Falls Village, serviced by Ohio Valley Waste, switched service providers to Kimble in 2023. Also, in 2023, Waste Management discontinued the PAYT bag option service.

All haulers collect the main five recyclables (paper & cardboard, glass bottles & jars, plastic bottles, jugs, and metal cans). A few collect other materials such as cartons, or plastic tubs. Households are directed to check with the hauler for the acceptable material list. Throughout this Plan, the five main recyclables are listed to maintain consistent messaging with the website and other education collateral.

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 Collected	Type of Collection	PAYT (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Throughout the Planning Period (Y/N)
SC1	South Russell Village	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC2	Auburn Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC3	Bainbridge Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC4	Aquilla Village	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC5	Burton Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC6	Chardon Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles &	Various	Multiple Options	Data not available	Y

ID #	Name of Curbside Service	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 the Planning Period (Y/N)
					Jars, Plastics Bottles, Jugs, Metal Cans				
SC7	Chester Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC8	Claridon Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC9	Hambden Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC10	Huntsburg Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC11	Middlefield Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC12	Munson Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y

ID #	Name of Curbside Service	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 the Planning Period (Y/N)
SC13	Newbury Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC14	Russell Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC15	Troy Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC16	Montville Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC17	Parkman Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC18	Thompson Township	Geauga	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC19	Howland Township	Trumbull	Preferred Hauler Contract	Weekly	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles,	Single Stream	Multiple Options		Y

ID #	Name of Curbside Service	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 the Planning Period (Y/N)
					Jugs, Metal Cans				
SC20	Brookfield Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC21	Newton Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC22	Bazetta Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC23	Bloomfield Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC24	Braceville Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC25	Bristol Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC26	Champion Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles &	Various	Multiple Options	Data not available	Y

ID #	Name of Curbside Service	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 the Planning Period (Y/N)
					Jars, Plastics Bottles, Jugs, Metal Cans				
SC27	Farmington Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC28	Fowler Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC29	Greene Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC30	Gustavus Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC31	Hartford Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC32	Hubbard Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y

ID #	Name of Curbside Service	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 the Planning Period (Y/N)
SC33	Johnston Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC34	Kinsman Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC35	Mecca Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC36	Orangeville Village	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC37	Southington Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC38	Vernon Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
SC39	Vienna Township	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles,	Various	Multiple Options	Data not available	Y

ID #	Name of Curbside Service	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 the Planning Period (Y/N)
					Jugs, Metal Cans				
SC40	Yankee Lake Village	Trumbull	Various	Various	Paper & Cardboard, Glass Bottles & Jars, Plastics Bottles, Jugs, Metal Cans	Various	Multiple Options	Data not available	Y
Total								0	

Source: 2022 Annual District Report

40 subscription curbside recycling services are available throughout the District. Two villages have this service and every township in both Geauga and Trumbull Counties has subscription curbside service. In subscription-based service, residents must take voluntary action to sign up for and agree to pay for their curbside recycling service with a hauler. The District confirmed haulers servicing each of these political jurisdictions with trash service offer curbside recycling. Service is available for households to subscribe. However, for these political jurisdictions to be counted as curbside recycling subscription services in Ohio another step is needed.

A rule change to Ohio Administrative Code Rule 3745-27-90 states for subscription to be creditable as a subscription service, service must be available to residents that have trash service due to an ordinance, franchise agreement, or another mechanism established by the political subdivision. Subscription curbside services provided by waste haulers that offer residents a recycling option only when they subscribe to trash service does not qualify for the 25% credit when calculating demonstration towards the access goal in Appendix J.

2. Drop-off Recycling Locations

In 2024, the District’s contract for drop-off services went out for bid. Effective July 1, 2024, Kimble was selected as the drop-off service hauler. The existing drop-off sites will remain at their current locations. As part of this new contract, the District will also have a four cubic yard container for paper and cardboard at 30 schools across both counties. Due to this contract beginning after the reference year, these sites are not included below.

Table B-2a. Inventory of Full-Time, Urban Drop-Off Sites Available in 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 the Planning Period (Y/N)
FTU1	Newbury Township	Ohio Valley Waste	Geauga	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU2	Bainbridge Township	Ohio Valley Waste	Geauga	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU3	Chester Township	Ohio Valley Waste	Geauga	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU4	Russell Township	Ohio Valley Waste	Geauga	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU5	Notre Dame - Cathedral Latin School (Munson Township)	Ohio Valley Waste	Geauga	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU6	Chardon City	Ohio Valley Waste	Geauga	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU7	Girard City	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU8	Hubbard City	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU9	Hubbard Township	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU10	Niles City	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU11	Trumbull County Career and Technical Center (Champion Township)	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y

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 the Planning Period (Y/N)
FTU12	Trumbull County Administration Building (Warren)	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU13	Warren, Summit Academy	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU14	SWMD Administrative Building (Warren)	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU15	Liberty Township Schools	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU16	Shepherd of the Valley (Howland Township)	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU18	Warren Harding High School	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU19	Warren Township Sports Complex	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU20	Howland Township Fire Station	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Y
FTU21	Howland Recycling Center	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total	Temporarily closed in 2022. Reopened in 2023 and will be open through the planning period.
Total								2,719	

Source: 2022 Annual District Report

The District contracted service (provisioned containers and collection) for 19 full-time urban drop-off sites for residential use. All sites are open at least 40 hours every week. The District is unable to obtain a breakdown of recycling data by site.

The Howland Recycling Center site (formerly Clover Recycling) was closed for part of the year when Clover, a local non-profit, closed, and took several months to remove their property from the site. Once vacated, Howland Township reopened the site on a part-time basis but plans to do upgrades to allow it to be open full-time.

Table B-2b. Inventory of Part-Time, Urban Drop-Off Sites Available in 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 the Planning Period (Y/N)
PTU1	None								
Total									

Source: 2022 Annual District Report

There were no part-time urban drop-off locations available to residents in the reference year. All sites are available for at least 40 hours a week.

Table B-2c. Inventory of Full-Time, Rural Drop-Off Sites Available in 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 the Planning Period (Y/N)
FTR1	Burton Township	Ohio Valley Waste	Geauga	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	N
FTR2	Chardon Township	Ohio Valley Waste	Geauga	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR3	Claridon Township	Ohio Valley Waste	Geauga	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	N
FTR4	Huntsburg Township	Ohio Valley Waste	Geauga	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR5	Parkman Township	Ohio Valley Waste	Geauga	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y

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 the Planning Period (Y/N)
FTR6	Thompson Township	Ohio Valley Waste	Geauga	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR7	Troy Township	Ohio Valley Waste	Geauga	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR8	Geauga Collection Facility (Claridon)	Ohio Valley Waste	Geauga	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR9	Bloomfield Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR10	Braceville Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR11	Bristol Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR12	Farmington Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR13	Gustavus Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR14	Hartford Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR15	Johnston Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y

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 the Planning Period (Y/N)
FTR16	McDonald Village	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR17	Southington Township Hall	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR18	Vienna Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR19	Fowler Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR20	Newton Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR21	Kinsman Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y
FTR22	Mecca Township	Ohio Valley Waste	Trumbull	Contract with Hauler	24/7	Glass Bottles & Jars, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y

Source: 2022 Annual District Report

The District contracted service (provisioned containers and collection) for 22 full-time rural drop-off sites for residential use. The sites are open during daylight hours. All sites are open at least 40 hours every week. The District is unable to obtain a breakdown of collection data by site.

The Burton and Claridon Township drop-off sites were discontinued in 2022 when the Geauga Collection Facility opened. Both sites were only a few minutes from the new location, and both suffered from regular illegal dumping. Rather than upgrade the sites with cameras, additional lighting, etc., the property owners opted to close the sites and direct residents to the new facility location.

Table B-2d. Inventory of Part-Time, Rural Drop-Off Sites Available in 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 the Planning Period (Y/N)
PTR1	None								

Source: 2021 Annual District Report

There were no part-time rural drop-off recycling locations available to residents in the reference year.

Table B-2e. Inventory of Other Drop-Off Sites Available in 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 the Planning Period (Y/N)
OD1	Trumbull County Engineer's Office (Warren)	Ohio Valley Waste	Trumbull	Contract with hauler	24/7	Glass, Paper & Cardboard, Plastics Bottles & Jugs, Metal Cans	Y	Included in Total recorded in Table B-2a	Y

The District contracted service (provisioned containers and collection) for one full-time captive drop-off site. This captive site is for County use only and not publicly available.

3. Mixed Municipal Solid Waste Recovery Facility

Table B-3. Mixed Solid Waste Material Recovery Facility

Name of Facility	Location	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								

Source: 2021 Annual District Report

A mixed solid waste materials recovery facility (MRF) gives residents access to recycling opportunities by removing recyclables from trash for residents. In 2022, no mixed solid waste material recovery facilities accepted District-generated waste.

B. Curbside Recycling and Trash Collection Service Providers

Table B-4. Inventory of 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
Warren City Environmental Services	Trumbull	N	X	X			
Champion Disposal	Trumbull	N	X	X	X		
Sunburst Environmental	Trumbull	N	X	X		X	
Waste Management of Ohio Chardon	Geauga	N	X	X	X	x	X
Republic Services of Cleveland	Geauga	N	X	X	X	x	X
Ohio Valley Waste Services	Trumbull and Geauga	N	X	X	X	X	X
Major Waste Disposal	Geauga	N	X	X		X	X
Rumpke	Geauga and Trumbull	Y	X	X		X	X
Republic Waste	Trumbull	Y	X	X	X	X	X
Waste Management Youngstown Hauling	Trumbull	N	X	X			
Kimble	Geauga and Trumbull	N	X	X		X	
Dumpster Bandit	Geauga	Y	X			X	
Bristol Disposal	Trumbull	Y	X				

Notes:
 PAYT = Pay-As-You-Throw

13 haulers were operating in the District in the reference year. Drop-off locations are serviced through a single hauler. The contract through 2024 was awarded to Ohio Valley Waste.

C. Composting Facilities

Table B-5. Inventory of Composting Facilities Used in the Reference Year

Facility Name	Compost Facility Classification	Publicly Accessible (Y/N)	Location	Food Waste (tons)	Yard Waste (tons)	Total
Sagamore Soils Twinsburg Rd Compost Facility	4	Y	1361 Twinsburg Rd, Macedonia, OH,44056		64.35	64
Mapledale Farm Inc	3	Y	12613 Woodin Rd, Chardon, OH,44024		672	672

Facility Name	Compost Facility Classification	Publicly Accessible (Y/N)	Location	Food Waste (tons)	Yard Waste (tons)	Total
Midwest Mulch	4	Y	10555 Kinsman Rd, Newbury, OH,44065		4,631	4,631
City of Wickliffe Composting Facility	4	Y	1290 E 289th St, Wickliffe, OH,44092		29	29
TRC Landscape Service Inc	4	Y	11220/11250 Kinsman Rd, Newbury, OH, 44065		2,941	2,941
Abate Landscaping	4	Y	7080 Mulberry Rd, Chesterland, OH,44026		73	73
Sagamore Soils Compost	4	Y	2001 E Barlow Rd, Hudson, OH,44236		15	15
Hauser Services	4	Y	17917 Madison Rd, Middlefield, OH,44062		24,009	24,009
Van Ness Inc	3	Y	10500 Kinsman Road, Newbury, OH,44065		0	0
Pro Tree Service	4	Y	8753 Overlook Drive, Kirtland, OH,44094		0	0
City of Warren Water Pollution Control Center	4	Y	2323 Main Ave SW, Warren, OH,44481		487	487
Total				0	32,921	32,921

Source:2022 Ohio EPA Compost Facility Planning Report

Organic waste is a valuable material that has beneficial uses such as soil conditioners, erosion control, improved soil nutrient retention, etc. Ohio law defines composting as a method of solid waste disposal using controlled biological decomposition. Composting activities occurring at a residence and those activities using less than 500 square feet at a non-residential location are not subject to Ohio’s composting regulations. Composting facilities are classified according to the feedstocks they are allowed to accept and are required to obtain a registration, license, and/or permit from Ohio EPA as applicable ¹.

Eleven registered composting facilities reported receiving yard waste, six of these are located within the District boundaries.

D. Other Food and Yard Waste Management Programs

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

Facility or Activity Name	Activity Type	Location	Food Waste (tons)	Yard Waste (tons)
Hauler/Grocer Food Waste Data	Collection	Geauga	287	0
Hauler/Grocer Food Waste Data	Collection	Trumbull	398	0

¹ <https://epa.ohio.gov/divisions-and-offices/materials-and-waste-management/dmwm-programs/composting>

Total	686	0
-------	-----	---

Source(s): 2022 Ohio EPA Compost Facility Report

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

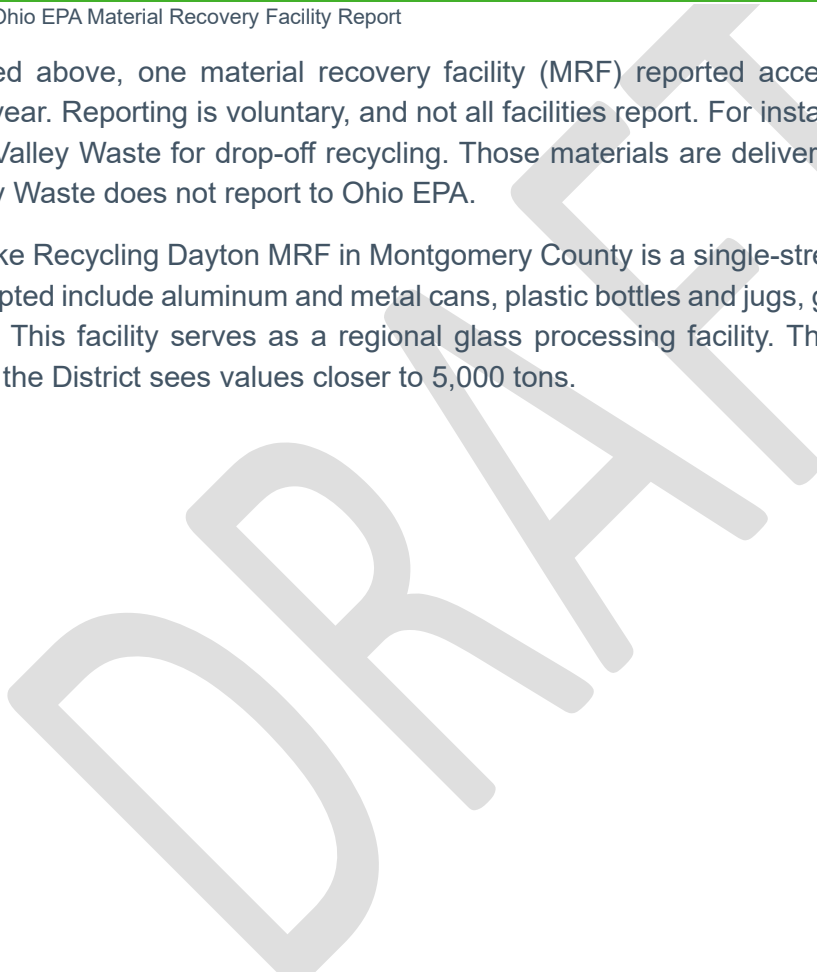
Table B-7. Inventory of Material Handling Facilities Used in the Reference Year

Facility Name	County	State	Type of Facility	Weight of Material Accepted from SWMD (tons)
Rumpke Recycling – Dayton	Montgomery	OH	MRF	5
Total				5

Source: 2022 Ohio EPA Material Recovery Facility Report

As indicated above, one material recovery facility (MRF) reported accepting District recyclables in the reference year. Reporting is voluntary, and not all facilities report. For instance, Geauga Trumbull contracts with Ohio Valley Waste for drop-off recycling. Those materials are delivered to a MRF for processing, yet Ohio Valley Waste does not report to Ohio EPA.

The Rumpke Recycling Dayton MRF in Montgomery County is a single-stream recycling processing center. Items accepted include aluminum and metal cans, plastic bottles and jugs, glass bottles and jars, cardboard, and paper. This facility serves as a regional glass processing facility. This number is very low for 2022, historically the District sees values closer to 5,000 tons.



APPENDIX C

POPULATION DATA

Appendix C. Population Data

A. Reference Year Population

Table C-1a. Reference Year Population Adjustments

Geauga County	Population
Before Adjustment	95,674
<i>Subtractions</i>	
<i>Hunting Valley Village</i>	133
After Adjustment	95,541

Source(s): Ohio Department of Development Population Characteristics and Projections, 2022

Trumbull County	Population
Before Adjustment	200,011
<i>Subtractions</i>	
<i>Youngstown City</i>	2
After Adjustment	200,009

Source(s): Ohio Department of Development Population Characteristics and Projections, 2022

Table C-1b: Total Reference Year Population

Unadjusted Population	Adjusted Population
295,685	295,550

The reference year population is taken from the Ohio Department of Development (ODOD). ODOD provided population numbers for 2021 based U.S. Census data by a governmental unit. ODOD also provides incremental estimates every five years through 2050. A straight-line projection method was used to estimate the years not included in the five-year increments. 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 two communities located in another District. Hunting Valley Village, the majority located in Cuyahoga County, and Youngstown City, the majority located in Mahoning County. Both were subtracted from the District's population. The total population change from the adjustment is 135 fewer residents.

B. Population Projections

Table C-2: Population Projections

Year	Geauga	Trumbull	Total District
2022	95,541	200,009	295,550
2023	95,784	198,696	294,479

Year	Geauga	Trumbull	Total District
2024	96,027	197,391	293,418
2025	96,271	196,095	292,366
2026	96,515	194,807	291,322
2027	96,761	193,528	290,288
2028	97,006	192,257	289,263
2029	97,253	190,994	288,247
2030	97,500	189,740	287,240
2031	97,747	188,494	286,242
2032	97,747	188,494	286,242
2033	97,747	188,494	286,242
2034	97,747	188,494	286,242
2035	97,747	188,494	286,242
2036	97,747	188,494	286,242
2037	97,747	188,494	286,242
2038	97,747	188,494	286,242
2039	97,747	188,494	286,242
2040	97,747	188,494	286,242

Source: Ohio Department of Development, "Projected 2050 Ohio County Populations: Percent Change 2020-2050 Projections Flatline after the sixth year of the planning period."

Population projections for the entire planning period are shown above in **Table C-2**. The District populations calculated for 2025, 2030, 2035, and 2040 are projection estimates from the Ohio Development of Development. Linear interpolation was used to develop the population estimates for years between the five-year intervals listed above. Projections are flatlined in the seventh year of the planning period (2032).

Population projections gauge future demand for services, but in projection calculations, there is room for errors given the difficulty associated with forecasting. **Table C-2** shows a steady decline in the population throughout the planning period. The total District population is expected to decrease by 3.25% from 2022 through 2032. This is an annual decline of 0.22%. The population is estimated to decrease to about 286,242 in 2032.

Geauga County is expected to grow through the planning period while Trumbull County is expected to decline through the planning period. The Ohio Department of Development estimates a roughly 20% decrease in population for Trumbull County by 2050.

To further research the projected decline in Trumbull County, the District contacted the Trumbull County Planning Commission. The Trumbull County Planning Commission stated that the ODOD population

estimates are used for their population projections as well and that while such a decrease is stark, it falls in line with the historical population trends. With no indicator of major changes in population movement for the area, the District expects to see this decline throughout the planning period.

draft

APPENDIX D

DISPOSAL DATA

Appendix D. Disposal Data

Appendix D provides an inventory of where waste was managed in the reference year, 2022, calculates the total waste disposed in the reference year, analyzes historical waste disposal quantities, and projects waste disposal for the planning period.

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)
Geneva Landfill	Lake	OH	15,629	6,108	217	21,954
Hancock County Landfill	Hancock	OH	0	0	0	0
Countywide RDF -Republic Services	Stark	OH	1,444	71		1,515
Mahoning Landfill Inc	Mahoning	OH	11,746	3,966	1,460	17,172
American Landfill, Inc.	Stark	OH	3	194	0	197
County Environmental of Wyandot	Wyandot	OH	0	0	2	2
Athens-Hocking Landfill	Athens	OH	0	140	0	140
Rumpke of Northern Ohio Inc Noble Road Landfill	Richland	OH	0	22	0	22
Port Clinton Landfill Inc	Ottawa	OH	1	0	1	2
Evergreen Recycling & Disposal	Lucas	OH	4	0	0	4
Lorain County II Landfill LLC	Lorain	OH	0	350	0	350
Apex Environmental, LLC	Jefferson	OH	42	0	0	42
Carbon Limestone Landfill LLC	Mahoning	OH	45,919	30,363	6,376	82,658
Kimble Sanitary Landfill	Tuscarawas	OH	9	403	3	414
Lake County Solid Waste Facility	Lake	OH	23,699		0	23,699
Seneca Landfill	Butler	PA	0	1,787	0	1,787
Total			98,497	43,404	8,059	149,959

Source(s): Ohio EPA, “2022 Ohio EPA Waste Flow Report”

Note:

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

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).

A wide variety of waste is disposed of in municipal solid waste landfills. Material disposed of at these facilities includes waste from households, businesses, institutions, and industrial activities. If permitted, asbestos construction and demolition debris, dewatered sludge, soil, and incinerated ash may also be disposed of in

landfills. Industrial waste includes excluded waste. Waste flows to landfills either by direct haul or through a transfer facility.

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

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

Source(s): Ohio EPA, “2022 Ohio EPA Waste Flow Report”

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).

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

Table D-1c. Total Waste Disposal in Landfills (Direct Haul)

Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total
98,497	43,404	8,059	149,959

Source(s): Ohio EPA, “2022 Ohio EPA Waste Flow Report”

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

The landfill waste reported in **Table D-1a** is assumed to be directly hauled from the consumer to the landfill, as is also shown in **Table D-1c**.

Table D-2. Reference Year Waste Transferred¹

Facility Name	Location		Waste Received from the SWMD			
	County	State	Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Girard Transfer Station	Trumbull	OH	23,081	9	534	23,623
Ohio Valley Waste Warren	Trumbull	OH	116,020	72	-	116,092
Cleveland Transfer/Recycling Station	Cuyahoga	OH	15,604			15,604
Kimble Transfer & Recycling - Canton	Stark	OH	326	-	35	361
Kimble Transfer & Recycling - Twinsburg	Summit	OH	2,336	-	14	2,349
Rumpke Waste Inc Broadview Heights Transfer Facility	Cuyahoga	OH	5,979			5,979
Harvard Road Transfer Station	Cuyahoga	OH	1,216			1,216
Browning Ferris Industries of Ohio, Inc- Glenwillow	Cuyahoga	OH	8,429	533		8,962
Tri-County Industries Transfer Station	Mercer	PA	50			50
Total			173,041	614	583	174,238

Source(s):

Ohio EPA “2022 Ohio EPA Waste Flow Report”

Ohio EPA “2022 Ohio Facility Data Report Tables”

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

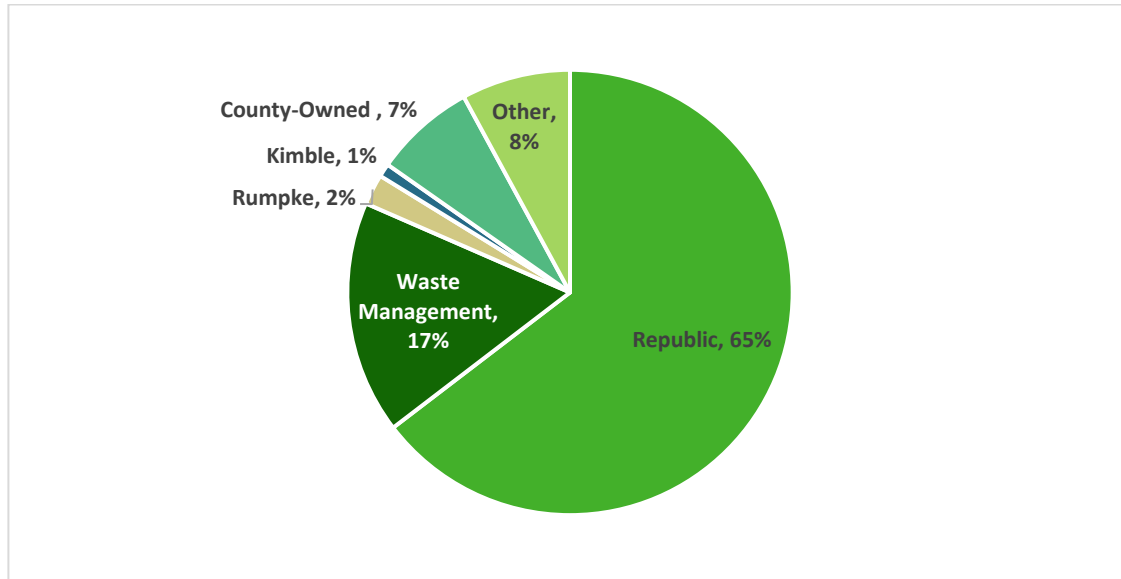
¹ The facilities listed in Table D-2 constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).

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.

Table D-2 above illustrates the waste transferred by the District in the reference year. Most of the waste transferred goes through the Ohio Valley Waste Warren Transfer Station. All facilities are in Ohio but one, which is located in Pennsylvania, and transferred minimal waste. Waste transferred through a transfer facility was hauled for final disposal to a landfill. In 2022, transfer facilities managing the District waste reported hauling to the destination landfill as follows:

Transfer Station	Destination Landfill	Location
Girard Transfer Station	Seneca Landfill	Butler, Pennsylvania
Ohio Valley Waste Warren	Carbon Limestone Landfill	Mahoning, Ohio
Cleveland Transfer/Recycling Station	American Landfill	Stark, Ohio
Kimble Transfer & Recycling - Canton	Kimble Sanitary Landfill	Tuscarawas, Ohio
Kimble Transfer & Recycling - Twinsburg	Kimble Sanitary Landfill	Tuscarawas, Ohio
Rumpke Waste Inc Broadview Heights Transfer Facility	Noble Road Landfill	Richland, Ohio
Harvard Road Transfer Station	Noble Road Landfill	Richland, Ohio
Browning Ferris Industries of Ohio, Inc- Glenwillow	Countywide RDF -Republic Services	Stark, Ohio
Tri-County Industries Transfer Station	Out-Of-State	Out-Of-State

Figure D-1 Estimated Market Share of Total Waste Disposal



Roughly 55% of the District’s waste is transferred. When transferred waste is included in the distribution for which landfills receive District waste, the landscape changes. **Figure D-1** reassesses the landfills receiving waste and shows the majority of the District’s waste landfilled is disposed of in the Republic-owned landfills.

Waste is disposed of in both public and privately owned landfills. About 7% is disposed of in public-owned landfills and the remaining is disposed of in privately owned landfills (**see Figure D-1**). Republic manages about 65% of the landfill volume. Waste Management is second at 17%, and the remaining 11% is distributed between Rumpke, Kimble, and other out-of-state owners. The waste market leader for the District in the reference year (2022) is Republic

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

Source(s):

Ohio EPA “2022 Ohio EPA Waste Flow Report”

Ohio EPA “2022 Ohio Facility Data Report Tables”, September 20, 2022.

¹ The facilities listed in Table D-3 constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).

Waste was not managed at incinerators during the reference year.

Table D-4. Reference Year Total Waste Disposed

	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)	% of Total Waste Disposed
Direct Hauled	98,497	43,404	0	141,901	45%
Transferred	173,041	614	0	173,655	55%
Incinerated	0	0	0	0	0%
Total	273,370	42,401	0	315,771	100%
Percent of Total	86%	14%	0%	100%	

Source(s):

Ohio EPA “2022 Ohio EPA Waste Flow Report”

Ohio EPA “2022 Ohio Facility Data Report Tables”

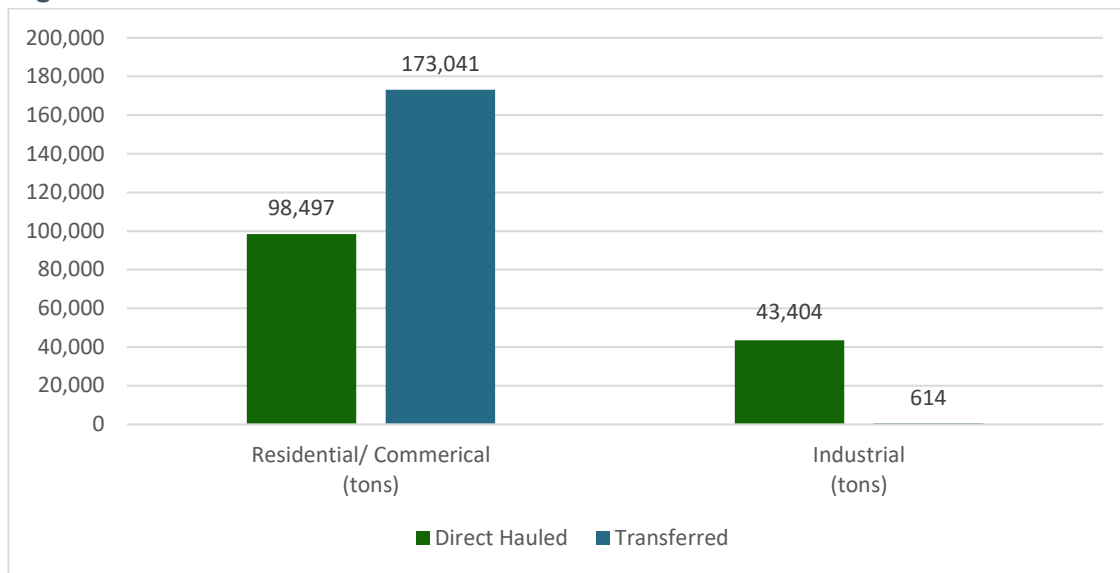
Note: Excluded wastes are classified as slag, uncontaminated earth, non-toxic fly ash, spent non-toxic foundry sand, and material from mining, construction, or demolition operations.

According to Ohio EPA Format 4.1, if excluded waste is 10% or less of total disposal in the reference year, then Districts are not required to account for excluded waste in the solid waste management plan. For the District, excluded waste accounts for less than 10% of total disposal in 2022 and will not be included in this solid waste management plan.

The District waste flow is fairly evenly distributed between transfer stations and landfills. The District transfers about 55% of its waste and directs hauls 45% to landfills. The District minimally utilized an out-of-state landfill in the reference year, disposing of roughly 2,000 tons of direct hauled waste at the Seneca Landfill in Pennsylvania.

The majority of the District’s waste disposal is from the residential/commercial sector. The District disposed of roughly 273,000 tons, 86%, from this sector. The remaining 14% of the material was disposed of from the industrial sector, roughly 42,000 tons. **Figure D-3** details the total waste flow from direct haul and transferred waste in the reference year.

Figure D-3 Total Waste Flow



Source(s):
Ohio EPA “2022 Ohio EPA Waste Flow Report”
Ohio EPA “2022 Ohio Facility Data Report Tables”

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 (tons)	Weight (tons)	Weight (tons)	Weight (tons)
2018	292,658	4.69	250,316	82,915	N/A	333,231
2019	293,029	4.69	250,666	73,082	N/A	323,748
2020	291,856	4.80	255,910	61,105	N/A	317,015
2021	297,374	4.90	266,073	47,478	N/A	313,551
2022	295,550	5.03	271,538	44,018	N/A	315,557

Source(s): Ohio EPA ADR Review Forms for 2018, 2019, 2020, 2021, and 2022 for population and waste disposal data.

Sample Calculation:

Residential/Commercial + Industrial + = Total Waste

$((\text{Residential/Commercial tons} * 2,000 \text{ pounds per ton}) / 365 \text{ days}) / \text{Population} = \text{Residential/Commercial disposal rate}$

Table D-5a Annual Percentage Change

	Residential / Commercial	Industrial Solid Waste	Excluded Waste	Total Waste
2018				
2019	0%	-12%	0%	-3%
2020	2%	-16%	0%	-2%
2021	4%	-22%	0%	-1%
2022	2%	-7%	0%	1%

Table D-5b Annual Change in Tons Disposed

	Residential / Commercial	Industrial Solid Waste	Excluded Waste	Total Waste
2018				
2019	350	-9,833	0	-9,483
2020	5,244	-11,977	0	-6,733
2021	10,163	-13,627	0	-3,464
2022	5,465	-3,460	0	2,006

Table D-5c Average Annual Percentage Change

Average Annual Percentage Change	
Residential/Commercial	2.06%
Industrial Waste	-14.46%
Excluded Waste	0.00%

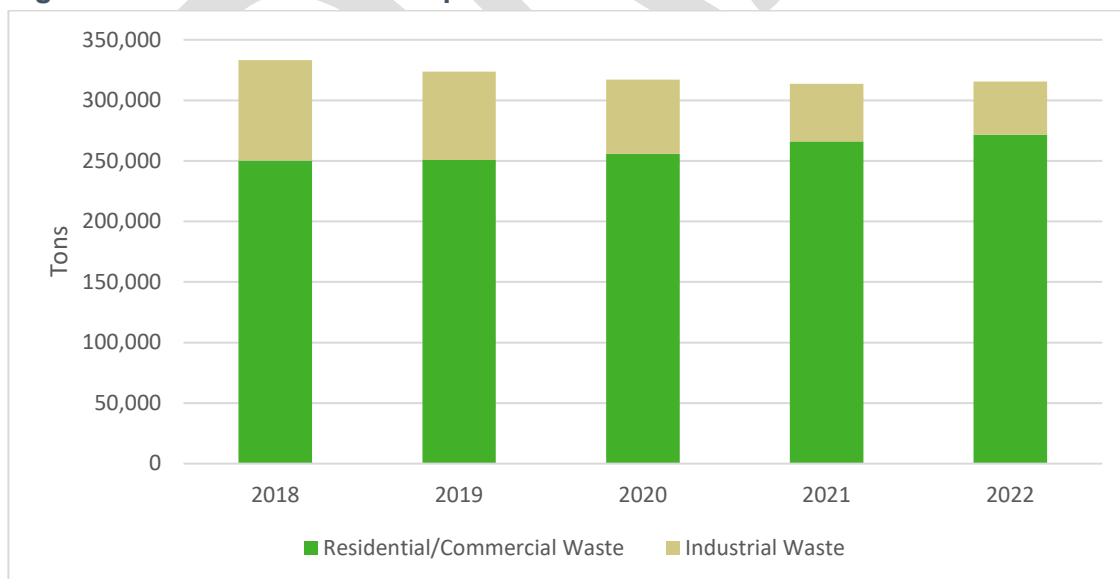
Table D-5d Average Annual Change in Tons Disposed

Average Annual Change in Tons Disposed	
Residential/Commercial	5,306
Industrial	-9,724
Excluded	N/A

Table D-5e Average Per Capita Disposal Over Time

Average Per Capita Disposal Over Time (5 Years)	
Residential/Commercial	4.82

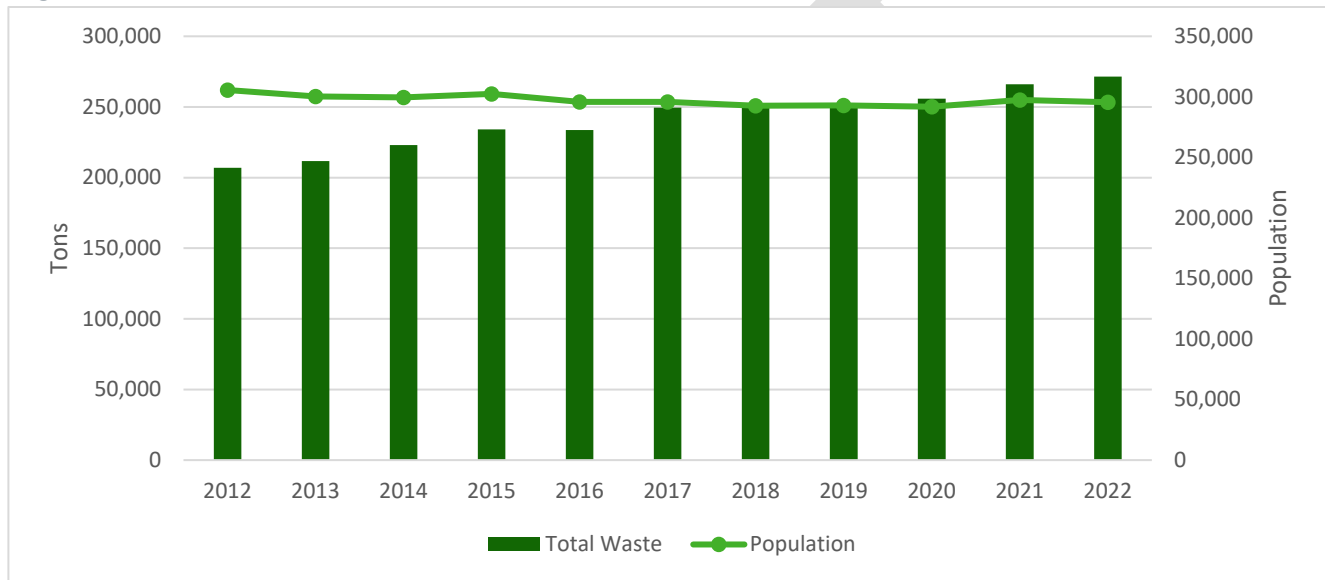
Figure D-4 Historical Waste Disposal



The disposal tonnages for the residential/commercial sector and the industrial sector are shown above. As seen, residential/commercial waste historically contributed the majority of all waste disposed. Overall, the District’s total waste disposed remained stable annually since 2018 (analysis does not include excluded waste). In 2021 and 2022 the District noticed, an increase in residential waste disposed of despite not receiving corresponding revenue from fees. The District met with Ohio EPA during this plan update and determined that the 2021 and 2022 waste values were likely inflated due to discrepancies in out-of-state reporting. Ohio EPA adjusted for this and the resulting disposal values for 2021 and 2022 returned to previously observed levels.

1. Residential/ Commercial Disposal

Figure D-5 Historical Residential/Commercial Disposal and Population



Residential/commercial waste disposed increased by 8% from 2017 to 2022. Looking back further, waste disposal increased by roughly 30% from 2012 to 2022 with the highest disposal tonnages occurring in 2022. Over the ten-year outlook, the population declined. Despite this, waste disposal increased, suggesting households and commercial businesses are generating more waste per capita.

Figure D-6 Historical Residential/Commercial Disposal and Disposal Rate

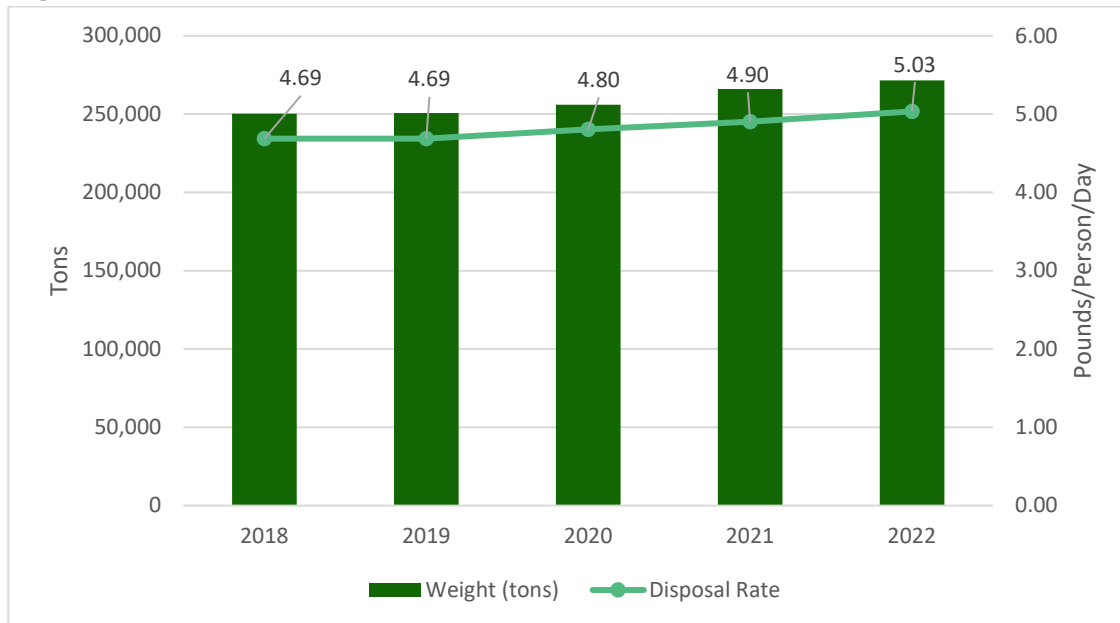
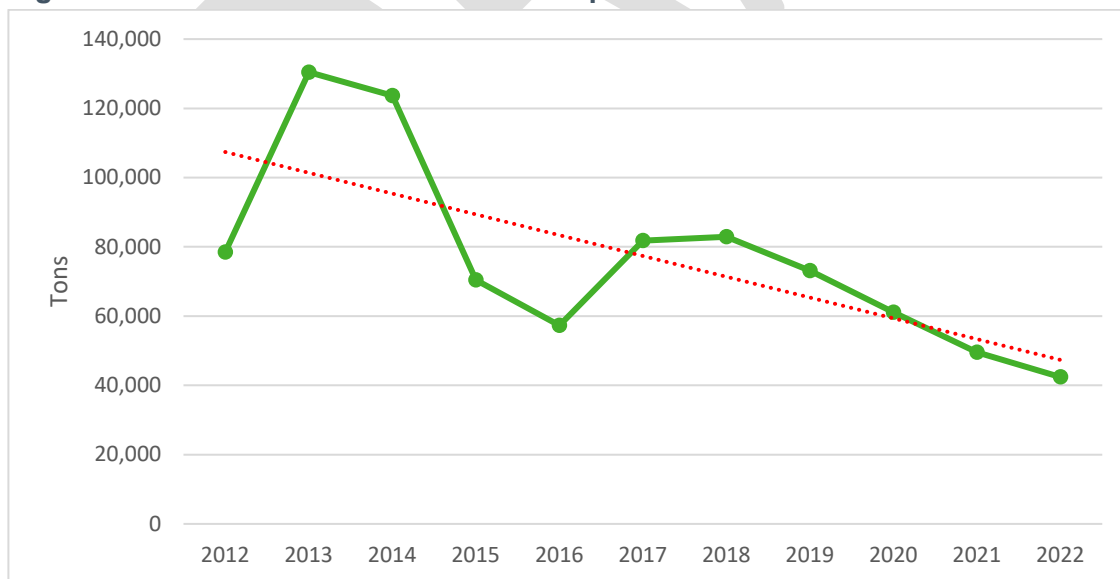


Figure D-6 shows the total residential/commercial waste disposal and the rate of disposal in pounds per person per day. The waste disposed increased by about 2.06% on average annually.

Residential/commercial solid waste for 2022 was 17% higher than originally projected in the previous solid waste management plan (2019 – 2033). The previous plan predicted a decrease in residential/commercial disposal rather than the increase seen.

2. Industrial Sector Disposal

Figure D-7 Historical Industrial Sector Disposal



Source(s): OEPA Disposal, Recycling, and Generation Report 2012 to 2022.

Industrial waste disposal shows greater fluctuations between 2012 and 2017. In the years following 2017, industrial waste disposal follows a declining trendline. From 2018 to 2022, industrial waste disposal decreased by roughly 15% on average annually. In 2022, waste disposal (42,000 tons) decreased to almost half of the waste disposed (83,000 tons) in 2018.

In the previous solid waste management plan (2019-2033), the District projected decreasing waste disposal for the industrial sector. The District projected about 68,000 tons of industrial disposal in 2022 in the previous plan. While this sector’s disposal has decreased, the rate is significantly faster than was projected.

Historically, the District had higher industrial disposal amounts because of fracking waste. In 2014, Trumbull County had 17 fracking sites in total¹. In 2015, five of these sites were shut down by the Ohio Department of Natural Resources which corresponds to the steep decrease in industrial waste seen in 2015. The steady decreases seen after 2018 are from the use of autofluff as an alternative daily cover in landfills which decreased the disposal numbers. However, this is expected to cease in 2023 and the District expects to see increasing industrial disposal as a result.

3. Excluded Waste Disposal

Per Ohio EPA Format 4.1, excluded waste will not be accounted for in this plan update as it comprises less than 10% of waste disposed.

C. Disposal Projections

Several methods 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)	55%
2022	271,538	44,018	0	315,557	173,655	
2023	274,254	46,219	0	320,473	176,361	
2024	276,996	48,530	0	325,526	179,142	
2025	279,766	50,956	0	330,723	182,001	
2026	282,564	53,504	0	336,068	184,943	
2027	285,390	56,180	0	341,569	187,970	
2028	288,244	58,988	0	347,232	191,087	
2029	291,126	61,938	0	353,064	194,296	

¹ Marcellus Drilling, <https://marcellusdrilling.com/category/ohio/trumbull-county/>

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)	55%
2030	294,037	65,035	0	359,072	197,602	
2031	296,978	68,287	0	365,264	201,010	
2032	299,947	68,287	0	368,234	202,644	
2033	299,947	68,287	0	368,234	202,644	
2034	299,947	68,287	0	368,234	202,644	
2035	299,947	68,287	0	368,234	202,644	
2036	299,947	68,287	0	368,234	202,644	
2037	299,947	68,287	0	368,234	202,644	
2038	299,947	68,287	0	368,234	202,644	
2039	299,947	68,287	0	368,234	202,644	
2040	299,947	68,287	0	368,234	202,644	

Source(s):
2022 Ohio EPA ADR Review Form

1. Residential / Commercial Waste Projections

For the reference year and the nine years prior, the residential/commercial disposal averaged a 2% annual increase. To be conservative, the District projects an increasing disposal tonnage of 1% annually until 2032 when projections flatline.

Sample Calculation 2025:

$$2025 \text{ Value} = 2024 \text{ value} * 1.01$$

$$279,766 = 276,996 * 1.01$$

2. Industrial Waste Projections

Based on a ten-year historical analysis, the average annual percent change was -1.4%. However, the District expects to see industrial disposal rise over the planning period due to the District moving away from utilizing auto fluff as ADC in landfills. In recent years, the District has used roughly 4,000 tons a month of autofluff and is expected to return to the historical tonnage levels during the planning period. The District is projecting a 5% annual increase until 2032 for industrial waste. Using this value steadily returns the District to historic levels.

Sample Calculation 2025:

$$2025 \text{ Value} = (2024 \text{ value} * \text{annual growth rate}) + 2024 \text{ value}$$

$$50,956 = (48,530 * 1.05) + 48,530$$

3. Excluded Waste Projections

Per Ohio EPA Format 4.1, excluded waste will not be accounted for going forward in this plan update as it comprises less than 10% of waste disposed.

D. Waste Imports

The District does not have an active landfill located inside its county, therefore has no data on waste imports. Furthermore, there are no plans currently to develop a landfill in the District boundaries. As a result, there are no projections for waste imports.

Table D-7. Waste Imports

Year																							
Facility Name	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
None																							

DRAFT

APPENDIX E
RESIDENTIAL/COMMERCIAL REDUCTION
AND RECYCLING DATA

Appendix E. Residential/Commercial Recovery Data

This appendix presents the reduction and recycling data for the residential and commercial sectors in the 2022 reference year. To avoid double-counting tonnages, adjustments were made to tonnages reported by different types of entities, such as programs, brokers, and scrap yards. A material is “double counted” if the quantities from both respondents are calculated in the total recovery. A historical analysis of the residential/commercial sector’s recycling is included in this Appendix. Information in this section as well as information from other sources was used to calculate the recycling projections from 2022 to 2040 which are included at the end of this Appendix.

A. Reference Year Recovery Data

Table E-1 Commercial Survey Results

NAICS	Appliances	Electronics	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables	Yard Waste	Dry-Cell Batteries	Used Motor Oil	Other	Total
42		33				14,148		914	801			4,013				0	3		
51									211										
53												41	4						
54									1,190										
81					11					425									
92																			
Other																			
Unadjusted Total	-	33	-	-	11	14,148	-	914	2,202	425	-	4,054	4	-	-	0	3	-	7,933
Adjustments																			
Adjusted Total	-	33	-	-	11	14,148	-	914	2,202	425	-	4,054	4	-	-	0	3	-	7,933

Source: District surveys

Note: As part of the commercial survey, three scrap yards replied. Their numbers are included above and not in Table E-2.

Table E-1 presents the results obtained from the 2022 commercial survey efforts. The District issues a waste and recycling survey to capture diversion data for the commercial sector. In 2022, the District documented 7,933 tons of waste diversion.

Table E-2. Data from Other Recycling Facilities

Source of Materials	Electronics	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Lead-Acid Batteries	Wood	Commingled Recyclables (Mixed)	Yard Waste	Other	Total
Buybacks											
None											
Scrap Yards											
3 Reported	56	14,148	450	3,087		107					17,848
Brokers											
None											
Processor/ MRF's											
PR1					5						5
Total	56	14,148	450	3,087	5	107					17,853
Adj.											
Adj.Total	56	14,148	450	3,087	5	107					17,853

Source(s) of Information: 2022 Ohio EPA Material Recovery Facility and Commercial Recycling Data.

Note: As part of the commercial survey, three scrap yards replied. Their numbers are included above in Table E-1.

Table E-2 above contains information collected from other recycling facilities and Ohio EPA reports. Processors, buybacks, and MRFs capture recyclables and process them to prepare them for recycling. In 2022, the District had a MRF, which historically reported roughly 5,000 tons, not report any tonnages from the District. Typically curbside recycling tonnages would be included in the MRF report.

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

Ohio EPA Data Source	Glass	Plastic	Newspaper	Cardboard	Mixed Paper	Nonferrous	Ferrous	Other	Wood	Food	Commingled	Other	Total
Walmart		69		2,863	5	18						307	
Home Depot Corporation		10		304		26			415			3	
Target		14		349	1	7					3		
Dollar General		13		1,472	4								
CVS				22							5		
Family Dollar/ Dollar Tree				383									
Lowe's				30		32							
Aldi - Trumbull		7				576							
Kohl's		2		167									
Sam's Club		10		703	1	0			167			17	

Ohio EPA Data Source	Glass	Plastic	Newspaper	Cardboard	Mixed Paper	Nonferrous	Ferrous	Other	Wood	Food	Commingled	Other	Total
Giant Eagle		13		991	13						145	23	
Advance Auto Parts				9			4					154	
Walgreens				13.38							7		
Aldi - Geauga		3		291									
Unadjusted Total	-	140	-	7,598	23	658	4	-	583	-	160	504	9,671
Adjustments													
Adjusted Total	-	140	-	7,598	23	658	4	-	583	-	160	504	9,671

Source(s) of Information: 2022 Ohio EPA Material Recovery Facility and Commercial Recycling Data
 Assumptions: No adjustments were made to the data reported to Ohio EPA.

Quantities reported in **Table E-3** were obtained from the Ohio EPA Material Recovery Facility and Commercial Recycling Data Report. Ohio EPA reported a total of 9,671 tons of material diverted from commercial businesses within the District.

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

Other Programs or Sources of Data	Appliances	HHW	Used Motor Oil	Electronics	Scrap Tires	Dry Cell Batteries	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Commingled Recyclables (Mixed)	Yard Waste	Other	Total	
Curbside Recycling Services																				0	
Drop-Off Recycling Program																					0
OEPA Scrap Tire Data					4,024																4,024
OEPA Compost Data							686											32,921			33,607
Paper Shred Events													10								10
Electronic Collection				154																	154
Appliance Collection	158																				158
HHW Collection		64	17																		81
Battery Collection							3														3
Other Collection												1									1
Hauler Reporting	175		1	2	16	1	30	120	125	11	5,128		23	4	195	8,631	1	12		14,474	
Unadjusted Total	333	64	18	156	4,040	0	4	716	120	125	11	5,129	10	23	4	195	8,631	32,922	12	52,512	
Adjustments																					
Adjusted Total	333	64	18	156	4,040	0	4	716	120	125	11	5,129	10	23	4	195	8,631	32,922	12	52,512	

Source(s) of Information: 2022 Ohio EPA Scrap Tire Report, 2022 Ohio EPA Compost Report, Internal District Data

Table E-4 presents tonnages diverted through programs and services the District offers in the reference year, plus Ohio EPA’s scrap tire and compost reports. This table includes all residential and commercial programs/services through which materials being credited to total diversion were recovered. As mentioned previously, curbside recycling program tonnages are typically included in the MRF reports. The lack of MRF reporting in 2022 is a gap in capturing the diverted tonnages through curbside recycling tonnages. The District diverted a total of 52,512 tons from other recycling programs and sources, most of which was yard waste. See the analysis in Appendix B for more information on yard waste diversion.

A unique program the District has is its hauler reporting system. As part of the solid waste plan rules, haulers operating in Geauga or Trumbull County must register with the District. Each April, notices are sent to all the haulers, especially curbside trash haulers and dumpster companies. The District sends paper packets each year, requesting information about the materials they collected the previous year, as well as data about their fleet and route areas where they operate. Haulers have the option to respond to the forms in the packet or go to the District website and complete the forms online. The District’s curbside and drop-off hauler does report to the District in these reports but is unable to give tonnages by location. Therefore, to avoid double counting and attribution errors, the District does not attempt to separate tonnages by program.

Table E-5 Residential/Commercial Material Recovered in Reference Year

Material	Quantity (tons)
Appliances/ "White Goods"	333
Household Hazardous Waste	64
Used Motor Oil	21
Electronics	245
Scrap Tires	4,040
Dry Cell Batteries	0
Lead-Acid Batteries	111
Food	716
Glass	131
Ferrous Metals	14,277
Non-Ferrous Metals	1,120
Corrugated Cardboard	17,015
All Other Paper	2,240
Plastics	588
Textiles	4
Wood	4,831
Rubber	4
Commingled Recyclables (Mixed)	8,791
Yard Waste	32,922
Other (Aggregated)	516
Total	87,969

Source(s) of Information: 2022 ADR Calculation Spreadsheets, 2022 Ohio EPA MRF Reports, 2022 Ohio EPA Scrap Tire Report, 2022 District program data, 2022 Ohio EPA Compost Report, 2022 ADR Review Forms.

The District diverted 87,968 tons from the residential/commercial sector. **Table E-5** presents the quantities of each material diverted. A majority of the District's diverted waste is yard waste. Other notable quantities include corrugated cardboard, ferrous metals, and commingled recyclables.

Table E-6: Quantities Recovered by Program/Source

Program/Source of R/C Recycling Data	Quantities (Tons)
Commercial Survey	25,781
Data from Other Recycling Facilities	5
Ohio EPA Commercial Retail Data	9,671
Curbside Recycling Services	0
Drop-Off Recycling Program	0
OEPA Scrap Tire Data	4,024
OEPA Compost Data	33,607
Paper Shred Events	10
Electronic Collection	154
Appliance Collection	158
HHW Collection	81
Battery Collection	3
Other Collection	1
Hauler Reporting	14,474
Total	87,969

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

Table E-6 reports quantities diverted for each program/source. Recyclable materials are typically collected through a program and directed to a processor. These programs can be set up by the District or may happen with little to no District involvement. Processors capture the recyclables and process them to get them ready to be recycled. These are typically buybacks, processors, or MRFs. Recycling quantities reported in **Table E-6** will be used throughout the plan as reference year data.

B. Historical Recovery

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

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-Off Recycling Program	OEPA Scrap Tire Data	OEPA Compost Data	Paper Shred Events	Electronic Collection	Appliance Collection	HHW Collection	Battery Collection	Other Collection	Hauler Reporting	Totals
2018	0	2,412	6,104	Data not available	Data not available	4,995	38,132	0	116	11	200	2	0	11,054	63,026
2019	0	0	5,248	Data not available	Data not available	4,084	17,344	9	0	0	12	0	0	11,791	38,488
2020	0	35,416	6,545	Data not available	Data not available	3,765	36,271	20	146	2	83	0	0	21,586	103,834
2021	0	43,168	7,201	Data not available	Data not available	3,753	51,121	12	108	53	72	0	0	12,928	118,415
2022	7,933	17,853	9,671	Data not available	Data not available	4,024	33,607	10	154	158	81	3	1	14,474	87,969

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-Off Recycling Program	OEPA Scrap Tire Data	OEPA Compost Data	Paper Shred Events	Electronic Collection	Appliance Collection	HHW Collection	Battery Collection	Other Collection	Hauler Reporting	Totals
Table E-7a1 Annual Percent Change in Tons Recovered															
2018															
2019	N/A	-100%	-14%	N/A	N/A	-18%	-55%		100%	100%	-94%	100%	N/A	7%	-39%
2020	N/A	16865 043%	25%	N/A	N/A	-8%	109%	120%	N/A	N/A	581%	N/A	N/A	83%	170%
2021	N/A	22%	10%	N/A	N/A	0%	41%	-38%	-26%	3353%	-13%	N/A	N/A	-40%	14%
2022	N/A	-59%	34%	N/A	N/A	7%	-34%	-20%	43%	197%	13%	N/A	N/A	12%	-26%
Table E-7a2 Average Percentage Change in Tons Recovered															
	N/A	42162 95%	14%	N/A	N/A	0%	15%	21%	N/A	N/A	122%	N/A	N/A	15%	30%
Table E-7a3 Annual Change in Tons Recovered															
2018															
2019	0	-2,413	-856	N/A	N/A	-911	-20,788	9	-116	-11	-188	-2	0	737	-24,539
2020	0	35,417	1,297	N/A	N/A	-318	18,927	11	146	2	71	0	0	9,795	65,347
2021	0	7,751	656	N/A	N/A	-13	14,850	-8	-38	52	-11	0	0	-8,658	14,581
2022	7,933	25,314	2,470	N/A	N/A	272	-17,514	-2	46	105	9	3	1	1,546	-30,446
Table E-7a4 Annual Per Capita Recovery Rate (pounds/person/day)															
2018	0.00	0.05	0.11	N/A	N/A	0.09	0.71	0	0	0	0	0	0	0.21	1.18
2019	0.00	0.00	0.10	N/A	N/A	0.08	0.32	0	0	0	0	0	0	0.22	0.72
2020	0.00	0.66	0.12	N/A	N/A	0.07	0.68	0	0	0	0	0	0	0.41	1.95
2021	0.00	0.80	0.13	N/A	N/A	0.07	0.94	0	0	0	0	0	0	0.24	2.18
2022	0.15	0.33	0.18	0.00	0.00	0.07	0.62	0	0	0	0	0	0	0.27	1.63
Table E-7a5 Average Per Capita Recovery Rate															
	0.03	0.37	0.13	N/A	N/A	0.08	0.66	0.0002	0.002	0.001	0.002	0.0002	0.0000	0.27	1.53
Table E-7a6 Average Tons of Material Recovered															
	1,587	19,770	6,954	0	0	4,124	35,295	10	105	45	89	1	0	14,367	82,346

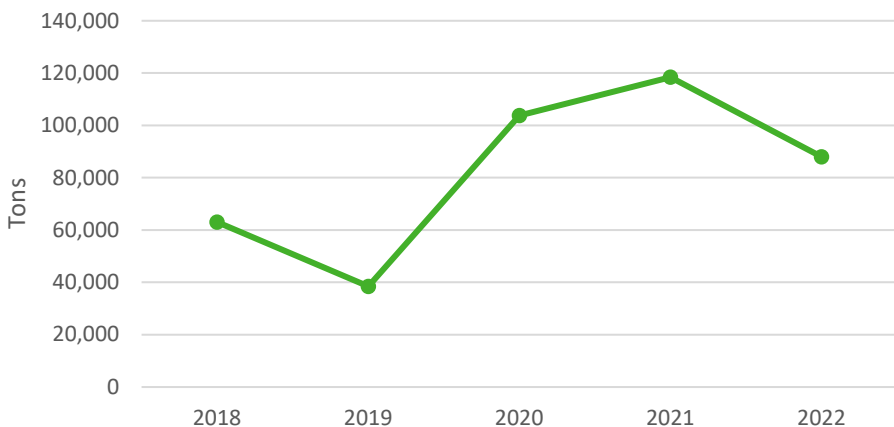
Tables E-7 through E-7a6 show historical recycling data collected from the District. The challenge with analyzing programmatic data such as above is that each year there may be differences in how the data is recorded. These differences can result in fluctuations between recording years and can present challenges for data analysis.

The District took precautions to ensure the above data does not double count data that may be included in multiple sources. Adjustments were made to the original numbers under the column Data From Other Recycling Facilities. The District receives data that falls under this column from Ohio EPA, its registered hauler reports, and commercial survey outreach efforts. To prevent any double counting, only data that did

not show up on Ohio EPA reports nor the district hauler reports were included in this column. 2020 and 2021 values are unusually high for this data source. The District believes some scrap yards miscredited material in their responses to the District in these years, resulting in uncreditable materials being credited towards diversion. Precautions were taken in 2022 to prevent this. The District requested itemized records from each scrap dealer and, using Ohio EPA’s accepted materials list, manually credited only those materials that were accepted.

In 2022 the District’s data received from MRFs plummeted from roughly 5,000 tons in 2021 to five tons. This is due to Waste Management reporting only five tons of material from the District on Ohio EPA’s MRF Report. To further investigate this drastic change, the District analyzed historic diversion totals and waste flow. The data suggests that material from the District did not flow to this MRF in 2022. Instead, it appears this material was either mistakenly attributed to another MRF/county or was taken to a location that did not report to Ohio EPA. A similar scenario occurred in 2019. In 2019, there were only 181 tons reported on Ohio EPA’s MRF report whereas the previous year in 2018 there were almost 7,000 tons reported. The following year in 2020, the District returned to historic levels with 5,500 tons reported from this source. The District consulted Ohio EPA on these occurrences but no clear reason was able to be discerned.

Figure E-3 Historic Residential/Commercial Recovery



Source: 2018 – 2022 District ADRs

As seen in the tables above, the five-year average tons of material recovered was roughly 82,000 with an increasing average percent change of 30%. Analyzing yearly, the recovery tonnages demonstrate volatile annual swings. Recorded diversion ranged from roughly 40,000 to about 120,000 between 2018 and 2022. These fluctuations are driven by a few factors. First, the organics recovery reported in the Ohio EPA

Compost Facility Report is inconsistent year over since 2018. The tonnages reported fluctuated negatively and positively with an absolute value of over 10,000 tons each year. The other contributing factor to large overall increases and decreases in documented recovery is from the commercial survey. Before 2020, the District was not receiving many responses for the commercial survey. In 2020 and 2021, the District was able to receive responses from a few large brokers that heavily inflated the diversion numbers. However, these were not commercial businesses but rather scrap yards and brokers. The District also questioned whether some of this material may not have been credible. As such, in 2022 the District reached out to these brokers in the yearly survey process but specifically asked for itemized material logs to better understand the materials being diverted. Further, the responses from these businesses were not recorded as commercial businesses but rather as scrap yards in **Table E-2**. The District removed uncreditable materials and adjusted the reported totals. This resulted in a lower (more accurate) total diversion number from the commercial survey.

Historically commercial business surveys and responses were not emphasized and thus data was lacking. Whereas, in 2022 the District increased its outreach efforts and was able to credit nearly 8,000 tons of material to the commercial sector. The District expects to continue to expand its outreach efforts for this sector and hopes to be able to demonstrate higher recovery rates from the commercial survey.

draft

C. Residential/Commercial Recovery Projections

Table E-8 Residential/Commercial Recovery Projections by Source

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-Off Recycling Program	OEPA Scrap Tire Data	OEPA Compost Data	Paper Shred Events	Electronic Collection	Appliance Collection	HHW Collection	Battery Collection	Other Collection	Hauler Reporting	Food Waste Drop-off Pilot	Totals
2022	7,933	17,853	9,671	<i>Included in Hauler Reporting</i>	<i>Included in Hauler Reporting</i>	4,024	33,607	10	154	158	81	3	1	14,474	0	87,969
2023	8,429	19,770	9,671			4,024	33,607	10	105	44	90	1	1	15,559	0	91,312
2024	8,925	19,770	9,671			4,024	33,607	10	105	44	89	1	1	16,726	0	92,974
2025	9,421	19,770	9,671			4,024	33,607	10	104	44	89	1	1	17,981	0	94,724
2026	9,917	19,770	9,671			4,024	33,607	10	104	44	89	1	1	20,818	1	99,468
2027	10,413	19,770	9,671			4,024	33,607	10	103	44	88	1	1	22,265	0	101,393
2028	10,909	19,770	9,671			4,024	33,607	10	103	44	88	1	1	25,167	0	104,775
2029	11,405	19,770	9,671			4,024	33,607	10	103	44	88	1	1	26,831	0	106,917
2030	11,901	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,621	0	109,186
2031	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2032	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2033	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2034	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2035	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2036	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2037	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2038	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2039	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654
2040	12,397	19,770	9,671			4,024	33,607	10	102	43	87	1	1	28,610	0	109,654

Sources: Year 2022 Data Sources: 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 and District Hauler Reports

Table E-8 details the projected residential/commercial recovery by source. The District's primary source of diversion comes from its commercial survey, Ohio EPA compost data, and hauler reports. See below for an explanation of how each source was projected. All projections are flatlined in the seventh year of the planning period (2032).

Commercial Survey Projections:

The District is committed to achieving Goal 2 through this planning period. To help achieve the required 25% diversion rate required by Goal 2, the District has set a goal to reach two additional businesses that have not previously responded to the commercial survey each year. The District intends to pursue data collection from larger generators over smaller ones. See *Appendix I* for more information on this program.

To estimate the potential increased recovery, the District calculated the average tons per response for the most recent survey year (2022). In this year, the District received 16 responses totaling 7,933 tons. This comes out to yield 496 tons per response. Expected increases annually are conservatively projected at 496 tons till 2032.

The District expects to be able to reach at a minimum two additional businesses annually.

Sample Calculation 2023: $7,933 + 496 = 8,429$ tons

Data from Other Recycling Facilities Projections:

Conservatively projections were held on the average observed historically from 2018 to 2020. Over this time there were fluctuations in MRF reporting to Ohio EPA. Contracts change which results in different MRFs processing the recyclables. There was a brief pause in service in 2020 due to the COVID-19 pandemic shutting down some operations. Other than that interruption, service and contracts continued and the reported tonnage was expected annually. The District expects that tonnage will continue to be reported or be captured in other reports. The decline in total diverted tonnage indicates the data is not being captured elsewhere.

Assuming the tonnages are diverted and not captured annually, the District held the historic average through the planning period.

Ohio EPA Commercial Retail Data Projections:

These projections were held constant throughout the planning period as this data is independently acquired by the Ohio EPA and is out of the District's control.

Curbside and Drop-Off Projections:

These are included in hauler reports and have not been projected separately because the hauler conglomerates collect source data.

Ohio EPA Scrap Tire Report Projections:

These projections were held constant throughout the planning period as this data is independently acquired by the Ohio EPA and is out of the District's control.

Ohio Compost Facility Report Projections:

These projections were held constant throughout the planning period as this data is independently acquired by the Ohio EPA and is out of the District's control.

Paper Shred Event Projections:

These projections were calculated based on the historical per capita recovery rate. The average annual per capita recovery rate was 0.0002 pounds per person per day. This number was multiplied by the respective year's projected population and converted into tons per year.

Sample Calculation 2023: $((0.0002 * 294,479) / 2000) * 365 = 10$ tons

Electronic Projections:

These projections were calculated based on the historical per capita recovery rate. The average annual per capita recovery rate was 0.003 pounds per person per day. This number was multiplied by the respective year's projected population and converted into tons per year.

Sample Calculation 2023: $((0.002 * 294,479) / 2000) * 365 = 105$ tons

Appliance Collection Projections:

These projections were calculated based on the historical per capita recovery rate. The average annual per capita recovery rate was 0.001 pounds per person per day. This number was multiplied by the respective year's projected population and converted into tons per year.

Sample Calculation 2023: $((0.001 * 294,479) / 2000) * 365 = 44$ tons

HHW Collection Projections:

These projections were calculated based on the historical per capita recovery rate. The average annual per capita recovery rate was 0.002 pounds per person per day. This number was multiplied by the respective year's projected population and converted into tons per year.

Sample Calculation 2023: $((0.002 * 294,479) / 2000) * 365 = 90$ tons

Battery Collection Projections:

These projections were calculated based on the historical per capita recovery rate. The average annual per capita recovery rate was 0.00002 pounds per person per day. This number was multiplied by the respective year's projected population and converted into tons per year.

Sample Calculation 2023: $((0.00002 * 294,479) / 2000) * 365 = 1$ ton

Other Collection Projections:

This value is held at 1 ton throughout the planning period and encompasses miscellaneous collection items the District receives that do not fall into one of the above categories.

Hauler Reporting Projections

These projections were calculated based on the historical per capita recovery rate. The average annual per capita recovery rate was 0.16 pounds per person per day. This number was multiplied by the respective year's projected population and converted into tons per year.

Additionally, applied estimates for curbside recovery for Girard City and Chester Township in 2026 and Niles City in 2028. These are identified communities the District will explore establishing curbside recycling services. See Appendix I for program descriptions.

Sample Calculation 2023:

2023: $((0.16 * 294,479) / 2000) * 365 = 14,474$ tons


2026: City of Girard = Assuming 50% of households participate potential recovery is 1,849 households x 768 lbs/hh/year / 2000 tons/yr = 710

2026: Chester Township = Assuming 50% of households participate potential recovery is 2,027 households x 768 lbs/hh/year / 2000 tons/yr = 778

2028: City of Niles = Assuming 50% of households participate potential recovery is 9,120 households x 768 lbs/hh/year / 2000 tons/yr = 1,347

Food Waste Pilot Drop-off

The District is interested in exploring the realm of food waste diversion and will conduct a pilot drop-off program in 2026 to help assess the feasibility of such a program. The District estimated one ton of material will be collected in 2026 but did not project out further due to this program being a pilot.



APPENDIX F
INDUSTRIAL REDUCTION AND RECYCLING
DATA

Appendix F. Industrial Recovery 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.

The Ohio EPA 2020 State Plan no longer requires Solid Waste Management Districts to demonstrate the industrial sector percentage goal of 66% diverted waste. Upon removal of this goal, Districts may choose whether to survey the industrial sector or not.

The Geauga Trumbull Joint Solid Waste Management District still surveys this sector, though in recent years since the removal of the percentage goal has placed more emphasis on the commercial survey.

A. Reference Year Recovery Data

Table F-1 Industrial Survey Results

NAICS	LAB	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables	Ash	Non-Excluded Foundry Sand	Sludge	Lime	Other	Total
14																	
21																	
27																	
31																	
32					103		531										
33			24	113			0									0	
34																	
37																	
39																	
42																	
49																	
51																	
53																	
Unadjusted Total	0	0	24	113	103	0	531	0	0	0	0	0	0	0	0	0	772
Adjustments																	0
Adjusted Total	0	0	24	113	103	0	531	0	0	0	0	0	0	0	0	0	772

Source: 2022 Annual District Report

Table F-1 accounts for material credited for waste reduction and recycling as reported by industrial businesses. 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

There were no other recycling facilities such buybacks, brokers, or processors that were reported to the District or Ohio EPA in 2022, therefore this table is omitted.

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

Other Sources of Data	LAB	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Ash	Non-Excluded Foundry Sand	Sludge	Lime	Other	Total
Hauler Reporting			739	374	197				11,659	19	103					83	13,174
<i>Unadjusted Total</i>			739	374	197				11,659	19	103					83	13,174
<i>Adjustments</i>																	0
<i>Adjusted Total</i>			739	374	197				11,659	19	103					83	13,174

Source: Annual District Report and Hauler Reports

The District has a mandatory hauler reporting system that requires all haulers operating in the District to report tonnages to the District. In 2022, the District had five haulers report diverting materials from the industrial sector, a majority of which was wood from a pallet service.

Historically, this is primarily where the District’s data for the industrial sector comes from. After the removal of the 66% industrial diversion goal with the 2020 State Plan, the District is focusing more heavily on other programs rather than the industrial survey.

Table F-4 Industrial Materials Recovered in the Reference Year

Material	Quantity (tons)
LAB	0
Food	0
Glass	0
Ferrous Metals	763
Non-Ferrous Metals	487
Corrugated Cardboard	300
All Other Paper	0
Plastics	531
Textiles	0
Wood	11,659
Rubber	19

Material	Quantity (tons)
Commingled Recyclables (Mixed)	103
Ash	0
Non-Excluded Foundry Sand	0
Flue Gas Desulfurization	0
Other (Aggregated)	84
Total	13,946

The District diverted 13,946 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	772
Data from other recycling facilities	0
Hauler Reporting	13,174
Total	13,946

In 2022, a vast majority of materials diverted from the industrial sector came from hauler reports. The industrial survey yielded 772 tons, roughly 6% of the total quantity reported.

B. Historical Recovery

Table F-6 Historical Industrial Recovery by Program/Source

Year	Industrial survey	Data from other recycling facilities	Hauler Reporting	Totals
2018			83,971	83,971
2019			12,576	12,576
2020			10,262	10,262
2021			459	459
2022	772	0	13,174	13,946

Table F-6a1 Annual Percentage Change in Tons Recovered

2018				
2019	N/A	N/A	-85%	-85%
2020	N/A	N/A	-18%	-18%
2021	N/A	N/A	-96%	-96%
2022	N/A	N/A	2773%	2942%

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

Year	Industrial survey	Data from other recycling facilities	Hauler Reporting	Totals
	N/A	N/A	644%	686%

Table F-6a3 Annual Change in Tons Recovered

2018				
2019	0	0	-71,395	-71,395
2020	0	0	-2,314	-2,314
2021	0	0	-9,803	-9,803
2022	772	0	12,716	13,488

Table F-6a4 Average Annual Change in Tons Recovered

193	0	-17,699	-17,506
-----	---	---------	---------

Table F-6a5 Average Tons of Material Recovered

772	0	24,088	24,243
-----	---	--------	--------

Source(s):

District Industrial Surveys for 2018 – 2022

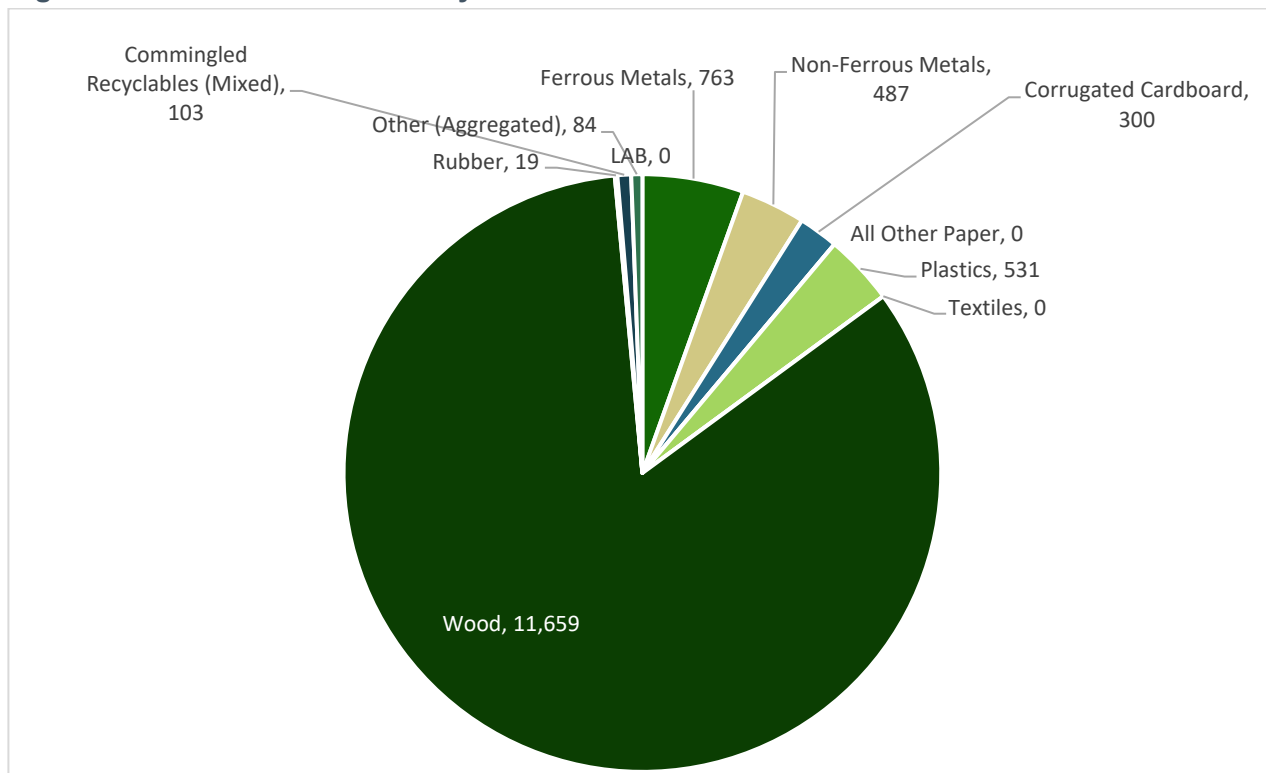
“Material Recovery Facility and Commercial Recycling Data” for 2018 – 2022

Hauler Reporting to District 2018 – 2022

Data from the industrial sector is gathered from industrial surveys, hauler reporting to District and the Ohio EPA Material Recovery Facility data. As seen from **Table F-6**, the majority of data stems from the District’s hauler reporting program. The District’s industrial data has been inconsistent over the last five years. As such, the District has been unable to determine whether large fluctuations have occurred. The thought as to why the District dropped so steeply from 2018 to 2019, is believed likely that material from brokers and haulers who reported were not creditable but were mistakenly credited. Since 2019, the District has had difficulties receiving data from the industrial survey response. COVID-19 had a large impact on the response rate. Those who do respond do so primarily through the hauler reporting program. This is a District specific rule that was created to help track the flow of solid waste in the District and who is transporting it. See Appendix Q for more information.

The previous plan projected the District’s industrial diversion to be 156,000 in 2022, stemming entirely from the industrial survey. As the District no longer prioritizes the industrial survey over other programs after the changes made in the 2020 State Plan, this number has not been reached.

Figure F-1 Industrial Diversion by Material



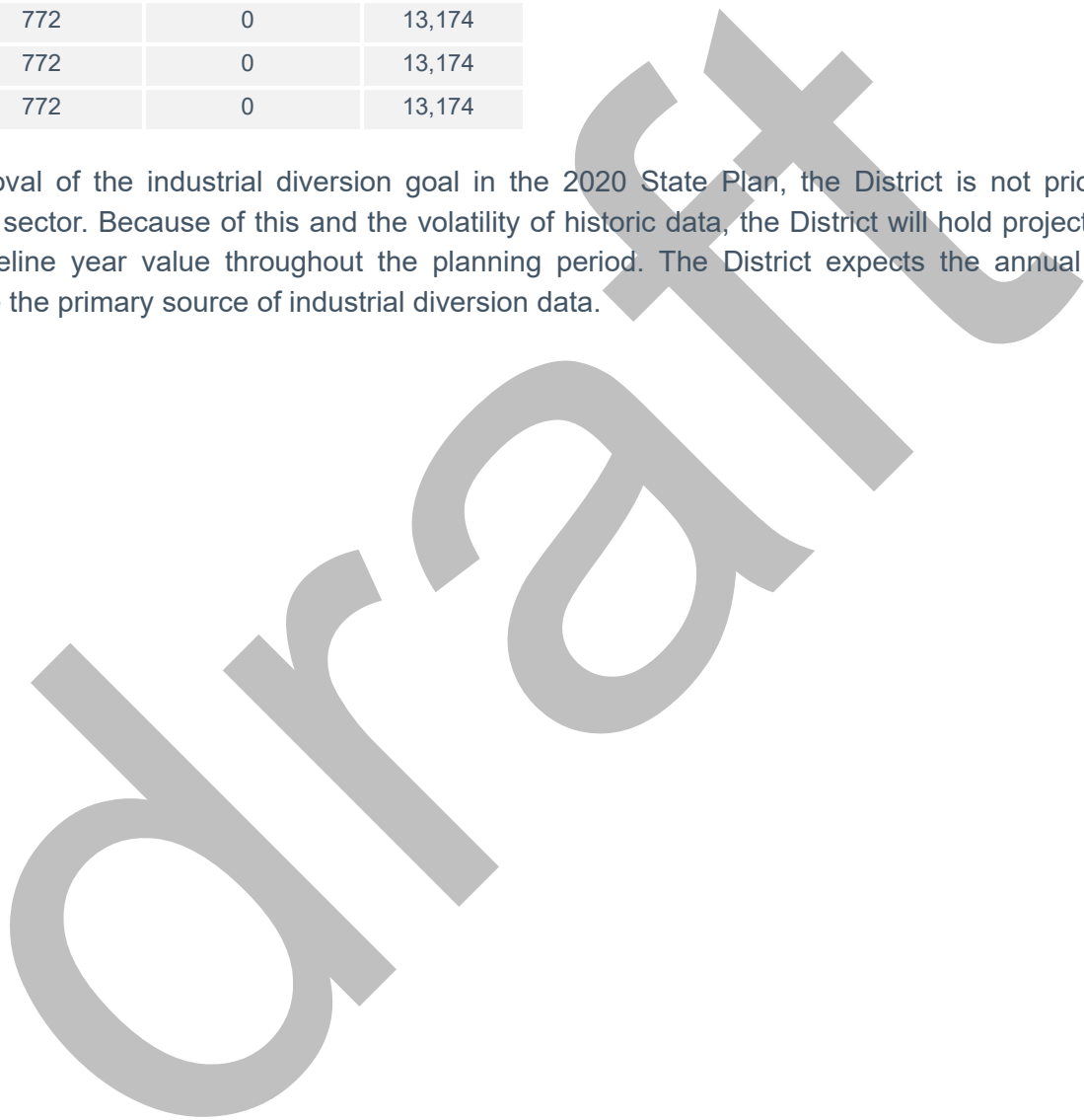
C. Industrial Recovery Projections

Table F-7. Industrial Recovery Projections

Year	Industrial Survey	Data From Other Recycling Facilities	Totals
2022	772	0	13,174
2023	772	0	13,174
2024	772	0	13,174
2025	772	0	13,174
2026	772	0	13,174
2027	772	0	13,174
2028	772	0	13,174
2029	772	0	13,174
2030	772	0	13,174
2031	772	0	13,174
2032	772	0	13,174
2033	772	0	13,174
2034	772	0	13,174

Year	Industrial Survey	Data From Other Recycling Facilities	Totals
2035	772	0	13,174
2036	772	0	13,174
2037	772	0	13,174
2038	772	0	13,174
2039	772	0	13,174
2040	772	0	13,174

With the removal of the industrial diversion goal in the 2020 State Plan, the District is not prioritizing surveying this sector. Because of this and the volatility of historic data, the District will hold projections at the 2022 baseline year value throughout the planning period. The District expects the annual hauler reporting to be the primary source of industrial diversion data.



APPENDIX G

WASTE GENERATION

Appendix G. Waste Generation

A. Historical Waste Generated

Table G-1 Reference Year and Historical Waste Generated

Year	Population	Residential/ Commercial				Industrial			Excluded	Total (tons)
		Disposed (tons)	Recycled (tons)	Generated (tons)	Per Capita Generated (ppd)	Disposed (tons)	Recycled (tons)	Generated (tons)		
2018	292,658	250,316	63,026	313,342	5.87	82,915	83,971	166,886	0	480,228
2019	293,029	250,666	38,488	289,154	5.41	73,082	12,576	85,658	0	374,812
2020	291,856	255,910	103,834	359,744	6.75	61,105	10,262	71,367	0	431,111
2021	297,374	266,073	118,415	384,488	7.08	47,478	459	47,937	0	432,425
2022	295,550	271,538	87,968	359,507	6.67	44,018	13,946	57,965	0	417,471

Source: Disposal Data from Appendix D, Recycle Data from Appendix E and F, 2018 – 2022 Annual District Reports

Total residential/commercial waste generated by the District was calculated by adding the quantities of waste disposed from Appendix D and quantities of recycled materials from Appendix E and F. Waste generation is generally a result of population growth, lifestyles, economic activity, and production practices. Quantities from disposal and recycling in the District from 2018 to 2022 are shown in **Table G-1**.

Residential/Commercial Waste:

Residential/commercial waste generation held relatively flat over the last five years, increasing minimally each year. The District’s residential/commercial recycling has been more volatile than its waste disposal. However, it is believed this is due to data collection rather than fluctuations in recycling activity.

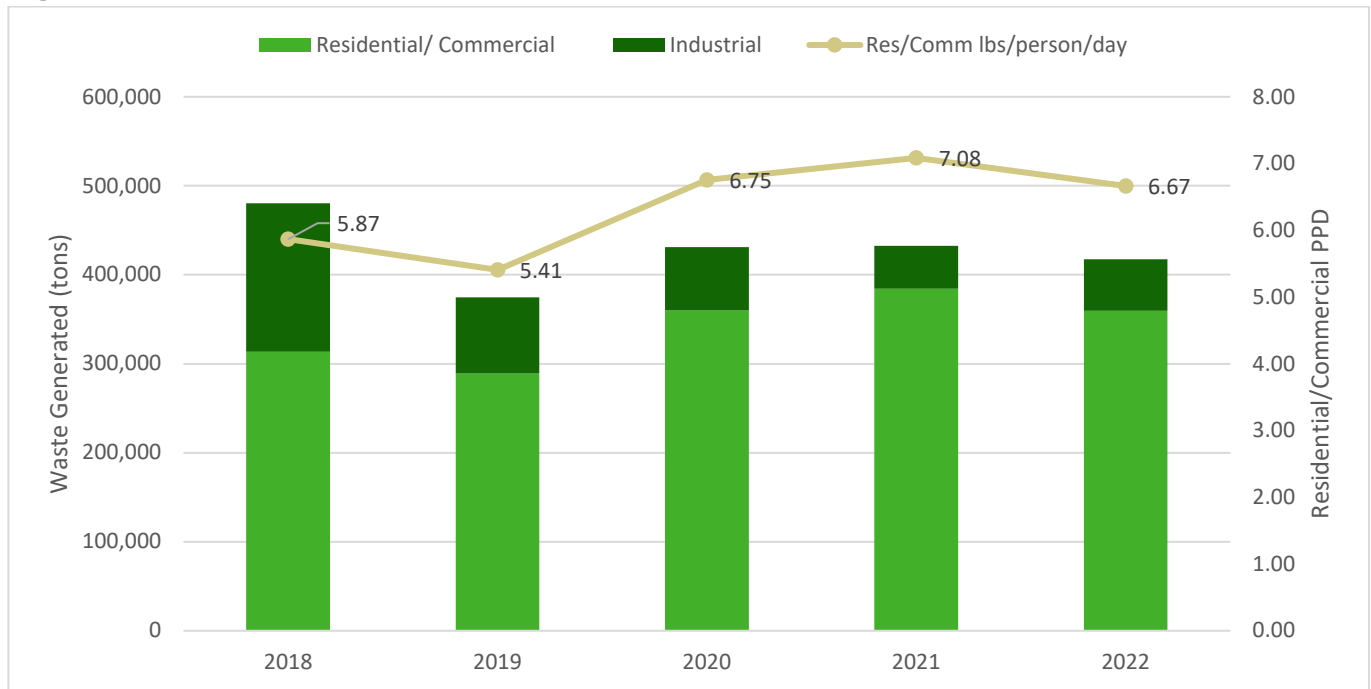
The District’s per capita waste generation increased from 5.87 pounds/person/day in 2018 to 6.67 pounds/person/day in 2022.

Industrial Waste:

Industrial waste generated has decreased by 66% since 2018. As discussed in Appendix D, the District historically has used autofluff as an alternative daily cover for landfills. The steady decreases seen after 2018 are from the use of autofluff as an alternative daily cover in landfills which decreased the industrial disposal numbers. However, this is expected to cease in 2023 and the District expects to see increasing industrial disposal as a result.

The other contributing factor to industrial waste generation is the decrease in industrial recycling. Beginning at a reported 83,000 tons of industrial waste diversion in 2018 the number currently sits at roughly 14,000 in 2022. The District believes there is significantly more industrial diversion than is being captured in industrial survey responses.

Figure G-1: Historic Waste Generated



B. Generation Projections

Table G-2 Generation Projections

Year	Population	Residential/ Commercial				Industrial			Exclud ed Waste (tons)	Total (tons)
		Disposal (tons)	Recycle (tons)	Generation (tons)	Per Capita Generati on (ppd)	Dispos al (tons)	Recyc le (tons)	Generati on (tons)		
2022	295,550	271,538	87,969	359,508	6.67	44,018	13,946	57,965	0	417,472
2023	294,479	274,254	91,312	365,566	6.80	46,219	13,946	60,165	0	425,732
2024	293,418	276,996	92,974	369,971	6.91	48,530	13,946	62,476	0	432,447
2025	292,366	279,766	94,724	374,490	7.02	50,956	13,946	64,903	0	439,393
2026	291,322	282,564	98,057	380,621	7.16	53,504	13,946	67,451	0	448,072
2027	290,288	285,390	99,998	385,388	7.27	56,180	13,946	70,126	0	455,514
2028	289,263	288,244	103,396	391,639	7.42	58,988	13,946	72,935	0	464,574
2029	288,247	291,126	105,555	396,681	7.54	61,938	13,946	75,884	0	472,565
2030	287,240	294,037	107,840	401,877	7.67	65,035	13,946	78,981	0	480,858
2031	286,242	296,978	108,324	405,301	7.76	68,287	13,946	82,233	0	487,534
2032	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504
2033	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504
2034	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504

Year	Population	Residential/ Commercial				Industrial			Exclud ed Waste (tons)	Total (tons)
		Disposal (tons)	Recycle (tons)	Generation (tons)	Per Capita Generati on (ppd)	Dispos al (tons)	Recyc le (tons)	Generati on (tons)		
2035	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504
2036	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504
2037	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504
2038	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504
2039	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504
2040	286,242	299,947	108,324	408,271	7.82	68,287	13,946	82,233	0	490,504

Source(s) of Information:

Disposal from Appendix D

Recycled from Appendices E and F

Populations: Ohio Department of Development, "Projected 2050 Ohio County Populations: Percent Change 2020-2050, December 2022.

Note: All projections are flatlined in the seventh year of the planning period (2032).

Historically, the District demonstrates annual increases in the amount of residential/commercial waste disposed of. This is the primary driver of the District’s waste generation. The District expects that despite a decreasing population this trend will continue throughout the planning period. Residential/commercial recycling is expected to increase as the District focuses on improving data collection through the commercial survey. Historically, residential/commercial recycling totals fluctuated greatly year over year. It is expected that with more emphasis on the commercial survey, the District will see an increase in reported diversion.

The District’s industrial generation is expected to rise, fueled primarily by industrial disposal as auto fluff stops being used for alternative daily cover in landfills. The District is not projecting increases in industrial recycling. While the District believes much more industrial diversion is occurring, the industrial surveys have received very few responses in recent years.

C. Waste Composition

Table G-3: Composition of Residential/Commercial Waste

Material	Percent of Total Generation	2022	2023	2024	2025	2026	2027	2028	2029	2030
Paper and Paperboard	23.10%	83,046	84,446	85,463	86,507	87,923	89,025	90,469	91,633	92,834
Glass	4.20%	15,099	15,354	15,539	15,729	15,986	16,186	16,449	16,661	16,879
Ferrous	6.60%	23,728	24,127	24,418	24,716	25,121	25,436	25,848	26,181	26,524
Aluminum	1.30%	4,674	4,752	4,810	4,868	4,948	5,010	5,091	5,157	5,224
Other Nonferrous	0.90%	3,236	3,290	3,330	3,370	3,426	3,468	3,525	3,570	3,617
Plastics	12.20%	43,860	44,599	45,136	45,688	46,436	47,017	47,780	48,395	49,029
Rubber and Leather	3.10%	11,145	11,333	11,469	11,609	11,799	11,947	12,141	12,297	12,458
Textiles	5.80%	20,851	21,203	21,458	21,720	22,076	22,352	22,715	23,007	23,309
Wood	6.20%	22,289	22,665	22,938	23,218	23,598	23,894	24,282	24,594	24,916
Other	1.50%	5,393	5,483	5,550	5,617	5,709	5,781	5,875	5,950	6,028
Food	21.60%	77,654	78,962	79,914	80,890	82,214	83,244	84,594	85,683	86,805
Yard Trimmings	12.10%	43,500	44,233	44,766	45,313	46,055	46,632	47,388	47,998	48,627
Misc inorganic wastes	1.40%	5,033	5,118	5,180	5,243	5,329	5,395	5,483	5,554	5,626
R/C waste generated		359,508	365,566	369,971	374,490	380,621	385,388	391,639	396,681	401,877

Material	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Paper and Paperboard	93,625	94,311	94,311	94,311	94,311	94,311	94,311	94,311	94,311	94,311
Glass	17,023	17,147	17,147	17,147	17,147	17,147	17,147	17,147	17,147	17,147
Ferrous	26,750	26,946	26,946	26,946	26,946	26,946	26,946	26,946	26,946	26,946
Aluminum	5,269	5,308	5,308	5,308	5,308	5,308	5,308	5,308	5,308	5,308
Other Nonferrous	3,648	3,674	3,674	3,674	3,674	3,674	3,674	3,674	3,674	3,674
Plastics	49,447	49,809	49,809	49,809	49,809	49,809	49,809	49,809	49,809	49,809
Rubber and Leather	12,564	12,656	12,656	12,656	12,656	12,656	12,656	12,656	12,656	12,656
Textiles	23,507	23,680	23,680	23,680	23,680	23,680	23,680	23,680	23,680	23,680
Wood	25,129	25,313	25,313	25,313	25,313	25,313	25,313	25,313	25,313	25,313
Other	6,080	6,124	6,124	6,124	6,124	6,124	6,124	6,124	6,124	6,124
Food	87,545	88,187	88,187	88,187	88,187	88,187	88,187	88,187	88,187	88,187
Yard Trimmings	49,041	49,401	49,401	49,401	49,401	49,401	49,401	49,401	49,401	49,401
Misc inorganic wastes	5,674	5,716	5,716	5,716	5,716	5,716	5,716	5,716	5,716	5,716
R/C waste generated	405,301	408,271	408,271	408,271	408,271	408,271	408,271	408,271	408,271	408,271

Source(s):

Percent of Total Generation: Advancing Sustainable Materials Management: 2018 Tables and Figures

Waste Generated: Table G-2

Table G-3 presents the residential/commercial waste generated totals from **Table G-2** and the estimated percent of total generation by material. Using the quantities of waste generated and the estimated percent of total generation, each material is projected during the planning period. The estimations above are based on a U.S. EPA National Study of waste generated from 2018. It is important to note that there are likely differences between the actual waste generation composition and the estimated composition above. All projections are flatlined in the seventh year of the planning period (2032).

DRAFT

APPENDIX H

STRATEGIC ANALYSIS

Appendix H. Strategic Analysis

The state solid waste management plan establishes recycling and reduction goals for solid waste management districts. At the time of the District’s 2018 Plan Update, the 2009 State Plan was in effect. Ohio EPA adopted the 2020 State Plan in November 2019, making several changes to the goals that guide programming. The programs and strategies evaluated in Appendix H, consider the changes in the State Plan and analyze gaps in service, programs, and strategy offerings. The evaluation provides a variety of opportunities that result from identified gaps and may bolster a management or education/outreach change. These opportunities present a strategy or direction to consider.

Appendix H is divided into thirteen (13) separate analyses or sections. The status of the reduction and recycling efforts was evaluated based on criteria presented in Format 4.1. Some of the analyses are further subdivided, such as **Section H-1**. The strategic program evaluation was performed on the following:

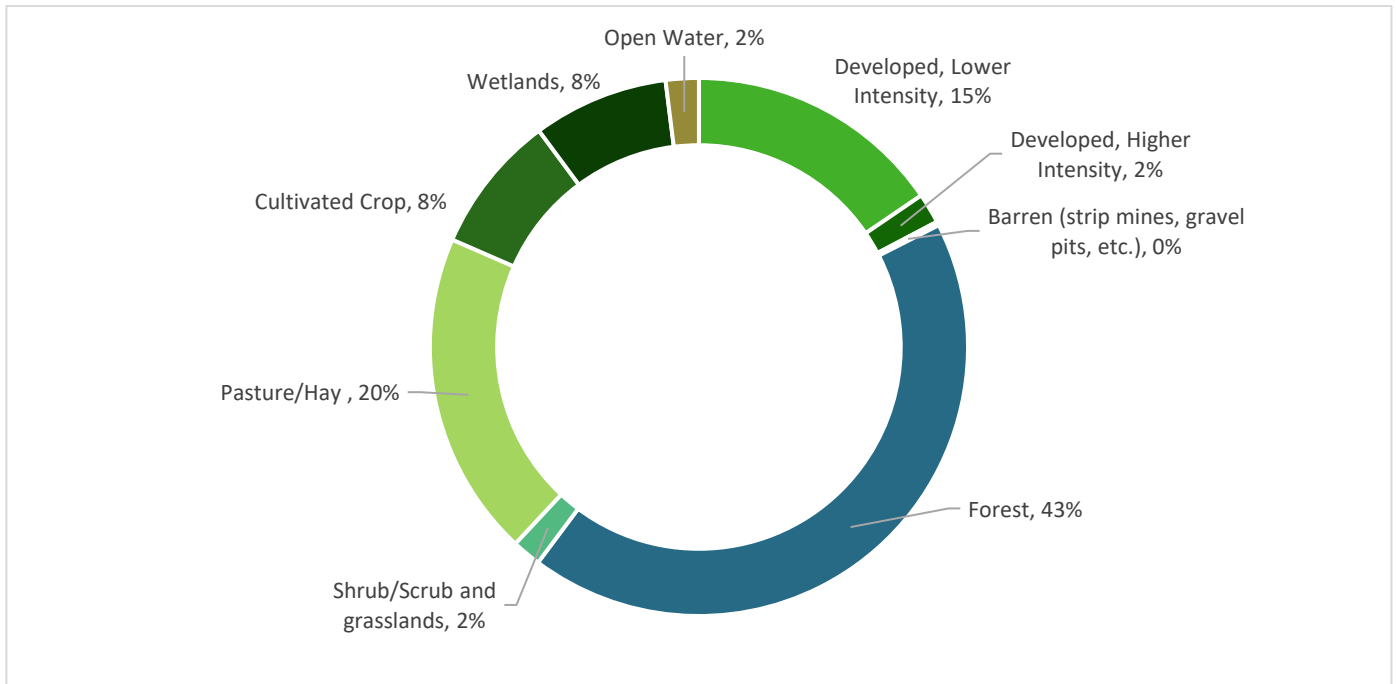
Table of Contents

Appendix H. Strategic Analysis	1
1. Residential Recycling Infrastructure Analysis	3
2. Commercial Sector Analysis	12
3. Industrial Sector Analysis	17
4. Residential/Commercial Waste Composition Analysis	19
5. Economic Incentive Analysis	26
6. Restricted and Difficult to Manage Waste Stream Analysis	27
7. Diversion Analysis	33
8. Special Program Needs Analysis	38
9. Financial Analysis	40
10. Regional Analysis	45
11. Data Collection Analysis	47
12. Education and Outreach Analysis	49
13. Processing Capacity Analysis	54

Geographical

Before evaluating District programs it's ideal to understand the geographic and demographic area of Geauga and Trumbull Counties. Defining rural and urban areas is based on decennial census 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. Figure H-1.1 shows the aggregated breakdown of land cover for the District.

Figure H-1.1 Land Cover

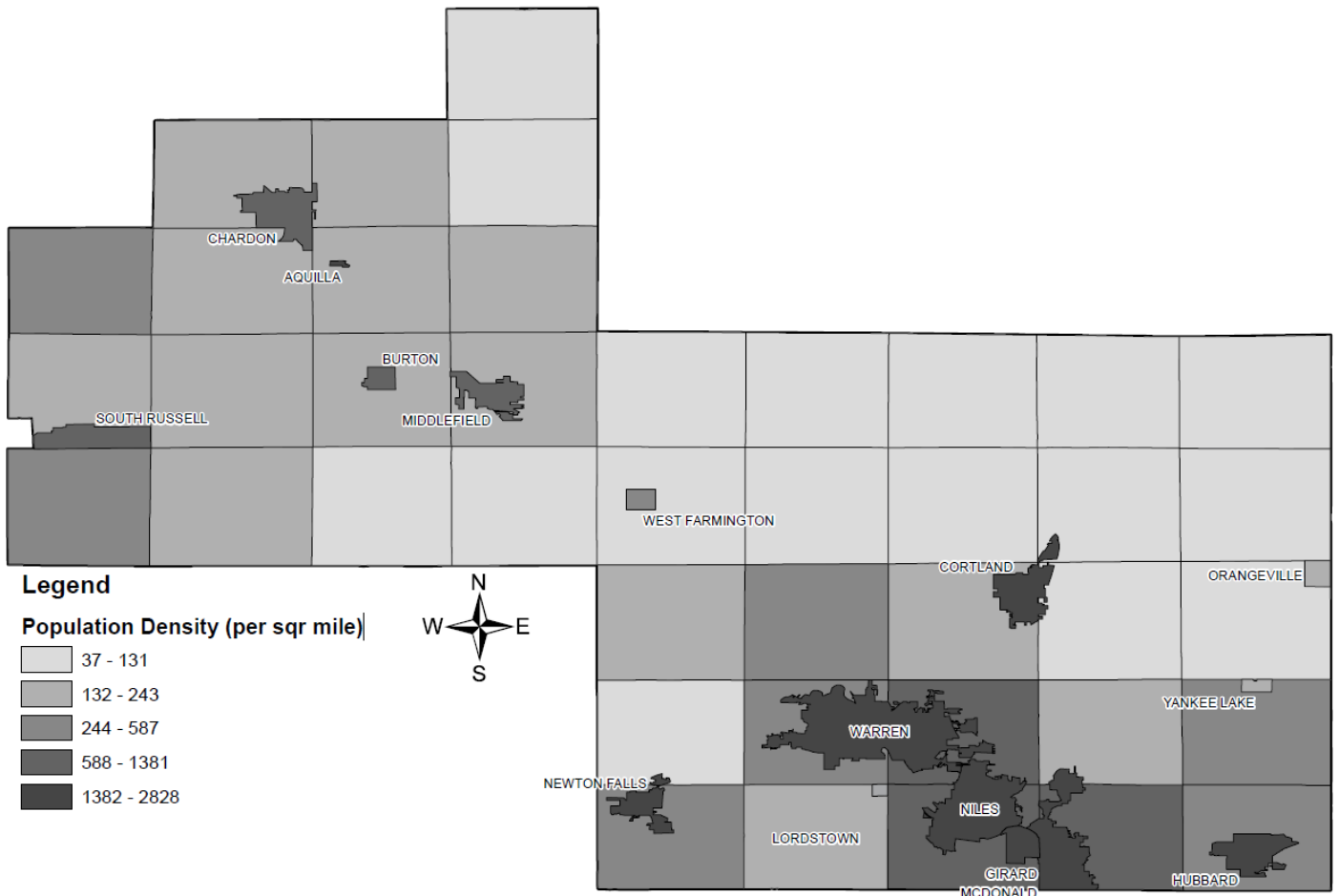


About 17% of the District’s land usage is classified as developed land. Roughly 83% of the District’s land is rural with 43% being forested, 20% being pasture, 8% being cropland, and 2% being water.

There are six municipalities classified as cities, one in Geauga and five in Trumbull. Chardon City is the sole city in Geauga County with a population of roughly 5,000 people. Trumbull County’s largest city is Warren, with a population of approximately 40,000 people. Together, the largest cities in each county make up approximately 15% of the District’s total population and are the respective county seat for Geauga and Trumbull Counties. The District has 11 villages which make up 7% of the population. The remaining 64% of residents are dispersed throughout the District’s 40 townships.

Land use in both Geauga and Trumbull Counties is predominantly rural. Population density is low and commercial development is centered around larger cities and along major transportation routes. Smaller commercial businesses have difficulty accumulating enough recyclable materials to make recycling programs cost-effective. The commercial base is small and has concentrated districts or parcels in the higher population density areas.

Figure H-1.2 District Population Density



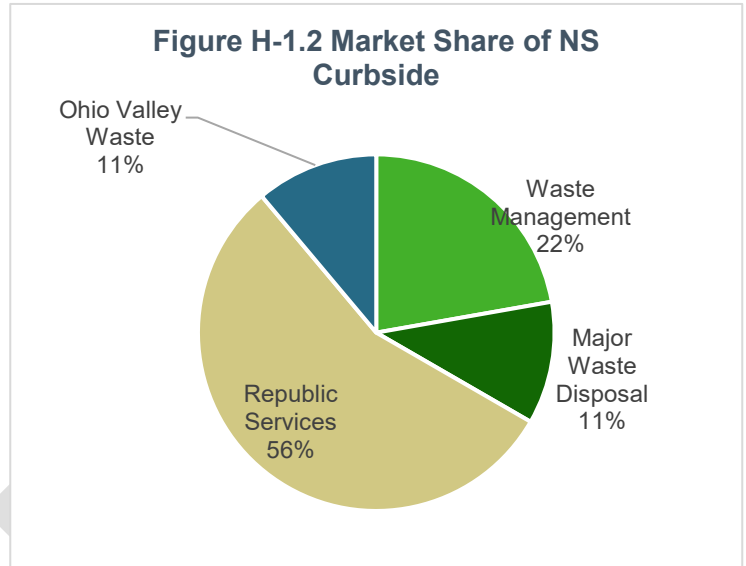
1. Residential Recycling Infrastructure Analysis

A. Curbside Evaluation

This evaluation of the District’s existing residential recycling infrastructure determines whether the needs of the residential sector are being met and if the infrastructure is adequately performing. The residential recycling infrastructure consists of curbside programs, drop-off recycling programs, special event drop-offs, take-back retailers, reuse centers, thrift stores, network of food banks, and compost facilities. The analysis

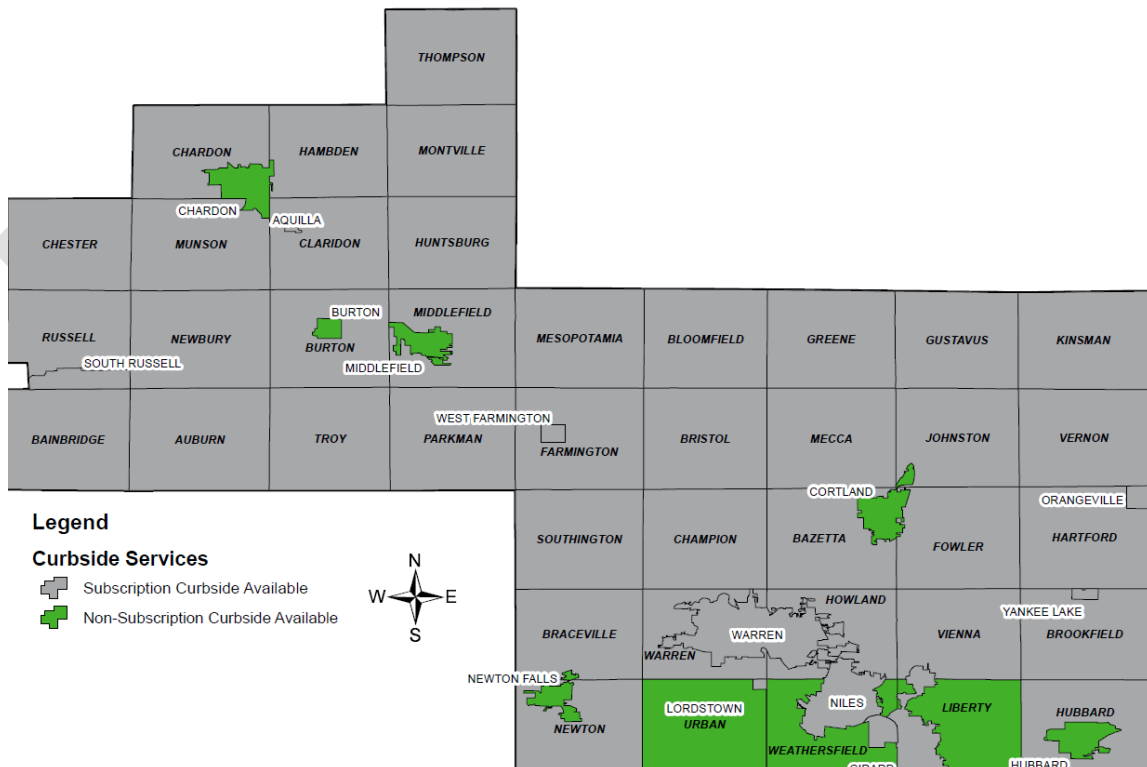
for the plan is dictated by the availability of data. Detailed residential tonnage data by location is not available for the District.

The District has nine political jurisdictions with non-subscription curbside service. Geauga County has three and Trumbull County has the remaining six. Of the nine non-subscription services currently offered in the District, Republic currently services a majority of the communities (56%) with Waste Management (22%), Major Waste Disposal (11%), and Ohio Valley Waste (11%) servicing the remaining four.



While the remaining political jurisdictions do not have a contracted non-subscription curbside service available, every political jurisdiction in the District can sign up for subscription curbside service. Much of the District operates in an open market where haulers compete for resident services. Many residents of the District enjoy the freedom of choice in their hauler and the ability to conveniently change providers. An open market system should not be interpreted as a lack of services.

Figure H-1.3 Curbside Services

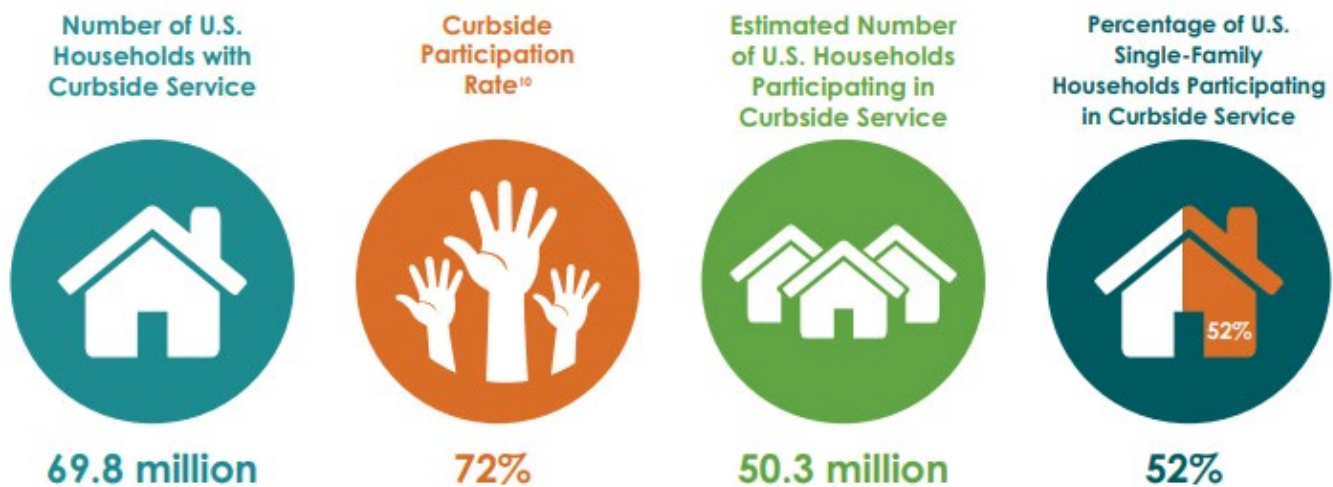


The District's nine political jurisdictions that have access to non-subscription recycling comprise roughly 17% of the total population. There are approximately 52,000 residents with this service. The District is unable

to receive reliable data from the haulers providing non-subscription recycling services in Geauga and Trumbull Counties. Therefore, the level of diversion stemming from these programs has not been calculated in the diversion projections through the planning period.

According to a study conducted across the U.S. by The Recycling Partnership, non-subscription services yield an average of 459 pounds per household annually¹. Whereas, subscription curbside yields 331 pounds per household annually. The same study surveyed residents throughout the United States to estimate the level of participation in curbside programs and found that 52% of households participate in curbside services if offered.

Figure H-1.4 National Curbside Recycling Participation



Source: The Recycling Partnership State of Curbside Recycling Report, 2020

Using this report, the District estimated the amount of diversion from its non-subscription curbside programs.

Table H-1.1 below details these estimates.

Table H-1.1 Non-Subscription Recycling Diversion Estimates

Community	Population	Total HHs	Participating HHs	Total lbs/Year	Total Tons/Year
Chardon City	5,206	2,078	1,081	496,035	248
Burton Village	1,400	559	291	133,394	67
Middlefield Village	2,732	1,091	567	260,309	130
Cortland City	7,088	2,830	1,471	675,355	338
Liberty Township	11,921	4,759	2,475	1,135,850	568
Lordstown Village	3,335	1,331	692	317,764	159
Newton Falls Village	4,543	1,814	943	432,864	216
Weathersfield Township	8,033	3,207	1,668	765,396	383

¹ "2020 State of Curbside Recycling Report", The Recycling Partnership. https://recyclingpartnership.org/wp-content/uploads/dlm_uploads/2020/02/2020-State-of-Curbside-Recycling.pdf

Community	Population	Total HHs	Participating HHs	Total lbs/Year	Total Tons/Year
Hubbard City	7,610	3,038	1,580	725,092	363
Total	51,868	20,706	10,767	4,942,058	2,471

Assumption: 2.5 persons per household based on US Census data
 Assumption: 52% of households participated in curbside service
 Assumption: Each household diverts 459 pounds annually

Based on data from The Recycling Partnership, it is estimated that roughly 2,500 tons of material was diverted from the District’s nine non-subscription curbside recycling programs. This is on par with historical estimations. The previous plan update estimated roughly 2,800 tons of recyclables were collected in 2015. The District did not estimate the tons per year from subscription curbside services available because the number of participating households is unknown.

Notably, the District’s two largest cities, Niles and Warren, do not have access to non-subscription curbside. There is a significant opportunity to work with Niles and Warren to establish non-subscription programs. These two cities account for a total of 20% of the District’s population. Assuming the same parameters as described above, an additional 2,700 tons of material could be diverted annually from these municipalities by establishing non-subscription curbside recycling. **Table H-1.2** below presents other high-population areas the District could target for additional recovery.

Table H-1.2 Potential Areas to Target for Non-Subscription Curbside Recycling

Community	Population	Total HHs	Participating HHs	Total lbs/Year	Total Tons/Year
Bainbridge Township	12,961	5,174	2,691	1,234,943	617
Chester Township	10,007	3,995	2,077	953,481	477
Niles City	18,367	7,332	3,813	1,750,034	875
Warren City	39,020	15,577	8,100	3,717,882	1,859
Howland Township	17,174	6,856	3,565	1,636,363	818
Total	97,529	38,934	20,246	9,292,703	4,646

Assumption: 2.5 persons per household based on US Census data
 Assumption: 52% of households participated in curbside service
 Assumption: Each household diverts 459 pounds annually

The five communities listed above are the most populated areas in the District without existing access to non-subscription curbside recycling. These are priority targets for the District to work with towards establishing additional curbside recycling programs. If all five communities listed were to receive non-subscription curbside services, an estimated 98,000 residents would divert an additional 4,600 tons of material annually. While the District expects to reach Goal 2 through this planning period, this would also help the District provide additional access to recycling for residents, pushing the District closer to achieving Goal 1.

Unless subsidized or covered by grant funding, curbside recycling programs are provided to residents at an additional cost. The additional costs can be a major barrier for districts and residents. Curbside recycling programs need to consider the poverty rate of the targeted areas. Warren specifically may encounter pushback from residents as the poverty rate in this city is 35% while Niles has a poverty rate of just 11% according to the U.S. Census Bureau. Further barriers to implementation are geographic location and the freedom to choose haulers. Much of Trumbull County is rural, making collection routes inefficient as the

population density is much less than in urban areas. Furthermore, residents and elected officials may oppose franchise/contracted services to one hauler. Residents place a lot of value on the open market's ability to choose or switch service providers.

B. Curbside Evaluation Conclusions

There is room for diversion from residential recycling programs to improve. One of the largest gaps for the District is data collection. Because there are various haulers, the District struggles to receive curbside diversion data from the residential sector. Reliable data is scarce, and analyzing the success of the programs available is challenging.

While subscription curbside is available to all residents in the District, only nine communities totaling approximately 21,000 households have access to non-subscription curbside. This equates to roughly 17% of the population. This analysis explored various other communities that may benefit from receiving non-subscription curbside services, as well as potential barriers to consider. Conversations with stakeholders and strategically analyzing areas where improvements could be made are key and would be a significant start to exploring increased curbside diversion. The District could also assist community stakeholders with facilitating curbside services to help improve diversion numbers.

Opportunities to explore for this Plan Update:

- Curbside Feasibility Study (ongoing program)
 - Continue to work with waste haulers on promoting curbside expansion in the District and grant applications.
 - Conduct separate feasibility studies for high-priority areas such as Warren and Niles to make informed decisions. How many households currently do not have trash or recycling services? How many households can't afford trash or recycling collection? What is the cost threshold for trash and recycling service collection? How frequently do households change waste haulers and what are their reasons for selecting a new one? Identify whether marginalized populations encounter barriers to recycling.
 - Explore how best to provide non-subscription curbside service.
 - Resident choice
 - Cost savings
 - Local haulers
 - Franchise Vs. Contract hauling
- Implementing Curbside Recycling Programs (New Program)
 - Begin and/or continue discussions with local political leaders and haulers operating in the area about entering into contract agreements for non-subscription curbside.
 - Begin developing or adding language to *District Rule 9* (Registration of Solid Waste Transporters) stipulating potential required actions for haulers to partake in such as:
 - Mandatory reporting of waste and recycling tonnages
 - Minimum service requirements
- Resident Outreach (Ongoing Program) – Outreach directly to residents to explore non-subscription curbside
 - Develop an outreach plan to encourage curbside recycling and create a curbside participation interest survey.

- Use a variety of methods to reach different audiences including website, regular column entries in newspaper, cable, and television ads, press releases, and brochures.
- Target one community at a time, thus a smaller scale approach.
- Approach community elected officials first and offer to bear the costs of conducting a political jurisdiction household interest survey.
- Launch campaign.
- Share results and couple results with contracted options: consortium, preferred hauler, franchise, etc.
- Improve Data Collection (New Program)
 - Work with haulers and communities to gather consistent, community-specific data for non-subscription and subscription curbside recycling programs.
 - Tons recovered
 - Households served

C. Drop-Off Evaluation

While all political jurisdictions have the ability to subscribe for curbside recycling services, it is unknown what the level of subscription looks like for much of the District. To provide residents who do not have non-subscription curbside, cannot afford and/or receive subscription curbside, or are unaware of the District’s curbside programs, the District relies heavily on the drop-off program. Drop-off locations offer collection containers where residents place their recyclable materials in large bins, which are serviced by a contracted hauler. Residents who use drop-offs voluntarily transport recyclable materials to the drop-off location. Materials collected are subject to change when the District bids for services. Common materials accepted include glass, aluminum/ steel cans, plastic bottles, jars, jugs, paper, and cardboard.

For many years the District’s contracted hauler accepted plastics #1 through #7. This changed to only #1 and #2 in 2015 and changed back in 2017 to plastics #1 through #7. The District’s website is updated with current material lists whenever there is a change in materials accepted. The District also works with the contracted hauler to update the container signage. However, frequent changes in the types of plastics accepted in the program can be confusing to homeowner recycling. To help combat this confusion, the District emphasizes the “big five” recyclable materials on its distributed materials, signage, and announcements.



MAKE RE-CO SMILE! PLEASE ONLY DISPOSE OF THESE 5 ITEMS IN THE DROP-OFF BINS

- 1. Bottles**
- 2. Jugs**
- 3. Jars**
- 4. Cans**
- 5. Cardboard/Paper**



When in doubt, leave it out!



The District sponsors all drop-off sites and is active in helping improve existing sites. The District awarded \$170,000 in grant funding for drop-off site improvements. Funding was awarded to make improvements to concrete pads/paving, fencing, cameras, gates, improved drainage, and lighting. These grants are not only helping to provide much-needed site improvements to make the sites more accessible and easier to maintain, but they also have the District as a more involved partner in the drop-off site program.

The District's current drop-off contract was signed in 2017 with Ohio Valley Waste as the service provider. They provide containers, transportation, and processing for the drop-offs in both counties. This contract expires and goes out for a new bid process in 2024. The District has considered separating the service contract by county. Per the last contract economies of scale were best when combining the counties but this may or may not continue to be the case. Effective July 1, 2024, Kimble was selected as the drop-off service hauler. The existing drop-off sites will remain at their current locations. As part of this new contract, the District will also have a four cubic yard container for paper and cardboard at 30 schools across both counties.

The District has had a few location/site changes or closures. Factors contributing to changes reflect contamination and/or private property ownership arrangements. Drop-off recycling infrastructure programs are available full-time (at least 40 hours a week) in 21 urban and 22 rural locations. Drop-off locations are available in 40 of 56 political jurisdictions. The drop-off program provides facilities to 71% of the political jurisdictions. However, if a drop-off is not available in certain jurisdictions, it does not mean there is not a facility within a reasonable driving distance of 10 – 15 minutes. Residents may live close to a drop-off even if they do not have one located within the borders of their community.



Figure H-1.5 District Drop-Offs

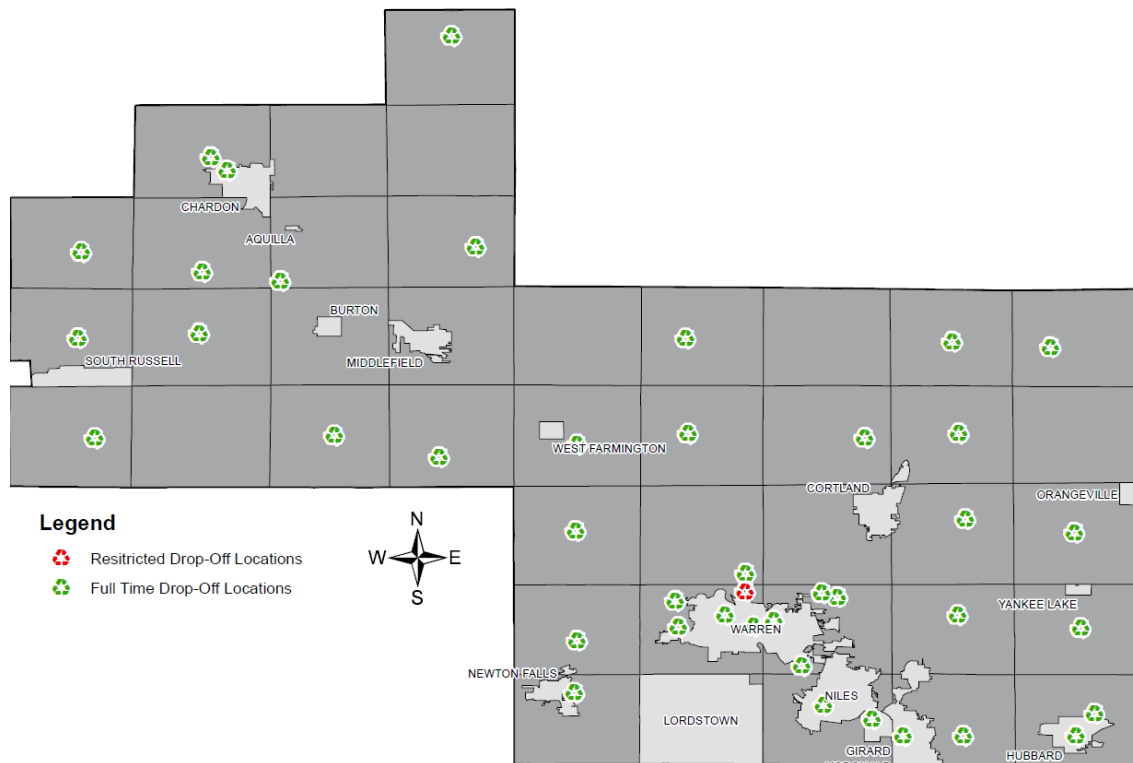
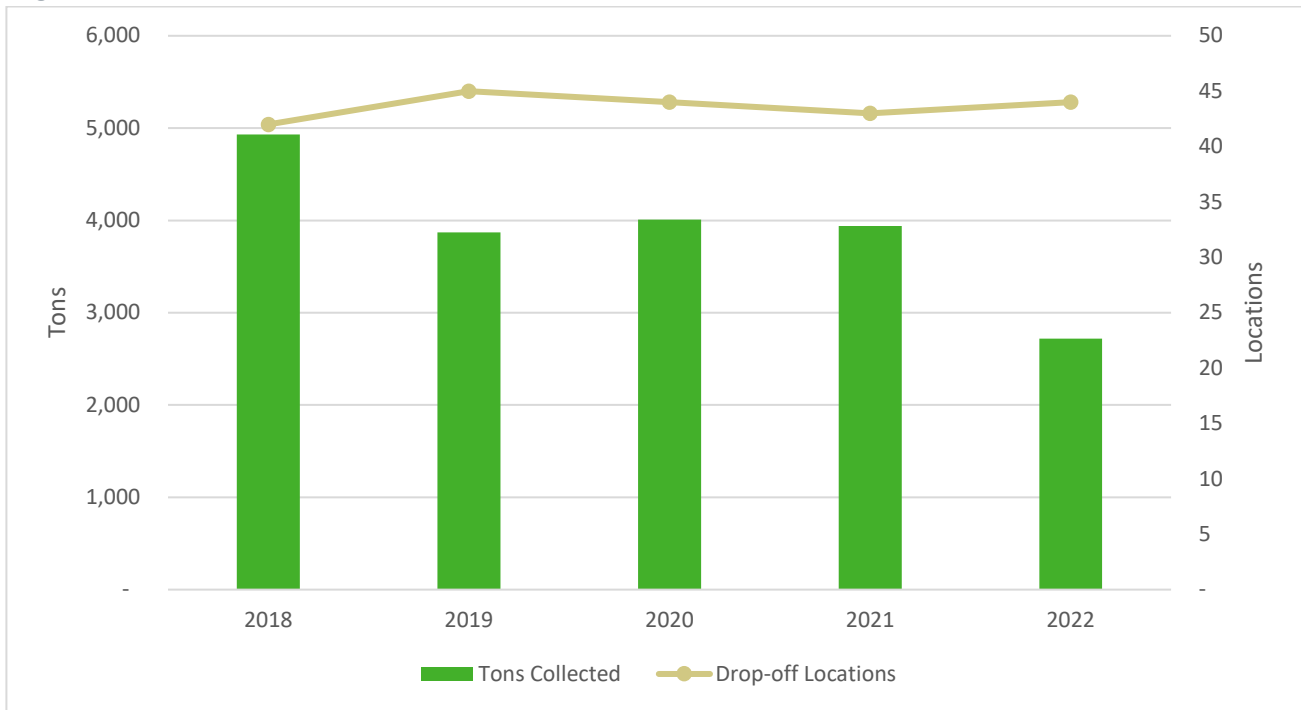


Figure H-1.5 above shows where recycling drop-off locations are located throughout the District. The District does well in reaching most of the political jurisdictions in both counties. While subscription curbside recycling is available throughout the District, drop-off locations are cost-effective for those residents choosing not to subscribe to curbside. Additionally, due to lower population densities, drop-off facilities are often more feasible than establishing non-subscription curbside programs for rural areas such as townships. However, remote drop-off locations are typically the highest contaminated. Due to the hauler consolidated route data, a breakdown by each drop-off location is not available. However, in 2022 the District collected roughly 2,700 tons of material at drop-off locations. This amount is included in the hauler reporting and has not been projected as a separate entity.

One of the biggest challenges with the District drop-off locations is wish-cycling. Wish-cycling is the practice of tossing items such as plastics, metals, or cardboard material that are not processed at the Material Recovery Facility (MRF) due to a lack of markets. Residents place the discarded plastics that cannot be recycled in the containers at the drop-off hoping that they can somehow be recycled. The District has made targeted efforts to curb wish-cycling and trash dumping at drop-off sites. As mentioned, the District has been and will continue to be active in providing funding for site improvements at drop-off locations. *See Appendix I* for more information on the District’s grant activities. Furthermore, the District works with local communities, drop-off site owners, and residents to push the “big five” recyclables and to discard material in trash receptacles when in doubt.

Figure H-1.6 Historical Drop-Offs



Based on a five-year historical look, it appears the drop-off program is struggling to collect materials when compared to previous years. Since 2018, the District has decreased from nearly 5,000 tons to 2,700 tons collected in 2022, a 45% decrease in five years. While contamination is always an issue at drop-offs, it does not appear to be the reason for this decrease. Even with the opening of the new Geauga Collection Facility, tonnages decreased. The District is unsure what is causing this decrease because the number of drop-off locations has remained almost identical throughout the five years. One potential reason for this is that glass was removed from the acceptable materials list in 2018. While it returned to the list in 2020, residents may still believe it cannot be in the stream, therefore decreasing tonnage collection. Further historical analysis shows that the District’s drop-off tonnages collected between 5,500 and 6,700 tons from 2011 to 2016 (previous plan update). While 2022 had less recovery, in 2023 the tonnages returned to historical averages.

While the tonnages recovered have decreased, the cost to service the drop-offs has been increasing. In 2022, the District spent roughly \$975,000 on drop-off costs which equates to nearly 42% of the District’s total expenditures. **Table H-1.3** below presents the costs and tonnages collected for drop-off locations in the District.

Table H-1.3 Drop-Off Cost and Materials Collected

Year	2018	2019	2020	2021	2022
Tons Collected	4,932	3,868	4,009	3,940	2,719
Drop-off Locations	42	45	44	43	44
Cost	\$484,489	\$541,861	\$588,546	\$588,491	\$974,525
Cost/Ton	\$98	\$140	\$147	\$149	\$358

Source: Annual District Reports and Quarterly Fee Reports 2018 – 2022

The District's collection tonnage has decreased by 45% over the five years but the total cost to service the program has increased by 39%. This combination of rising costs and lower recovery has led to an increase from \$98 per ton in 2018 to \$358 per ton in 2022, a 265% increase in five years. However, as mentioned 2022 was an outlier year of low recovered tonnages. In 2023, the cost per ton was \$191, much closer to historical values. Inflation, rising gas prices, and contamination are all factors that have led to the increase in total cost.

D. Drop-off Evaluation Conclusions

The District has seen increases in the cost of servicing this program while simultaneously observing less material diversion from the drop-offs despite maintaining a stable number of bins. The material collected from this program accounted for roughly 3% of the District's total diversion while costing 30% of the District's total expenses. Furthermore, site-specific tonnage data is not available. The District does receive diversion totals, but it is a conglomeration amount on a monthly basis.

The District has invested considerable time and resources into improving drop-off sites through the installation of cameras, gates, concrete pads, lighting, and more with the goal of making sites more accessible and easier to maintain. Despite the District's efforts, diversion tonnage is steadily decreasing. The District continues to suffer from wish-cycling, contamination, and illegal dumping at drop-off locations which has caused some property owners to opt to close the site rather than install upgrades with District assistance.

Opportunities to explore for this Plan Update:

- **Data Collection (New Program)**
 - Work with haulers and communities to gather consistent, community-specific data for drop-off recycling programs such as tons recovered per site.
 - Use cameras through Ohio EPA grants to gather information and data on what is being collected.
- **Drop-Off Litter (Drop-Off Contamination Monitoring) (Ongoing Program)**
 - Continue to offer grant funding to support improvements to drop-off sites.
 - Investigate the usage of drop-off sites and why tonnages are decreasing.
 - Questions to consider are: Is the site being used less by residents, what is the contamination rate, are the drop-off locations too far for residents to use, are sites obstructed from view or not in an obvious place, how has the movement of locations around the counties affected resident usage and are residents aware of the program.
- **Explore Non-Subscription Curbside in Girard, Chester Township and Niles (New Program)**
 - Gauge public opinion and interest in establishing a non-subscription recycling service.
 - Begin and/or continue discussions with local political leaders and haulers operating in the area.

2. Commercial Sector Analysis

This evaluation of the District's existing commercial recycling determines if current programs are adequate to serve the sector. The goal is to identify service gaps and determine steps the District can take to further address the commercial/institutional sector. The commercial/institutional sector within the District consists of the following (non-exhaustive list): businesses, schools and universities, government agencies, office

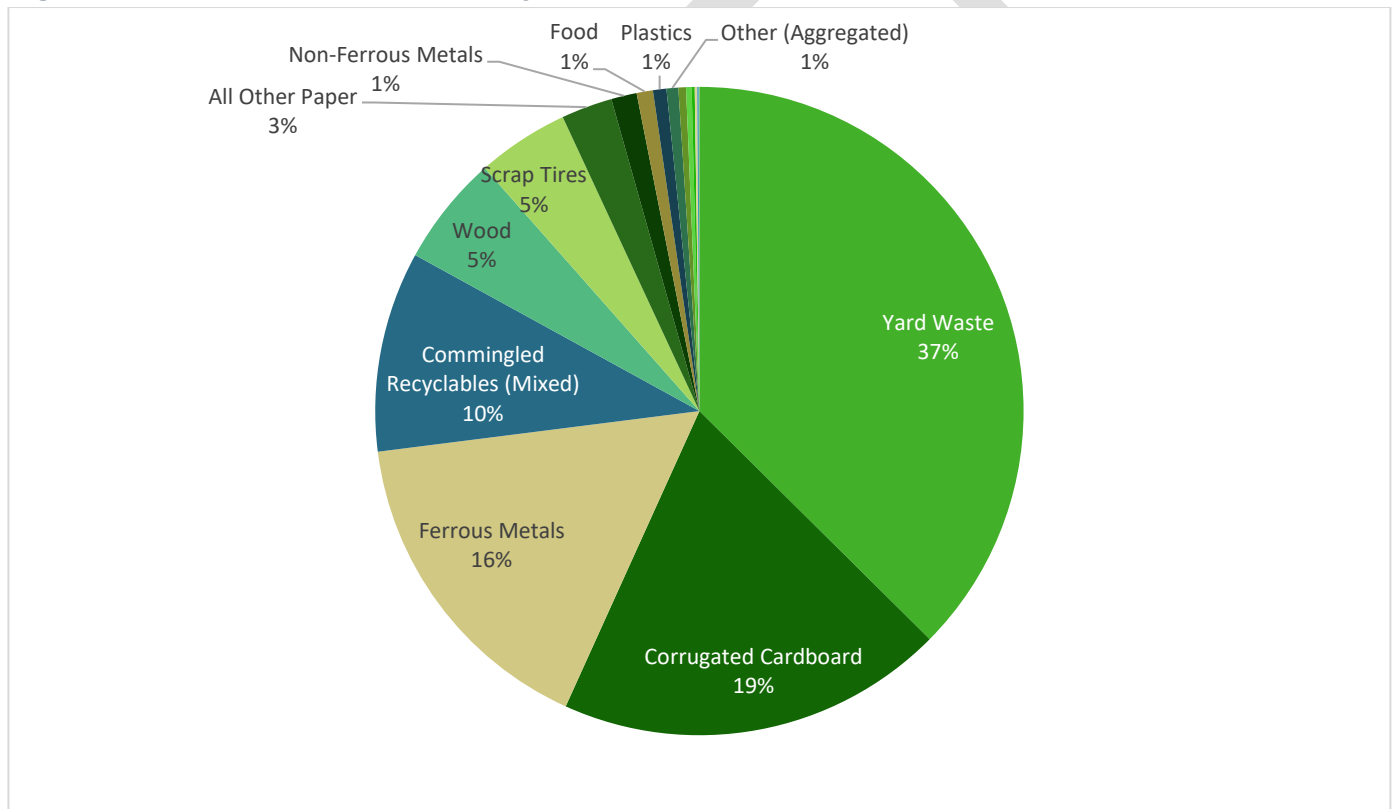
buildings, stadiums, amusement parks, event venues (stadiums, concert halls), hospitals, and non-profit organizations.

Estimating the baseline diversion in this sector is the first step to reducing and recovering commercial waste. This serves as a gauge for potential opportunities in this sector. The District also assessed infrastructure impediments to waste reduction, collection, or provision of containers for recycling. This assessment identified the needs or challenges for reducing waste and recycling for the commercial sector. Other opportunities to explore include program modifications or new program suggestions.

A. Estimated Diversion

The residential/commercial sector diverted a total of 57,680 tons of material in the reference year. **Figure H-2.1** graphs the total diversion by material. The most notable materials diverted are yard waste, cardboard, and ferrous metals.

Figure H-2.1 Commercial Diversion by Material



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, an estimated 35,458 tons were collected from the commercial sector.

Table H-2.1 Commercial Recycling Data Sources 2022

Program/Source of Data	Tons
Commercial Survey	25,781
Data from Other Recycling Facilities	5
Ohio EPA Commercial Retail Data	9,671
Hauler Reports	14,474
Total	49,931

While these estimations are rough, this demonstration shows that 57% of the District’s diversion stems from the commercial sector. Note, hauler reports include some residential data. The exact values are unknown.

B. Infrastructure Impediments

This analysis sets the groundwork for looking at the commercial establishments located in the District. There are approximately 6,164 commercial businesses in the District according to the U.S. Census Bureau². Geauga County hosts 2,583 businesses and Trumbull County hosts 3,581. The largest employment sectors in the District are retail trade, construction, and health care/social assistance. Together, these three sectors account for 41% of the commercial establishments. The District’s employment sectors are divided into North American Industry Classification System (NAICS) code classifications. **Table H-2.2** shows the number of commercial establishments by NAICS code.

Table H-2.2 Commercial Establishments in the District

NAICS Code	NAICS Description	Number of Commercial Establishments	Percent of Total Establishments
11	Agriculture, forestry, fishing and hunting	19	0%
22	Utilities	10	0%
23	Construction	787	13%
42	Wholesale trade	331	5%
44-45	Retail trade	928	15%
48-49	Transportation and warehousing	205	3%
51	Information	71	1%
52	Finance and insurance	336	5%
53	Real estate and rental and leasing	230	4%
54	Professional, scientific, and technical services	565	9%
55	Management of companies and enterprises	32	1%

² <https://data.census.gov/table?t=Employment+Size&g=050XX00US39055,39155&tid=CBP2021.CB2100CBP>

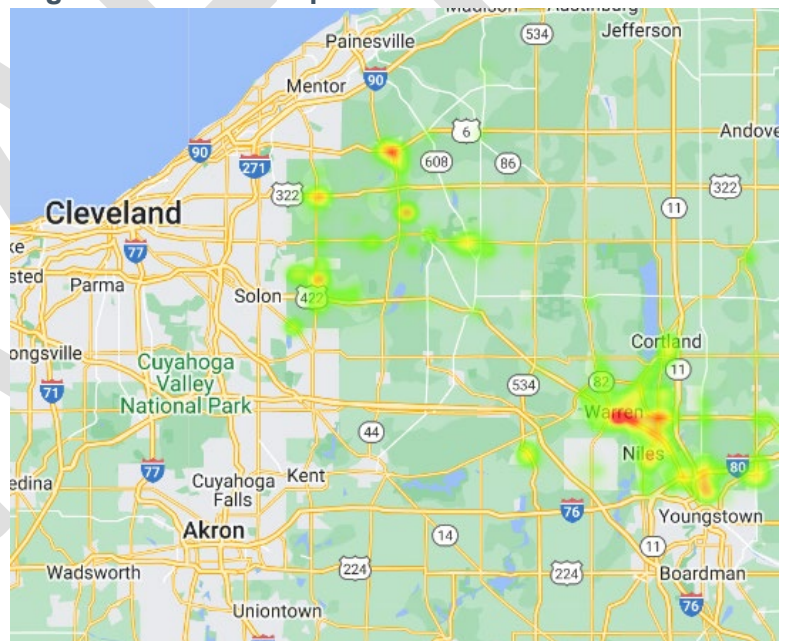
NAICS Code	NAICS Description	Number of Commercial Establishments	Percent of Total Establishments
56	Administrative and support and waste management and remediation services	461	7%
61	Educational services	75	1%
62	Health care and social assistance	788	13%
71	Arts, entertainment, and recreation	101	2%
72	Accommodation and food services	559	9%
81	Other services (except public administration)	666	11%

Source: 2020 County Business Patterns. U.S. Census Data.
 Note: Data from 2022 was not available as of this report.

Identifying the total number of establishments is an important initial step when thinking about commercial businesses and appropriate programs. In general, the high waste-generating business sectors tend to be retail trade and, accommodation/food services. These business types, specifically, produce more waste than others. Common waste materials from these establishments include textiles, plastic, plastic wrapping, pallets, and cardboard for retail trade while accommodation/food service tends to produce cardboard, food/organics, and plastic containers.

Lack of diversion data impedes the District from knowing whether the commercial sector needs assistance or if they are diverting materials and they are not getting captured. The District does not receive much data from retail stores or food establishments. Most of the commercial survey data reported are ferrous and non-ferrous metal recyclables. It is assumed there is more work that could be done in this sector. This evaluation is setting a baseline investigation for the District to frame programming. Based on data in **Table H-2.2** a good starting point would be with the highest generators or in areas that have a high presence of commercial businesses such as Warren and Niles in Trumbull County or Chardon and Middlefield in Geauga County. As shown in the heat map above, the largest concentration of businesses is in the southern parts of Trumbull County.

Figure H-2.2 Heat Map of Commercial Businesses



C. Functionality of Existing Commercial Programs

Commercial businesses, schools and universities, government agencies, and event venues all rely on private sector haulers for their recycling programs. Businesses can request recycling services from local brokerage companies. The District keeps an updated list of local haulers that provide recycling services. The haulers will then transport the diverted materials to material recovery facilities or transfer stations where the material will be processed to sell to manufacturers. Most of the District's recycling assistance to this sector focuses on one-on-one education delivered through waste audits or as requested by the business.

The District currently offers several business-focused programs to encourage waste reduction.

Commercial Recycling & Source Reduction – Designed as a business incentive/certification program which includes technical assistance and referrals to appropriate vendors. However, this program has not been implemented due to a lack of business recycling resources and/or interest.

Waste Audits – The district offers waste characterizations for establishments seeking to better understand their waste stream. This data can inform new reduction opportunities and identify any issues regarding recycling contamination. The District conducts about one audit a year.

Special Event Recycling – ClearStream containers are available for public use and special event recycling.

Commercial Business Outreach – The District promotes the services it offers to commercial businesses and attempts to establish relationships with local businesses.

Commercial Surveys – Each year the District sends out surveys to commercial businesses requesting data on diversion activities and offering technical assistance to establishments.

School and Office Recycling – The District offers recycling containers to schools, government offices, and churches. To receive boxes, entities are asked to complete an application which is available online. Furthermore, the District's drop-off hauler, Ohio Valley Waste, provides drop-off recycling at five schools. Other schools are serviced by Royal Oak or River Valley. The District is currently exploring offering recycling service to all schools free of charge and paying for the service out of the District's budget. *See Appendix L* for more information on school recycling.

D. Conclusions

Commercial sector participation in recycling programs is challenging primarily due to the cost of service and that recycling reporting is voluntary. Assistance is available to this sector and is distributed when requested. However, the commercial infrastructure has gaps in service and there are opportunities for the District to be a resource to help build infrastructure. The District diverted about 88,000 tons of residential/commercial waste generated. Roughly 40% of this was estimated to have been diverted through the commercial sector.

Opportunities to explore for this Plan Update:

- Data Collection (New Program)
 - Improve data collection for waste diversion in the commercial sector.
 - Collaborate with Ohio EPA to increase the EPA's data collection efforts with big box store commercial retailers.

- Obtain and maintain updated contact information for staff managing the commercial recycling programs and build rapport to attain yearly responses. Continue to promote and advertise annual survey participation with a focus on newer, larger entities.
- Commercial Franchising (New Program)
 - Franchise or consortium-style contracting to aggregate businesses in collection contracts. Franchising could help lower costs by providing greater economies of scale, thus providing businesses with an affordable option to recycle.
- Commercial Recycling & Source Reduction (Ongoing Program)
 - Conduct a study to identify by NAICS codes the largest generators
 - Recruit businesses to perform an on-site audit.
 - Target one to two businesses a year to perform the audit and present findings that include ideas for waste reduction and recycling.
 - Implement Green Achievement Certification as a means to recognize businesses that go above and beyond to recycle.
 - Focus on recycling service arrangements for business clusters.
 - Explore working with school campuses.
- Recycling Incentive Grants (Ongoing Program)
 - Promote funding opportunities and outreach to local businesses about District grant funds to provide recycling infrastructure.
 - Recycling program start-up funding to assist businesses in overcoming initial cost barriers.
 - Distribute promotional materials targeting material-specific campaigns or similar business campaigns to foster recycling education and infrastructure for businesses.

3. Industrial Sector Analysis

The analysis of the industrial sector assesses if existing programs offered through the District are adequate to serve that sector and determines if additional programs are needed to support manufacturing entities.

A. Evaluation

Approximately 269 industrial businesses are operating in Geauga and Trumbull Counties. Ninety-five% of the industrial businesses in the District have less than 100 employees according to the U.S. Census Bureau. Sixty-one% of these businesses employ between 1-20 people. **Figure H-3.1** below shows the top five largest industrial businesses operating in the District by employee base.

Figure H-3.1 Top Industrial Companies

Company	Employee Size
Kraft Maid Inc	3,000
Thomas Steel Strip Corp	630
Great Lakes Cheese Co. Inc	500
Neff Perkins Co.	440
R W Sidely	374

Source: U.S. Business Database. Rep. Reference USA

The District’s industrial businesses are heavily concentrated in Warren. The top five communities with the largest presence of industrial businesses are listed below in **Table H-3.2**.

Table H-3.2 Largest Industrial Communities

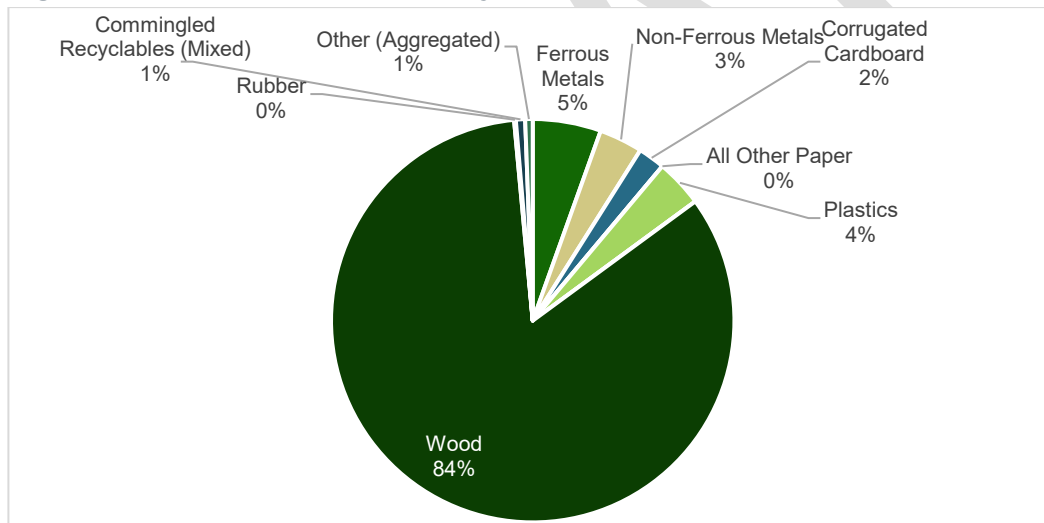
Community	Number of Industries
Warren	146
Middlefield	93
Niles	70
Chardon	53
Girard	39

Source: U.S. Business Database. Rep. Reference USA

B. Landfill Diversion

In 2022, the manufacturing industries in the District disposed of 42,401 tons of waste and diverted a reported 14,000 tons for a 25% recorded diversion rate. With the changes made to the industrial sector requirements in the 2020 State Plan, the District does not spend as much time surveying the industrial sector as it did in the past. Most industrial sector recycling programs were implemented internally by the respective industries without District support. The District faces challenges in encouraging industrial businesses to respond to annual surveys.

Figure H-3.1 Industrial Sector Recyclables



The few responses the District received from industrial businesses resulted in roughly 14,000 tons of creditable material diversion. The top materials diverted in 2022 were wood pallets, comprising 84%, followed by ferrous metals and plastic at 5% and 4%.

C. Conclusions

Most of the recycling programs implemented by the industrial sector were implemented internally by the respective business without intervention from the District. However, should industries choose to request support, the District has existing programs that provide assistance. The District offers industrial technical assistance by offering waste audits for interested businesses. Engagement with this sector is challenging

because much of the waste generated is specialized and specific to the business. Many businesses operate with proprietary information that they do not wish to disclose to the District in annual surveys.

Opportunities to explore for this Plan Update:

- Data Collection (New Program)
 - Improve data collection for waste diversion in the industrial sector.
 - Obtain and maintain updated contact information for staff managing the industrial recycling programs and build rapport with the goal of attaining yearly responses. Continue to promote and advertise annual survey participation with a focus on newer and larger entities.
- Industrial Business Outreach (New Program)
 - Connect with local businesses and economic partners to determine the desire for materials management and reporting.
 - Lordstown Motors may be a good business to target.
 - Promote ways the District can provide assistance to businesses.
 - Waste audits
 - Technical assistance
 - Grant funding
- Promote Industrial Materials Marketplace (New Program)
 - Add Ohio EPA's Material Marketplace to the District's webpage.
 - Promote at outreach events.
- Industrial Waste Audits (Ongoing Program)
 - Continue to offer free waste audits and assessments to help industrial businesses determine what their waste flow looks like and provide technical assistance to increase recovery within this sector.

4. Residential/Commercial Waste Composition Analysis

This evaluation of the District's waste composition analysis describes and evaluates the materials that comprise the largest portions of the waste stream. It also describes what programs the District currently uses to recover these waste streams and what programs the District should evaluate to increase recovery.

A. Residential/Commercial Sector

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

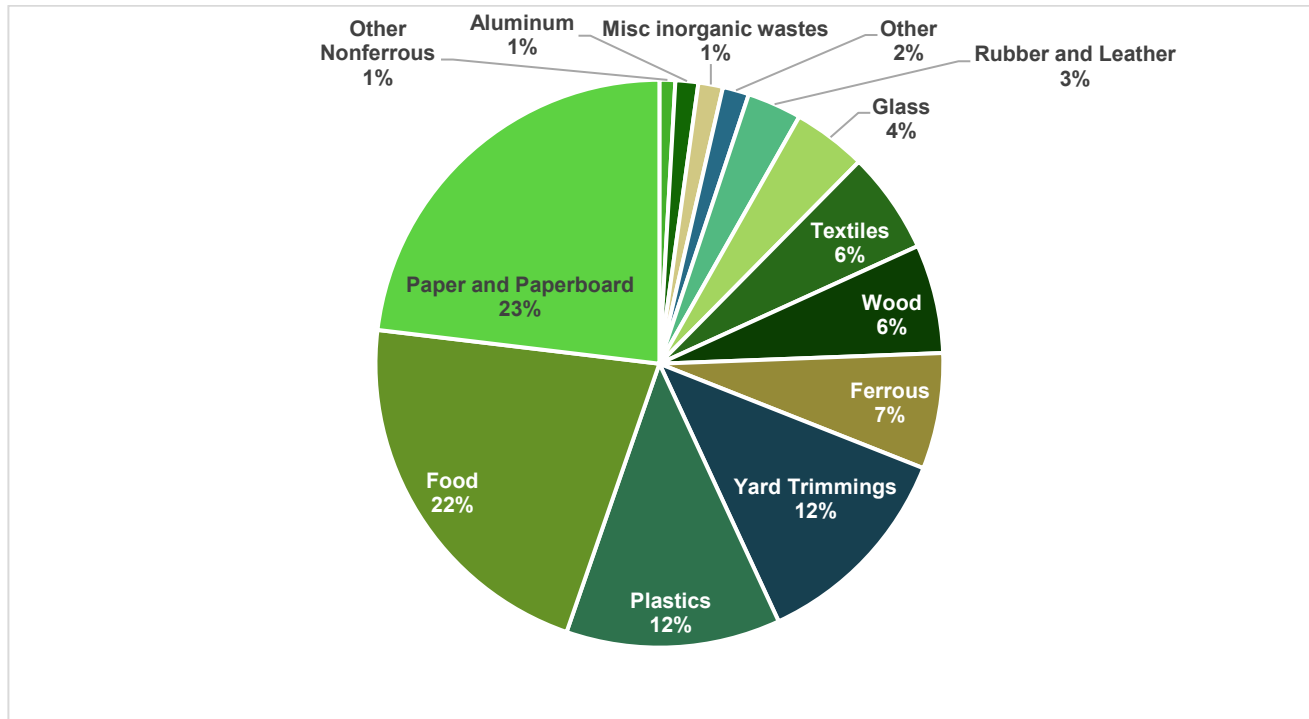
$$361,000 \text{ tons generated} = 273,000 \text{ tons disposed} + 88,000 \text{ tons recycled}$$

The District generated approximately 361,000 tons of municipal solid waste from the residential/commercial sectors while recovering approximately 88,000 of this material. To better understand the composition of the material not being diverted (the amount being landfilled), waste characterization data from the U.S. EPA was applied to the District's tons generated.

As discussed in Appendix G, an analysis of the estimated composition of residential/commercial waste generation was conducted for the reference year using the USEPA's Advancing Sustainable Materials

Management: 2018 Trends and Figures report³. This report details the USEPA's estimates for the composition of waste that is generated. The District used this report and assumed the percentages listed for its estimations and projections. **Figure H-4.1** below lists the estimated waste composition for the District in the reference year.

Figure H-4.1 Reference Year Waste Composition Estimate Percentages



As seen above, the estimated major contributors to waste generation in the reference year are paper and paperboard (23%), food (22%), yard trimmings, and plastics (12%). The composition shows how much of each material is estimated to be generated in the District. As shown in **Figure H-4.1**, the top categories of paper, food, yard trimmings, and certain plastics can either be recycled or composted. Some plastics may be more difficult to recycle without proper infrastructure. Note the “other” stream is typically comprised of hard-to-recycle materials such as electronics.

The data used to estimate the waste stream is based on national averages from the USEPA and may not be completely reflective of the District’s actual waste stream. However, when compared to the actual amount of recycled materials found in Appendix E organics and paper/paperboard appear as the top materials of both estimated waste generated and actual waste diverted. While only estimates, the figure above provides a good basis for analyzing the recycling systems in place for managing waste streams.

³ U.S EPA, Advancing Sustainable Materials Management: Facts and Figures Report. <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management>

Fiber Waste Stream (Paper and Cardboard)

Using the waste estimates described above, the 23% that makes up paper and paperboard in the overall waste composition represents about 83,500 tons of paper. According to the District’s ADR for the reference year, 19,250 tons of paper were recovered from the residential/commercial sector. This calculates to an estimated 23% recovery rate for this material stream which is the same percentage estimated in the previous plan period. This is a good start to the recovery rate and is likely even higher due to the fibrous materials found in the commingled recycling stream, which was not estimated in this calculation. However, the District collected roughly 9,000 tons of commingled recycling, assuming the same 23% of all waste generated is fibrous materials, this would be an additional 2,100 tons.

The District has 44 drop-offs and nine non-subscription curbside services that accept paper. Furthermore, subscription curbside is available throughout the District. These services accept newspapers and inserts, magazines, catalogs, junk mail, envelopes, phone books, paper grocery bags, cereal, and snack boxes (paperboard), cardboard, and clean pizza boxes. There is adequate infrastructure to divert this material stream and the District has a strong capture rate because of it.

Even though the District has adequate infrastructure and recovered a good percentage of estimated fiber generation, there is always room to do more. Commercial businesses can contract with local haulers for recycling dumpster service. The District facilitates this by offering technical assistance. Typical challenges include costs for recycling services (container, processing, and hauling), space for recycling containers, and time and effort to collect recyclables on-site.

Many businesses generate cardboard regularly from shipments of equipment, raw materials, or consumables. Specifically, businesses typically generating the most amount of cardboard are retailers, restaurants, distribution centers, warehouses, and wholesalers.

Table H-4.1 Cardboard Diversion Opportunities

Business Category	Number of Establishments in District
Wholesale trade	331
Accommodation and food services	217
Retail trade	928
Transportation and warehousing	559

While the quantity generated from such establishments is generally high, it usually costs money to receive commercial recycling services which many businesses do not wish to pay. Instead, many businesses will throw the cardboard generated into the dumpster where it will eventually be taken to landfills. Through the District’s Commercial Recycling & Source Reduction Program, the District has an opportunity to identify large fiber material generators and work cooperatively to establish a recycling program, provide start-up funding, procure a commercial recycler, and provide further technical assistance to help divert materials away from landfills.

Many common retail or warehousing establishments may already have internal sustainability goals or waste reduction programs. Businesses such as Home Depot, Target, Kohl’s, Lowes, and Aldi all publish annual

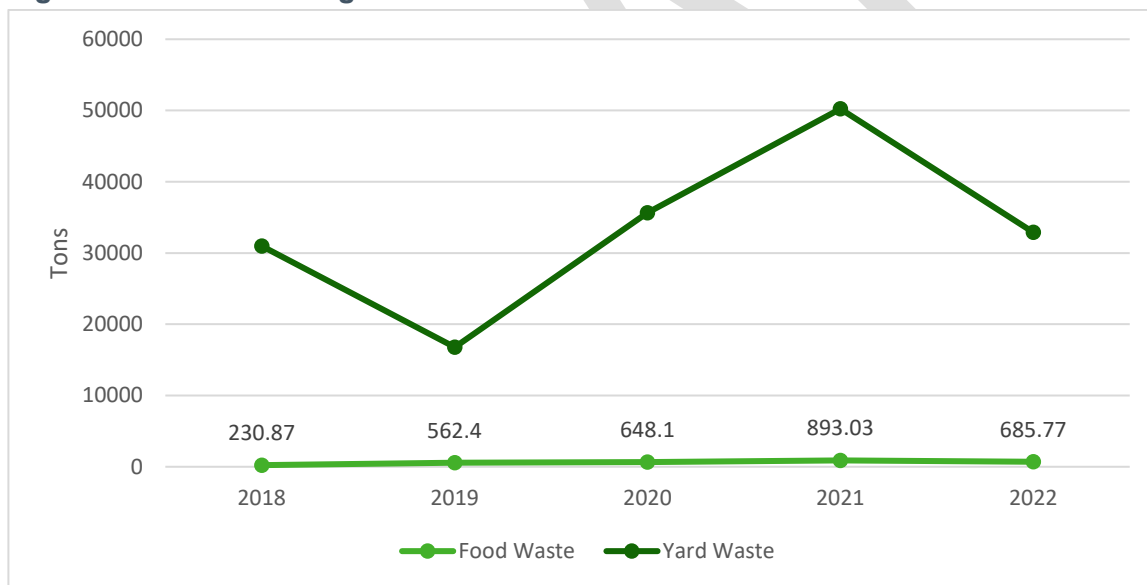
sustainability reports. These businesses are recycling already and likely will not need any assistance from the District. Obtaining the amount of material recycled from these establishments and other similar ones that don't report annually will help the District's diversion rate. Ohio EPA is proactive in getting diversion numbers from such businesses every year; however, it is critical that these numbers continue to be reported. The District could work with Ohio EPA to establish a relationship with contacts at many of its large retailers and work to partner on mutually beneficial events, activities, and programs.

Organics Waste Stream

Using the waste composition estimates above, there are approximately 78,000 tons of food waste and 43,700 tons of yard waste annually generated in the District. In total, an estimated 122,000 tons of organic waste was generated in the reference year.

The District has three programs that support organics diversion including monitoring/tracking yard waste, providing organics diversion technical assistance, and offering educational instruction on composting. The District also sells compost bins to residents at both the Geauga and Trumbull Collection Facilities. The bins cost \$100 normally, but the District sells them for \$35 to encourage organics diversion at home. While the compost bins have been well-received, the District has no way of tracking the amount of diversion that stems from the at-home composting done by residents. **Figure H-4.2** shows the District's historic organic waste diversion.

Figure H-4.2 Historic Organic Diversion



Source(s): Ohio EPA Compost Facility Planning Report for years 2018, 2019, 2020, 2021, 2022

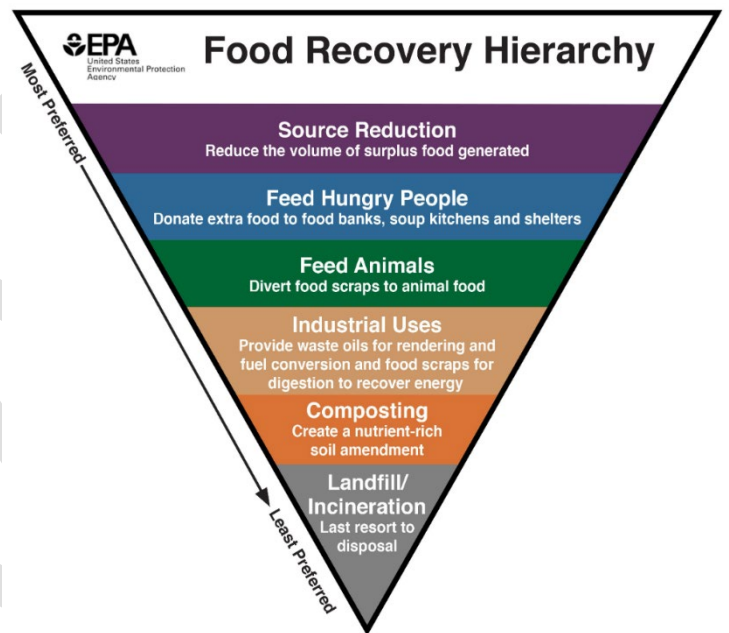
Food waste diversion has been relatively stable over the last five years, peaking at nearly 900 tons in 2021. Yard waste, however, has seen dramatic increases or decreases each year. The large increase in food and yard waste seen in 2021 is likely a result of the COVID-19 pandemic. With many people being at home and restrictions in place nationwide, many areas saw increased yard waste tonnages from residents having more time to do yard work at home.

A majority of the District's organics diversion comes from one business, Hauser Services in Middlefield. The amount of yard waste managed by this company dictates the large swings seen above. In 2022, 38% of the

District’s total diversion stemmed from organics diversion. Of that piece, Hauser Services was responsible for nearly three-quarters of it. This creates an issue of resiliency for the District. With such a dependency on one source of diverted material, the District does not have the flexibility to withstand changes to the current system. For example, if Hauser Services were to be forced to shut down, even for one year, the District would not be able to meet Goal 2. See *Section 7* for a more detailed analysis.

Clark County has a similar dependency on one business to support its diversion goals. Aware of its dependency, the Clark County SWMD entered into a contract with its primary yard waste manager to ensure the business supports residents of the county. The District could explore establishing a partnership with Hauser Services, helping to ensure this yard waste outlet remains available.

The District captures all its yard waste and food recovery data from Ohio EPA reports. While yard waste diversion has respectable numbers, there is room for improvement in food diversion. As mentioned, the District sells discounted compost bins of at-home organic waste diversion and provides workshops for composting best practices. However, one of the best ways to reduce food waste is through donations. This is one of the USEPA’s preferred food management methods, ranking 2nd on the food recovery hierarchy. Based on a web-based search, there are nine food banks/pantries in the District’s largest city of Warren. These locations consist of designated food pantries, local church groups, and larger national groups such as the Salvation Army. The District could explore partnering with local restaurants and food banks to support organics diversion through awareness and reshaping consumer behavior. The District could create awareness of the issues food waste causes to the environment and the socio-economic implications of wasted food that could be donated. This could help foster consumer behaviors that are rooted in diversion/donation rather than waste.

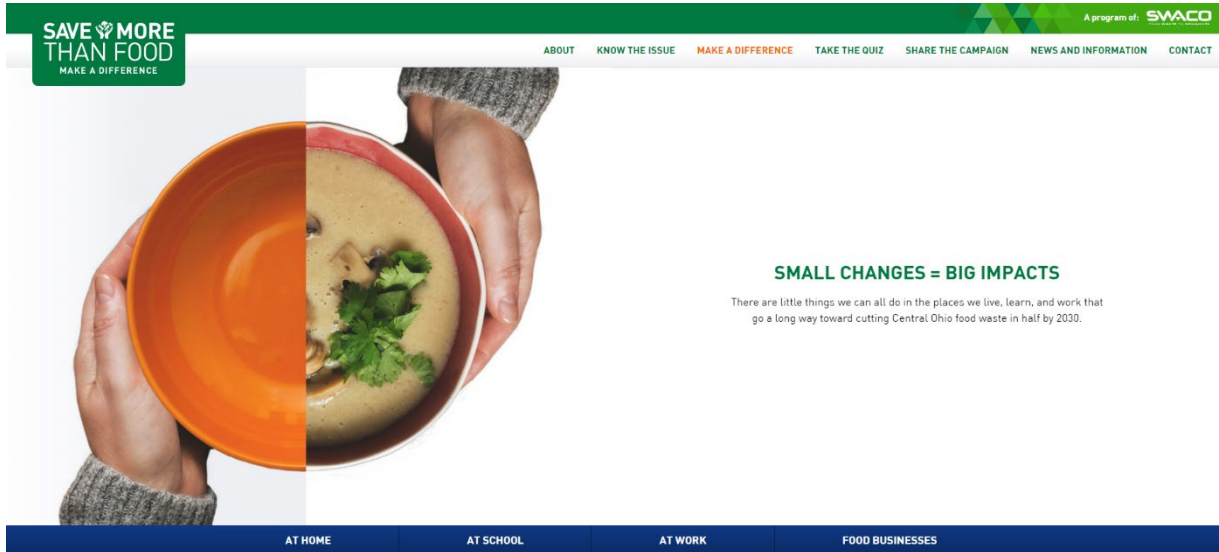


The District could also look to incorporate food diversion and donation awareness in the existing community engagement done throughout the year. Currently, the District does not have any materials provided online about food waste diversion. While there is a section for composting on the District website, the District could explore establishing a section specifically for food waste diversion that includes helpful links, local resources, methods to influence consumer behavior, and available diversion options in the District.

Franklin County’s SWACO⁴ is an example of what this could look like. On SWACO’s website, it provides a link to its Save More Than Food Program. This is an entire website devoted to reducing food waste and

⁴ <https://savemorethanfood.org/know-the-issue/>

gives helpful resources, opportunities, and education on how to reduce food waste. It is tailored to homes, schools, work, and businesses. Furthermore, the website spotlights the impact wasted food creates on energy, transportation, land use, and landfill space. By providing statistical spotlights like these, SWACO presents a compelling narrative with real-world effects paired with methods of better food management.

















Plastic Waste Stream

Residential/commercial estimated waste composition forecasts plastics to be one of the larger percentages of waste streams being littered and landfilled. Currently, capturing this material stream is a gap in the District’s recycling programs. Based on waste composition, it is estimated that 44,000 tons of plastics were generated in the reference year. The District documented diverting 588 tons of plastic. This is estimated to be 1% of all plastic generated but does not include any plastics captured through commingled recycling. Applying the percentage of plastic in the waste stream (12%) to the commingled totals, an additional 1,055 tons is estimated to be recovered. However, this would still only yield a 3% diversion rate.

The District has adequate infrastructure to capture this material with 44 drop-offs, nine non-subscription curbside services, and subscription curbside available throughout the District. The District’s low capture rate does not seem to be correlated with available infrastructure but rather with education and awareness from residents on what plastics are recyclable. The District is active in education and awareness about acceptable plastics as part of its “big five” recyclable materials.

Plastic resin codes may confuse residents, as they do not describe if something is recyclable and/or accepted in the area, which is significantly different from the resin grade used for material packaging. More recent packaging has #1 and #2 plastics in various shapes and the difference between non-bottle and rigid plastics. MRFs frequently do not always have end markets to sell all of the various resin grades. The District should monitor the materials delivered to the drop-off sites and determine the level of plastic contamination and the most common mistakenly recycled items. One possible method to achieve this is to conduct a waste audit at the material recovery facilities to determine the level of contamination in the stream.

The District accepts plastic bottles, jugs, and containers for soda, water, milk, shampoo, conditioner, and other similar bottles at drop-off recycling locations. These plastics are also referred to as polyethylene plastics with a resin code of #1 or #2. To avoid resident confusion and contamination, the District combines these items into plastic bottles and jugs, instructing residents to only recycle these items at drop-off locations and the curb.

 PETE	 HDPE	 PVC	 LDPE	 PP	 PS	 OTHER
polyethylene terephthalate	high-density polyethylene	polyvinyl chloride	low-density polyethylene	polypropylene	polystyrene	other plastics, including acrylic, polycarbonate, polyactic fibers, nylon, fiberglass
soft drink bottles, mineral water, fruit juice containers and cooking oil	milk jugs, cleaning agents, laundry detergents, bleaching agents, shampoo bottles, washing and shower soaps	trays for sweets, fruit, plastic packing (bubble foil) and food foils to wrap the foodstuff	crushed bottles, shopping bags, highly-resistant sacks and most of the wrappings	furniture, consumers, luggage, toys as well as bumpers, lining and external borders of the cars	toys, hard packing, refrigerator trays, cosmetic bags, costume jewellery, audio cassettes, CD cases, vending cups	an example of one type is a polycarbonate used for CD production and baby feeding bottles
						

B. Conclusions

Opportunities to explore for this Plan Period:

- Commercial Recycling & Source Reduction (ongoing program) – Fibers
 - Identify large commercial retailers by NAICS code.
 - Work to establish a relationship with contacts at the largest locations.
 - Cooperatively explore any beneficial activities the District can assist with or provide:
 - Recycling programs
 - Waste audits
 - Grant funding
 - Commercial hauler contacts
- Hauser Services Outreach and Partnership (new program) – Yard Waste
 - Outreach to Hauser Services to gauge interest in establishing a partnership with the District.
 - Technical assistance
 - Grant funding
 - District promotion
- Food Waste Management Program (new program) – Food
 - Create web infrastructure promoting local food waste diversion methods
 - Create a section of the website dedicated to food management.
 - Provide useful links to local resources and further information on the importance of food rescue and recovery.
 - Focus on methods to change consumer behavior to encourage source reduction over diversion or donation.
 - Partner with food banks and local restaurants.
 - List the local food bank’s location and contact information.
- Curbside/Drop-Off Recycling Initiatives (ongoing programs) – Plastic

- Explore methods to obtain reliable data from the various haulers operating in the District to document recycling efforts.
- Engage communities and stakeholders to determine barriers to plastics recycling and identify common mistakes that lead to “wish-cycling” and contamination.
 - Update educational materials with the results of community engagement.

5. Economic Incentive Analysis

Economic incentives are designed to encourage participation in recycling programs. Solid Waste Management Districts may choose to offer economic incentives to influence waste and recycling behaviors. These may include volume-based pay-as-you-throw (PAYT), grants, rewards, rebates, etc.

A. Evaluation

Economic incentives in the waste management field are offered and designed to influence behavior. Often, one of the strongest methods for behavior change is utilizing monetary factors such as cost savings, reimbursements, rewards, and rebates. A majority of SWMDs offering economic incentives in the State of Ohio do so by entwining the amount recycled to some sort of financial compensation or cost reduction of recycling.

The District offers economic incentives to help foster behavior change in the form of grant funding. The District has three grant programs offered to communities, residents, and businesses as economic incentives that are explored below.

Scrap Tire Grants: The District does not host scrap tire collection events and does not accept scrap tires at the two collection facilities. Instead, the District offers communities grant funding to host their own amnesty events for residents that are funded by the District. In 2022, 53 communities applied for this grant and the District awarded roughly \$105,000 in funding. Those communities who participated collected over 400 tons of scrap tires.

Market Development Grants: The purpose of this activity is to encourage businesses within the District to develop manufacturing of products using recycled material. The District monitors State and Federal grant programs that become available to aid in the development of this type of funding. The Policy Committee reviews proposals from established businesses and awards funding for local match portions of grant applications.

In 2020, Ohio Valley Waste approached the District to serve as the government sponsor for a grant to expand curbside recycling and/or upgrade equipment at their property in Trumbull County. The District readily agreed to work with them if they chose to apply. They did not choose to apply for the 2021-2022 grant cycle, but instead rolled out curbside recycling in some pilot areas without financial assistance from the District. Despite not applying in 2020, the interest and partnership have carried over into 2021 and 2022. Discussions with Ohio Valley Waste are ongoing, and the District intends to assist in the development of a small MRF, or recycling transfer station at their recently purchased site to allow for easier servicing of drop-off sites and curbside. When they are ready to proceed, the District will explore assisting them in receiving grant funding.

Recycling Incentive Grants: Community, business, and institutional grants are available to businesses, government entities, non-profit organizations, and education institutions interested in implementing a new recycling program or improving an existing program to support long-term recycling goals. Grants are awarded on a competitive basis annually.

Go Green Grants and Drop-off Improvement Grants were offered to communities in 2022. Over \$77,000 in Go Green Grants were awarded to communities for various programs. Most programs fell into one of four categories: a community electronics collection, benches and tables made of recycled materials, litter/dumping cleanup activities, or small upgrades to recycling drop-off sites including cameras and lighting. Community electronics collections were especially well-received and successful. Over \$170,000 was awarded to communities in Drop-off Improvement Grants (DIG) for recycling drop-off site improvements. Improvements included concrete pads/paving, fencing, cameras, gates, improved drainage, and lighting. These grants are not only helping to provide much-needed site improvements to make the sites more accessible and easier to maintain, but they are also bringing the District in as a more involved partner in the drop-off site program.

B. Conclusions

There are other options the District may explore during this planning period such as establishing pay-as-you-throw (PAYT) programs, rebates, reward systems, further financial assistance, etc. The District is focused on exploring curbside recycling options, data collection, and other programs in the District. As of this Plan Update, immediate further economic incentives are not a priority to be explored. The District is focused on how best to establish various programs, such as curbside recycling, that could benefit from economic incentives before focusing on the incentives themselves. The District is aware incentives can help alleviate some of the financial barriers residents and communities may experience and these will be a part of conversations in the future.

Potential future opportunities to keep in mind are as follows:

- Provide incentives to political jurisdictions in the form of financial rewards for achieving recycling rates. Steps for implementing this is to set an annual sum of money to issue to political jurisdictions. Higher financial reward is given to communities achieving greater diversion rates.
- Provide grants to political jurisdictions to implement PAYT programs. Through an application process, political jurisdictions could apply for a set dollar per household funding to assist with implementing PAYT.
- Provide grants to political jurisdictions to implement or convert to subscription curbside recycling programs. Through an application process, political jurisdictions could apply for funds to support local program improvements. Funding could also be used to prepare community-specific zero waste plans.

6. Restricted and Difficult to Manage Waste Stream Analysis

Goal 6 of the 2020 State Plan requires solid waste management districts to provide strategies for managing materials that are difficult to dispose of such as scrap tires, yard waste, lead-acid batteries, household hazardous waste, and obsolete/ end-of-life electronic devices, such as appliances. This analysis evaluates

the District’s strategies and programs to divert more unique materials which are typically for hard-to-manage waste in comparison to other recyclables.

A. Evaluation

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, heating oil, kerosene, household batteries, lead-acid batteries, pesticides, paint and paint thinners, mercury-containing devices, lights/light bulbs, and electronics.

The District accepts HHW at both collection facilities. The District has had a collection facility in Trumbull County since 2005 and in 2022 opened another collection facility in Geauga County.

Historically, the District hosted a one-day HHW collection that collected a large amount of material. Because the District opened the new facility in June 2022, it did not host a one-day event in Geauga County. HHW volumes for Geauga for the seven months it was open in 2022 were similar to the tonnage for the one-day event in 2021. Additional increases in HHW are expected in 2023, as the new facility will be open for an entire year.

Both facilities accept materials such as used oil, oil-based paints, fluorescent lights, solvents, gasoline, pesticides, herbicides, and various other cleaners and products used in residential homes. All HHW materials are collected, sorted, packaged, and transported offsite for proper treatment, recycling, or disposal. Both facilities accept HHW one day out of the week. Trumbull County accepts HHW on Wednesdays while Geauga County accepts HHW on Fridays. The District is working on retrofitting the Trumbull Collection Center to allow winter HHW collection. Currently, the collection facility in Geauga County is the only one accepting HHW all year.

TRUMBULL COLLECTION FACILITY

HOUSEHOLD HAZARDOUS

WASTE COLLECTION



ITEMS ACCEPTED	Geauga and Trumbull County residents ONLY	ITEMS NOT ACCEPTED
<ul style="list-style-type: none"> Automotive fluids Waste oil Painting Supplies (EXCEPT WATER-BASED PAINT)* Gasoline/Kerosene Pool chemicals Household Cleaning Products Lubricants, Solvents Lawn and Garden Chemicals Pesticides Alkaline/ Single Use Batteries Rechargeable Batteries Compact Florescent Bulbs Cooking Oil Fire Extinguishers Florescent Light Bulbs Items Containing Mercury <p style="font-weight: bold; font-size: small;">Call or visit our website for a full list of items accepted</p>	<p style="text-align: center; font-weight: bold; color: white;">OPEN Spring thru Fall at these Days and Times</p> <p style="text-align: center; font-weight: bold; color: white;">WEDNESDAYS</p> <p style="text-align: center; color: white;">April 20 – October 26, 2022 10:00 am - 3:00 pm</p> <p style="text-align: center; font-weight: bold; color: white;">SATURDAYS</p> <p style="text-align: center; color: white;">May 7, Jun 4, Aug 6, Sept 10, Oct 1 9:00 am - 12:00 noon</p> <div style="background-color: #90EE90; padding: 5px; margin-top: 10px;"> <ul style="list-style-type: none"> Don't pour into storm sewers, sinks or septic systems. Don't burn or bury materials Don't mix materials together. </div>	<ul style="list-style-type: none"> NO Medical Waste/ Sharps/Medications NO Acetylene Tanks/ Unknowns Tanks NO Latex Paint NO Smoke Detectors NO Joint Compound NO Business Waste Accepted NO containers > 5 gallons NO out of District Residents (ID Required)



Gaugu-Trumbull Solid Waste Management District

Table H-6.1 HHW Cost and Tons Collected Historically

HHW	2018	2019	2020	2021	2022	2023*
Tons	81	Data Not Available	75	64	77	46
Cost	\$84,530	\$102,062	\$83,794	\$193,190	\$75,420	\$325,070
Cost/Ton	\$1,038	N/A	\$1,120	\$3,003	\$978	\$7,102

Source: District Material Records

*Through September 2023

HHW collection is challenging. These materials are produced by every household and are considered hazardous as they contain chemicals that pose human and environmental health risks. Due to this, the management and collection of HHW is expensive and creates challenges in keeping the costs within a reasonable budget while also providing convenient collection for residents. As can be seen above, the District collects between 60 and 80 tons of HHW each year depending on the amount residents generate.

The District has an HHW vendor it uses to properly manage these materials. This company’s billing system operates on a slight time delay. The District often pays for the last two months of the previous year in the following spring. In 2020 and 2022, this delay was exacerbated, causing a significant amount owed by the District to be paid in the following springs (2021 and 2023 respectively). This is the primary driver of the large increases and decreases annually seen through this period.

In 2022, the District entered into a new contract with its HHW vendor. However, this new contract has significantly higher prices than the previous one. The District is expecting the cost to manage HHW to increase dramatically, as can be seen in effect for 2023. However, roughly 1/3rd of the 2023 cost is attributable to 2022 for the reasons described above.

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 of nonworking electronics.

Both collection facilities in the District collect electronic waste from residents. Collection facilities provide two days each week for residents to drop off electronics. Trumbull County’s E-waste days are Tuesday and Wednesday while Geauga County’s are Thursday and Friday.

In February 2022, the District changed its e-waste vendor to Green Wave Electronics, an R2v3 Certified vendor. The previous vendor used downstream R2-certified vendors but was not R2-certified. Changing to an R2-certified vendor increased the types of materials able to be recycled and provided much-needed data to the District on what types of materials are being accepted and how they are recycled. There was a significant increase in tonnage recycled for computers, laptops, and other e-waste with the new R2-certified vendor.

In 2022, the District offered box truck rentals, allowing communities to collect electronics and appliances at their local community cleanup events, so they could easily transport materials to the closest collection facility in the District for processing. Fifteen communities collected electronics during their community cleanup days. Each transported at least one box truck full of materials to a collection facility for processing.



Additionally, GreenBoard IT opened a location in Warren where businesses, schools, and residents can bring electronics for recycling. The District collection facilities are for residents only, so this operation provides service to both District residents and the surrounding area.

Table H-6.2 Electronic Waste Cost and Tons Collected Historically

E-Waste	2018	2019	2020	2021	2022	2023*
Tons	51	116	123	106	151	166
Cost	\$36,863	\$61,815	\$64,441	\$65,962	\$64,766	\$47,565
Cost/Ton	\$724	\$532	\$524	\$621	\$429	\$287

Source: District Material Records

*Through September 2023

The District has seen an increase in electronic waste collected over the last five years. A variety of factors helped this such as the District’s box truck rental service for appliances and E-waste, the vendor change described above, and the addition of the second collection facility. The District is collecting more waste while keeping costs relatively low, thus the cost to manage per ton has drastically decreased.

Appliances:

Both collection facilities in the District accept appliances on the same days as electronics. In Geauga County, there are no scrap vendors who accept appliances with freon, so there is a great need for proper disposal of freon-containing appliances. Both collection facilities accept dehumidifiers, freezers, air conditioners, and refrigerators. In addition, the District can accept washing machines, clothes dryers, water heaters, microwaves, ovens, stoves, furnaces, and other items made primarily of metal.

The District collected 28 tons of appliances at the Geauga Collection Facility during the several months it was in operation in 2022. 2023 tonnages are expected to be higher, given a full year of operation. Additionally in 2022, the District offered box truck rentals, allowing 15 communities to collect the electronics and appliances during their local community cleanup events. The truck rentals made it much easier to transport materials to the closest District collection facility for processing. Each rental truck transported at least one box truck full of materials to a collection facility for processing.

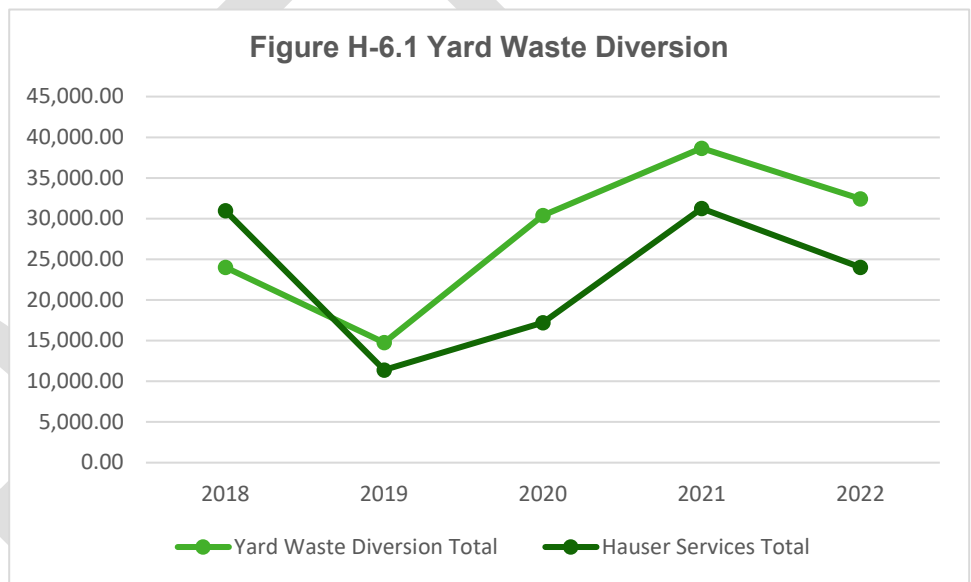
Appliance collection does not cost the District anything, apart from labor. The District ships collected materials for recycling to end markets and receive scrap revenue back. The District profits a small amount

from appliances. The cost of transportation is covered by the value of the scrap recycled, so the end markets take that out of the check sent to the District.

Yard Waste:

Data shows most of the District’s diverted materials come from yard waste and other organic materials. The District continues to offer educational instruction on composting to the public. In 2022, there were six educational programs conducted on composting. Subcontracting the educational programs in Geauga County to the Soil and Water Conservation District not only strengthened the District’s relationship but also resulted in higher volumes of compostables being diverted. Another initiative that has proven successful with residents has been the continual offer of discounted compost bins. The compost bins make it convenient to store the used organics in a container, in the house, without experiencing smells or fruit flies. The district has enjoyed dramatic volume increases since 2015 and generates additional revenue from the sale of compost bins.

The District does not accept yard waste or organics at either of the collection centers. It relies on private businesses, community yard waste, and at-home methods to divert this waste stream. Despite this, yard waste makes up a majority of the waste diversion in the District. The District analyzed this material stream and found that one private business that reports to the EPA, Hauser Services, manages most of the District’s yard waste diversion. Over the last five years, Hauser Services has managed on average



75% of the District's yard waste diversion. As can be seen above, the District’s yard waste diversion compared to Hauser Service’s diversion mirror each other. When Hauser Service’s diversion moves, the District’s diversion moves in the same direction.

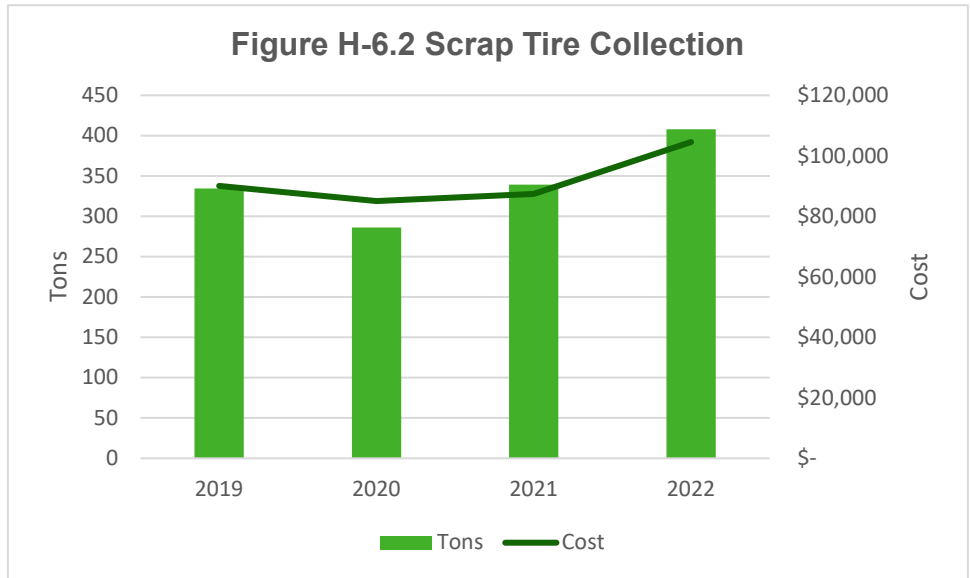
While it is a great source of diversion for the District, being so reliant on one business creates an issue of resiliency. With such a dependency on one facility, the District does not have the flexibility to withstand changes to the current system. For example, if Hauser Services were to be forced to shut down, even for one year, the District may or may not be able to meet Goal 2.

Scrap Tires:

Ohio EPA estimates more than 12 million scrap tires are generated in Ohio annually. Scrap tires not properly disposed of have the potential to end up in illegal dumps, creating hazards to public health and the environment.

The two District collection facilities do not accept scrap tires. However, the District awards funding to cities, villages, and townships to host scrap tire collections for residents of their community. Due to the rising cost of disposing of tires, the District increased its budgeted expenses in 2022 to be between \$100,000 and \$150,000 of available funding. Every community in the District is given the opportunity to host a scrap tire amnesty event which is funded by the District, offering residents a free outlet to properly dispose of scrap tires. In 2022, only four communities chose not to apply. Fifty-three communities within the District received funding.

This program has been largely successful, averaging about 340 tons per year collected from communities throughout the District.



The average cost per ton across the last four years was \$270 per ton. Tonnage data was not available for 2018. The District has a list of all scrap tire haulers who are registered with Ohio EPA on their website, providing names and contact information for each company.

Lead-Acid Batteries:

Lead-acid batteries are accepted at District collection facilities but historically have not been tracked separately as their own material category. Instead, they were included in the HHW collection totals. Beginning in 2021, the District started separating LABs. In the reference year, the District collected over three tons.

B. Conclusion

A majority of the District's difficult-to-manage waste streams are collected at the District-owned collection facilities. These facilities provide a strong system of managing these difficult to dispose of waste streams, providing timely and convenient management. The District does not provide infrastructure to support yard waste and scrap tire diversion, relying on a decentralized management system from private businesses.

Opportunities to explore for this Plan Update:

- Yard Waste Management Technical Assistance (Ongoing Program)
 - Explore options for providing yard waste management at collection facilities.
 - Opportunity to work with Hauser Services to establish a working relationship/partnership to ensure yard waste diversion remains.
 - Technical assistance
 - Grant funding
 - Add website infrastructure for yard waste diversion.
 - Local compost facilities

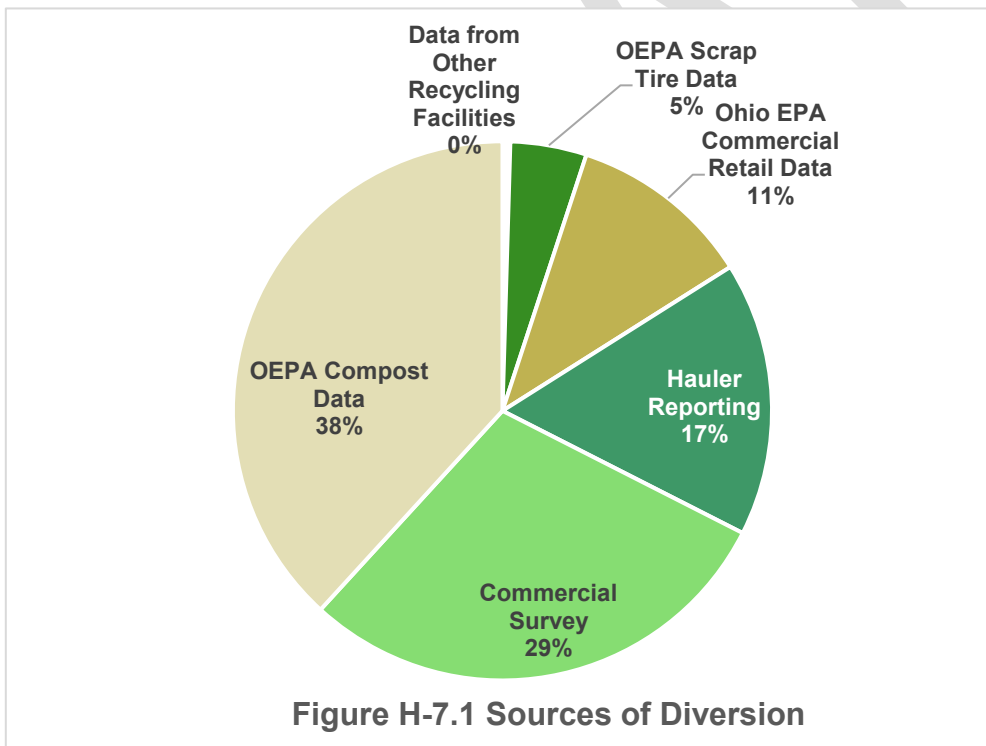
- Communities with curbside collection of yard waste
- Education for at-home composting
- Scrap Tire Management (new program)
 - Explore options for providing scrap tire management at collection facilities.
 - Continue to provide grant funding for community scarp tire amnesty events.

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 looks at the diversion programs, infrastructure, rate and trends, and materials.

A. Evaluation

Residential/commercial diversion in the District has been volatile over the last five years. The District reported a low of roughly 40,000 tons in 2019 and a high of 120,000 tons in 2021. Year-over-year the District has experienced large swings either up or down but has not seen any consistency. In the reference year, the District recorded diverting roughly 88,000 tons. The District believes the large swings in the data are not the result of business and residential recycling practices, but are instead a function of inconsistent data, data tracking, and/or uncreditable materials mistakenly credited.

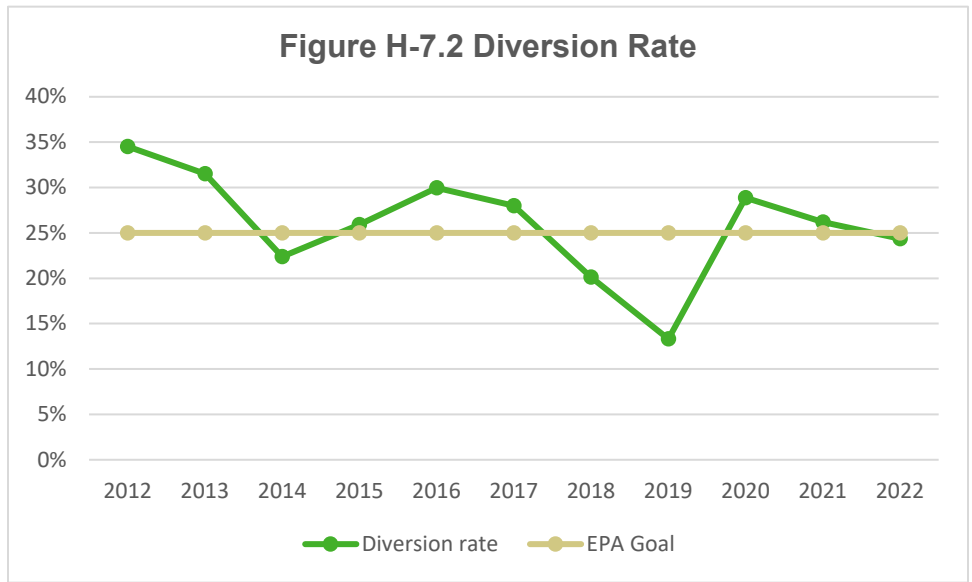


The District collects data from a variety of sources. The largest driver behind the District’s diversion rate is the Ohio EPA compost report. 38% of all diverted material derives from this report. Other sources of data used to calculate the diversion rate for the District are recycling facilities, Ohio EPA commercial retail data, District programs, Ohio EPA scrap tire reports, and curbside/drop-off programs. **Figure H-7.1** shows the breakdown of the District’s data sources by percentage. Drop-off and curbside

values are included in the hauler reporting data and are not shown graphically above. The District is faced with challenges in acquiring data for these programs, see *Section H-1* for more details.

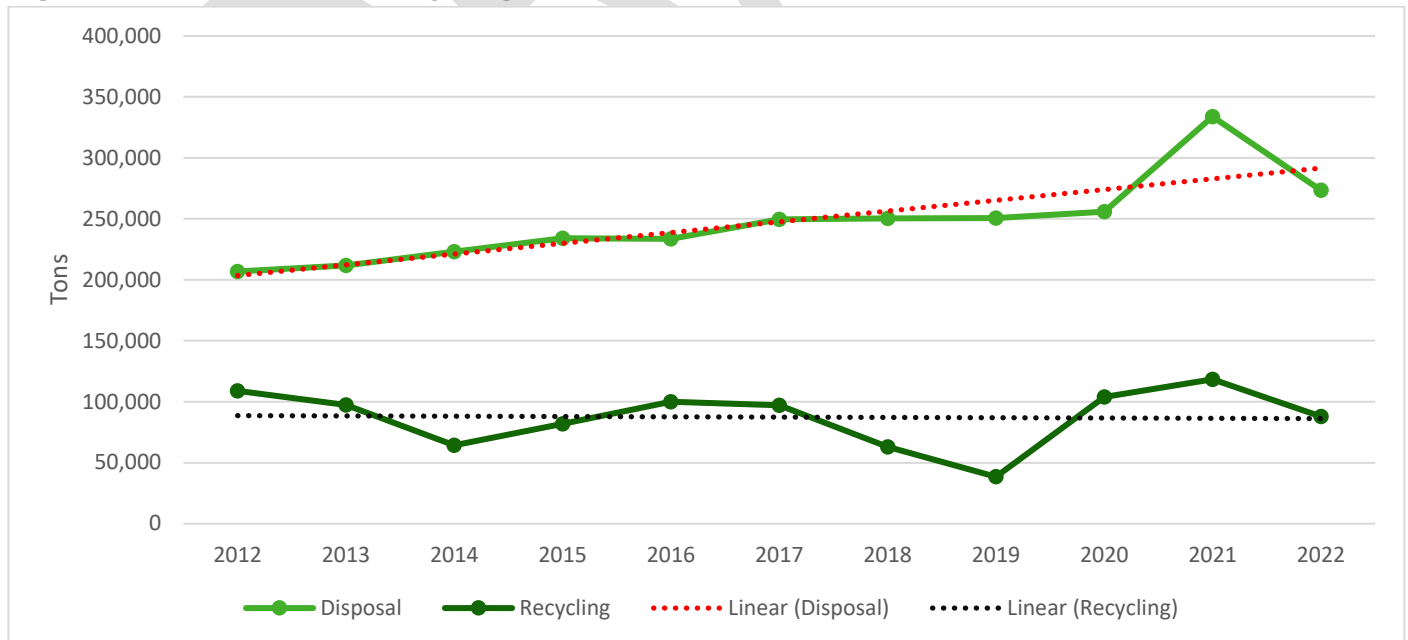
Over the last ten years, the District has dropped below the goal diversion rate four times, in 2014, 2018, 2019, and 2022. The District wants to improve its resiliency to unexpected changes in the diversion system. To best achieve this, the District analyzed its current diversion infrastructure and data collection methods. The following analysis explores gaps in the current system and opportunities to explore that will allow for improved data collection, documentation, material diversion, and better resiliency to change.

Figure H-7.2 presents the District's diversion rate compared to the goal diversion rate set by Ohio EPA in the 2020 State Plan of 25%. The District analyzed the disposal and recycling trends over the same period of time to discover why the diversion rate fluctuated as such. Upon closer inspection, the District concluded that apart from inconsistent data from the commercial sector, the amount disposed of by the District has increased from 2012 to 2022.



The average number of tons disposed of over this time was roughly 250,000, and the District Disposed of roughly 275,000 in 2022. Conversely, the average number of tons recycled was roughly 87,500 and the District diverted 88,000 tons in 2022. The analysis shows that the District's waste disposal on average is increasing faster than the waste diverted is increasing.

Figure H-7.3 Disposal and Recycling 2012 to 2022



As can be seen from the graph above, the linear rate of change shows the District’s disposal trendline increasing while the District’s diversion trendline has remained flat. Furthermore, the District’s population has declined by roughly 3.5% in the same period, while disposal tonnages increased by approximately 33%. The District is generating more waste despite experiencing an overall population decline. The District believes that this trend also affects recycling, however, the data is not being captured to reflect it. The District will emphasize efforts on the commercial survey throughout this planning period to ensure that Goal 2 is met.

Many local businesses are likely recycling, but the District has not been able to record this diversion through the annual commercial surveys. There is a significant opportunity to demonstrate higher recycling tonnages by focusing on commercial survey data collection, organization, and maintenance.

To better understand what materials the District can target to improve recovery, three regional and similar-sized Districts that have comparable demographics were benchmarked to the District. **Table H-7.1** below presents this comparison.

Table H-7.1 Benchmark Diversion by Percent of Material Stream

District		Geauga-Trumbull	Mahoning	Lake	Portage
Population		295,550	221,209	231,842	161,791
Percent of Diversion Stream (2022)	Appliances/ "White Goods"	0%	0%	0%	0%
	Household Hazardous Waste	0%	0%	0%	0%
	Used Motor Oil	0%	0%	2%	0%
	Electronics	0%	0%	0%	0%
	Scrap Tires	5%	4%	2%	3%
	Dry Cell Batteries	0%	0%	0%	0%
	Lead-Acid Batteries	0%	0%	0%	0%
	Food	1%	7%	0%	0%
	Glass	0%	1%	3%	0%
	Ferrous Metals	16%	27%	4%	0%
	Non-Ferrous Metals	1%	1%	2%	0%
	Corrugated Cardboard	19%	15%	18%	8%
	All Other Paper	3%	7%	5%	0%
	Plastics	1%	1%	2%	0%
	Textiles	0%	3%	4%	0%
	Wood	5%	21%	0%	0%
	Rubber	0%	0%	0%	0%
	Commingled Recyclables (Mixed)	10%	0%	4%	13%
	Yard Waste	37%	13%	51%	74%
	Other (Aggregated)	1%	1%	2%	1%
Total Tons Diverted (2022)		87,968	87,595	91,951	76,448

Source: 2022 District ADRs

Note: Values indicated with 0% are not true zero, the actual value is too small to be represented on a percentage basis.

Table H-7.1 presents the benchmarked districts’ complete material diversion stream in 2022. The higher the percentage of the total stream each material comprised, the closer to green it becomes.

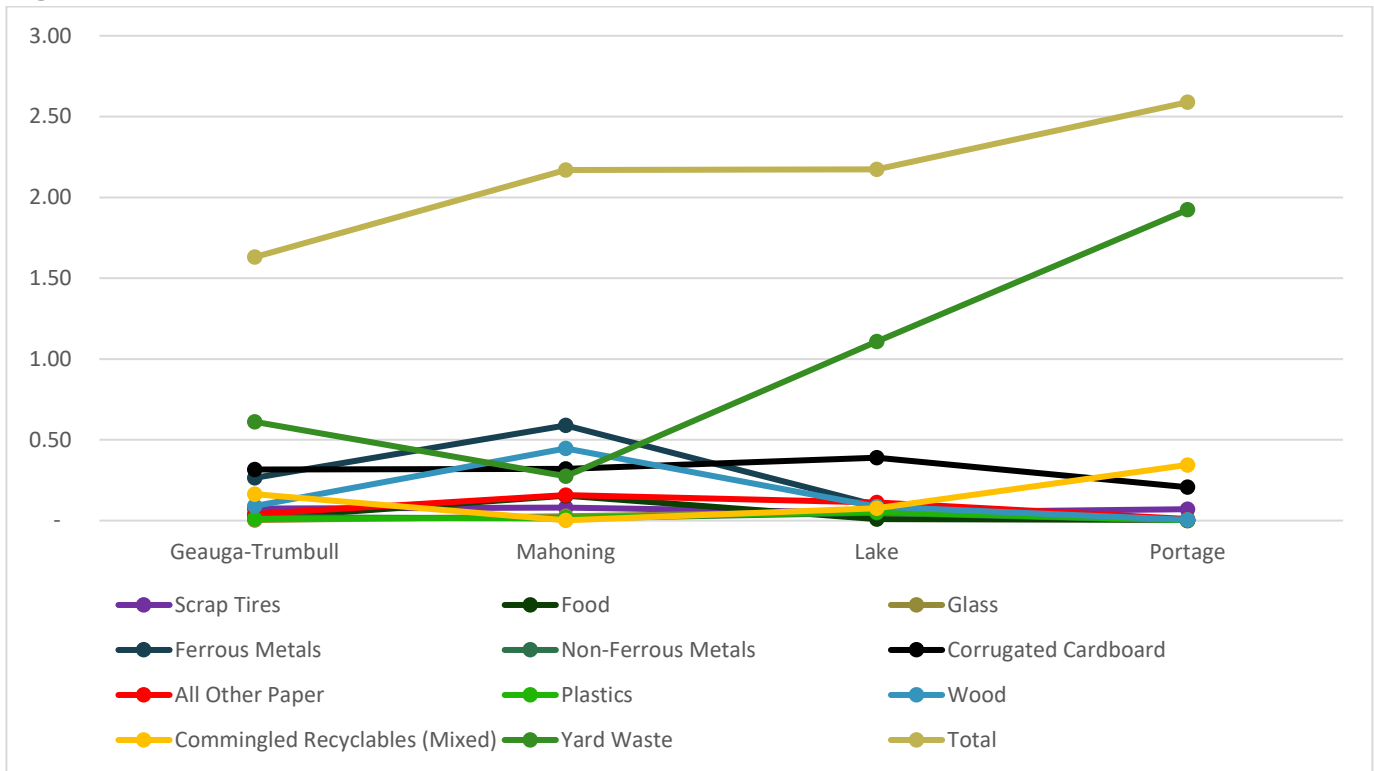
Three of the four districts compared, including Geauga-Trumbull, report yard waste as the leading single material diversion. It is not unusual for rural Districts to have a large percentage of their diversion stream be organics. In Districts such as these, there are more challenges to creating recycling programs and infrastructure than there are for larger, more urban Districts. The land use of rural counties being predominantly undeveloped is a key factor in this trend. There is much more farmland and pastures, entities producing organic waste. The rural counties also have fewer densely populated areas and are instead spread thinly over large patches of land, making centralized waste collection challenging.

Of the four districts, Geauga-Trumbull has the 2nd lowest percentage of yard waste in the diversion stream. Both Lake and Portage Counties had significantly more of a percentage of yard waste, despite being within ~10,000 tons of Geauga-Trumbull's total tonnage. The District compares well in its collection of commingled recycling, cardboard, and ferrous metals collection, either ranking first or second among those districts compared. However, the District seems to have room for improvement in the collection of paper, both Mahoning and Lake Counties are nearly double the percent found in the District waste stream. Mahoning County has the highest percentage of paper collection in the comparison. This likely stems from their School Paper Collection Program. This program collects high-grade paper, mixed low-grade paper, computer paper, and most publications at Mahoning County's private and public schools. A District-owned 4-cubic yard front-load container is situated at 84 participating locations. Once filled, they are reported to the District for unloading and recycling. This program collected nearly 2,500 tons in 2022. The District is exploring offering a similar program to schools within Geauga-Trumbull with the new drop-off bid expected to go out in 2024. See *Appendix L* for more details on school recycling.

According to USEPA⁵, the top materials recycled nationally are paper, cardboard, and metals. These materials specifically have high recyclability due to the cost-effectiveness of using recycled materials over producing new ones. Waste is the same as any other commodity, it flows based on economic feasibility. Manufacturers can and will continue to use recycled material whenever possible simply because it is more economically viable to do so. There are markets for these materials, and they will only continue to grow as the national picture shifts toward circularity in the material production system.

⁵ U.S. 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>

Figure H-7.4 PPD Diversion



Note: PPD is pounds per person per day.

Figure H-7.5 presents some of the most common recyclable materials across the benchmarked districts. The materials are normalized for comparison purposes by calculating the diverted pounds per person per day (PPD) value. In terms of overall diversion, the District has the lowest PPD of the four compared Districts. Despite yard waste comprising a majority of the District’s diversion stream, the PPD is roughly half of Lake County’s and nearly a fourth of Portage County’s. The District does compare well with most other material categories. Notable material category deviations from other Districts include Mahoning County’s ferrous metals, wood, and paper, and Portage County’s commingled recycling. Importantly, Portage County hauls its own recycling and as a result, has better access to its diversion tonnages for commingled recyclables. Based on this analysis, Mahoning County has the most balanced diversion stream between all materials. Interestingly, Mahoning County is the only District of the comparison to not have yard waste as their number one diversion material.

B. Conclusion

The District’s diversion rate has seen large swings of highs and lows over the last ten years. The District met the goal diversion rate of 25% in six out of the last 10 years. The District believes the instances it did not achieve this goal rate were a function of data collection rather than lack of recycling. The District has also seen a rise in disposal tonnages over this time frame, while recovery tonnages have experienced volatility but show a flat trendline. The District will make a concerted effort to increase the responses received from the commercial survey through this planning period. As such, the District is projected to achieve Goal 2 through the planning period.

Data collection is a gap in the District's current recycling system. While the District receives some data from haulers servicing non-subscription curbside as well as for drop-off tonnages, the remaining haulers operating and servicing subscription-based recycling programs do not report to the District on the amount of materials diverted. The District will explore the feasibility of working with smaller local haulers to gather data for diverted materials and will work with its current service provider, Ohio Valley Waste, on receiving reliable data for each drop-off site.

Curbside recycling, specifically non-subscription, is generally the most effective method of increasing the number of materials diverted from landfills. In areas where curbside is unavailable, providing access to subscription-based curbside recycling and/or drop-off locations is a viable option to fill in gaps. Drop-off locations placed in higher population density or centralized areas yield the highest material diversion. As of this plan update, the District has nine non-subscription curbside services and 44 drop-off locations. Where non-subscription curbside is not available the District does have subscription curbside, though there is no organized collection system, and the District does not receive tonnages from all haulers. There is an opportunity to explore providing additional non-subscription curbside programs. See *Section H-1* for a full analysis.

Opportunities to explore for this Plan Update:

- Data Collection (New Program) – Reach more businesses to get more responses to annual surveys.
 - Conduct a study to identify businesses in the District by NAICS code and their addresses.
 - Build a contact list and update annually based on changes of address, business closure/opening, and contact information.
 - Work with local planning agencies or economic entities for business identification.
 - Send materials to the largest businesses requesting the completion of the District's annual survey.
 - Conduct follow-up emails and phone calls to get data.
 - Keep a record of the current year and two year's prior data and responses.
 - Track response rate.
- School Paper Recycling Program (new program)
 - Explore the feasibility of partnering with local schools to divert paper and cardboard.
 - Cost
 - School interest
 - Research and work with neighboring Mahoning SWMD to identify challenges and barriers to success.
- Explore Non-Subscription Curbside in areas lacking services (New Program)
 - See *Section H-1* opportunities.

8. Special Program Needs Analysis

Ohio Revised Code 3734.57(G) gives districts 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 districts 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 their value to the District.

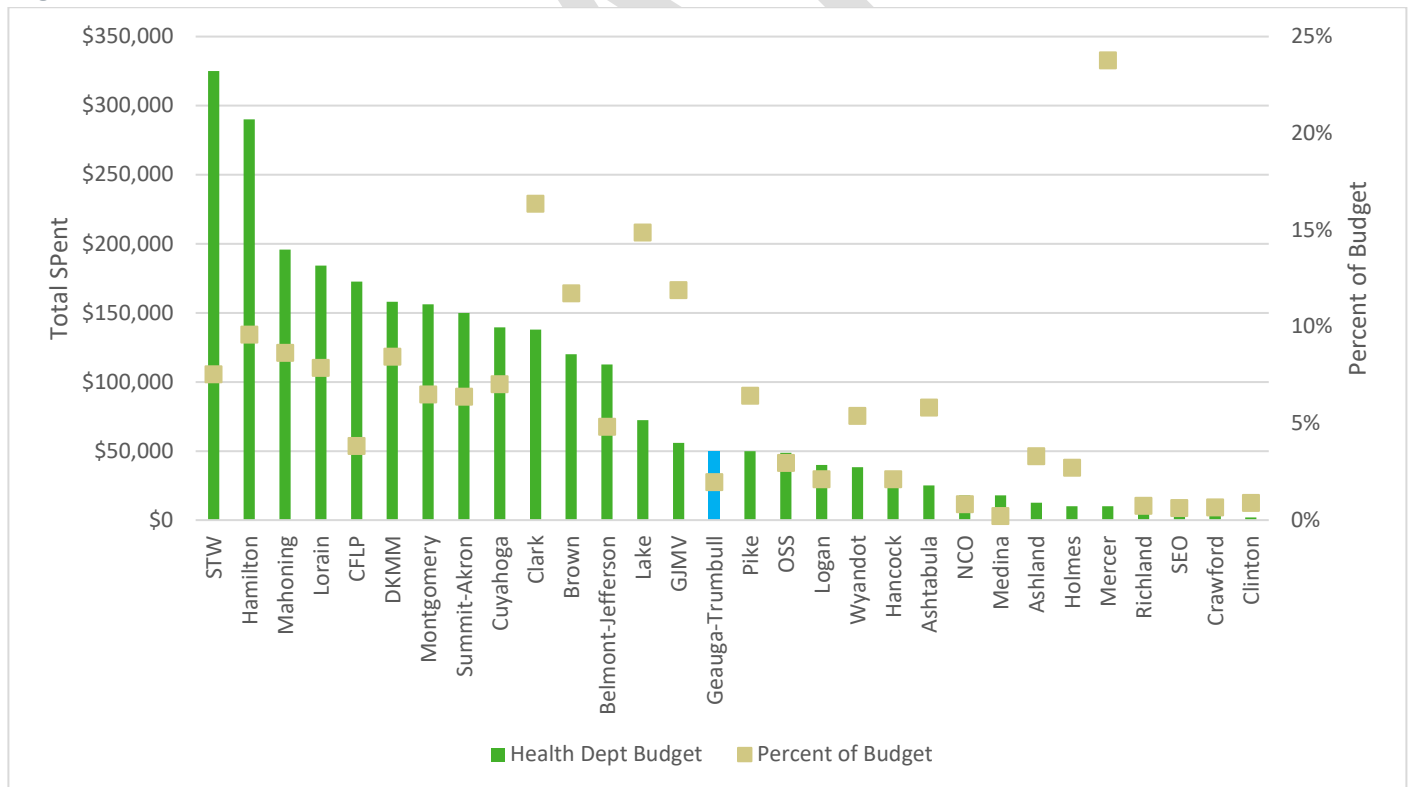
A. Evaluation

Environmental Enforcement Program: The District has supplemented the cost of an environmental law enforcement program with the Geauga County Sheriff's Department, Trumbull County Sheriff's Department, and Warren City Police Department since 2008. Officers partner with the District and are assigned based on a contractual agreement to enforce litter laws, open dumping, and zoning violations relating to environmental issues. Monthly meetings are had with the Health Districts to ensure the program is successful.

In 2023, multiple illegal dumping complaints were referred to law enforcement for fines or community service mandates. Illegal dumping at sites with cameras is down significantly. Combined with the availability of District grant funds to purchase cameras and other security upgrades, the District is pursuing support at the community level, rather than funding a separate program at this time. This strategy will be reviewed and evaluated annually to determine when a separate program is ready for implementation.

Health Department Enforcement: The District has provided financial assistance to Ohio EPA-approved health districts since 1997. The District continues to provide funding to the three health districts, Geauga County, Trumbull County, and the City of Warren. The District provides \$50,000 annually to health districts, this equates to roughly 2% of the District's budget. **Figure H-8.1** below benchmarks the District's health district funding to other solid waste management districts in Ohio.

Figure 8.1 Funds Allocated to Health Departments



Source: Ohio EPA Summary Fee Reports

Note: This table includes all allowable uses for funding to the health department by SWMDs. These uses are as follows:

- #3 Expenditures providing financial assistance to boards of health within the district if solid waste facilities are located within the district, for enforcement of Sections 3734.01 to 3734.13 of the Ohio Revised Code.

- #5 Expenditures for paying the costs incurred by boards of health within the district for collecting and analyzing samples from public or private water wells on lands adjacent to solid waste facilities contained in the district's approved plan (pursuant to contracts entered into with boards of health).
- #7 Expenditures providing financial assistance to boards of health within the district for enforcement of Section 3734.03 of the Ohio Revised Code (open dumping restrictions) or to local law enforcement agencies having jurisdiction within the district for enforcing anti-littering laws and ordinances
- #8 Expenditures providing financial assistance to boards of health within the district that are on the Ohio EPA approved list to defray the costs for participation of their employees responsible for enforcement of solid waste regulations in Ohio's EPA's training and certification program

Of the compared districts, Mercer County spent over 20% of the total budget on the health department. Clark County was next highest, spending over 15% of the total budget on the health department. Both the District's expenses and percentage of budget used are among the lowest in Ohio.

Great American Cleanup:

For over 30 years, the District has participated in the Keep America Beautiful/Great American Clean Up Program. Cleanups are held throughout the warmer months before the weeds grow to cover unsightly road litter in ditches, parks, and along roadsides. Volunteers are given trash bags, gloves, vests, and other safety equipment for their clean-ups which can be done in conjunction with beautification projects within the community. This strategy helps to reduce litter and keep the community clean.

Each year the District has over 1,000 volunteers across multiple events to pick up trash and recycling. In 2022, the District provided supplies to over 2,000 volunteers who collected 41,787 pounds of trash and 1,928 pounds of recyclable materials.

B. Conclusion:

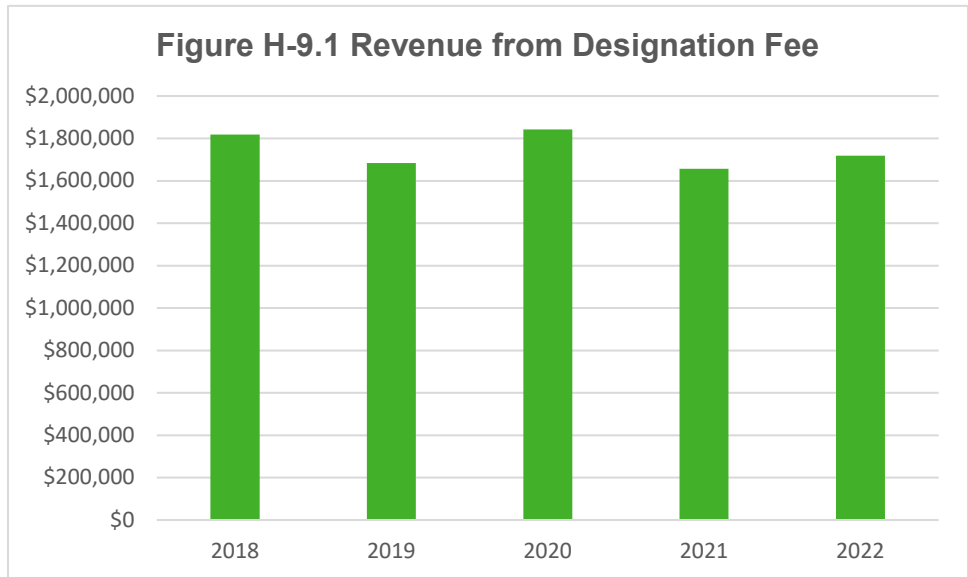
While not direct, special needs help the District achieve state goals. Districts with a strong enforcement program help keep illegal dumping and contamination minimal. Health department funding in the District investigates complaints and is a partnership that supports the waste management system. These types of special programs provide value when implemented with performance checks and stakeholder buy-in.

9. Financial Analysis

The purpose of this analysis is to examine the District's current financial position and assess the financial requirements and revenue sources throughout the next planning period. The District is currently funded through revenues primarily from generation fees, user fees, and the sale of collected recyclables. Additionally, the District received donations and interest in small amounts each year from 2017 to 2021.

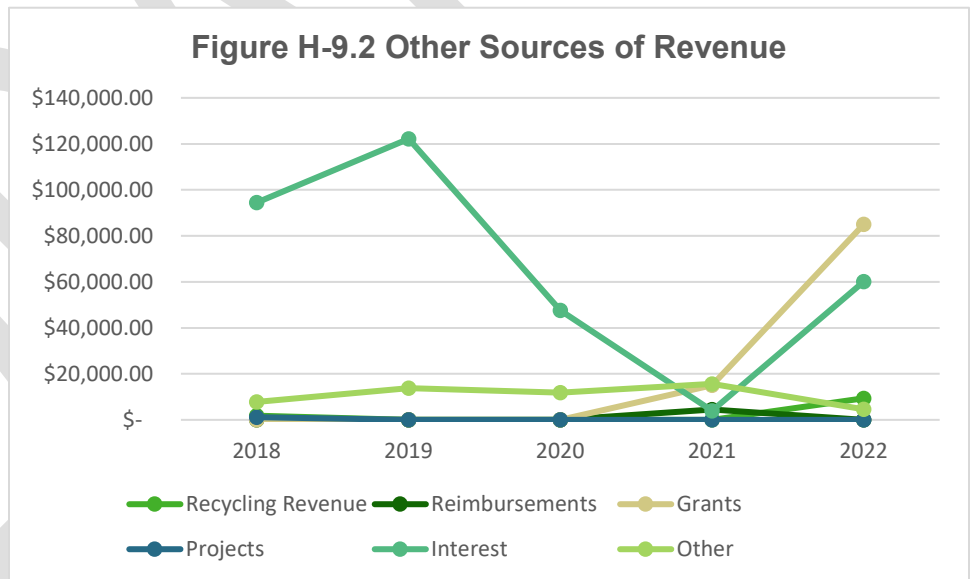
A. Evaluation

The District does not have a tiered disposal fee structure. Instead, the District is funded primarily by contracted designation fees. The District collects \$5.50 per ton from waste taken to designated facilities. The fee is collected at the first point of disposal by the designated facilities, including landfills, transfer stations, incinerators, and material recovery facilities which is remitted back to the District. The District established this fee in 2007 and has not needed to raise it since its creation. **Figure H-9.1** below shows the District’s historical revenue received from its designation fee.



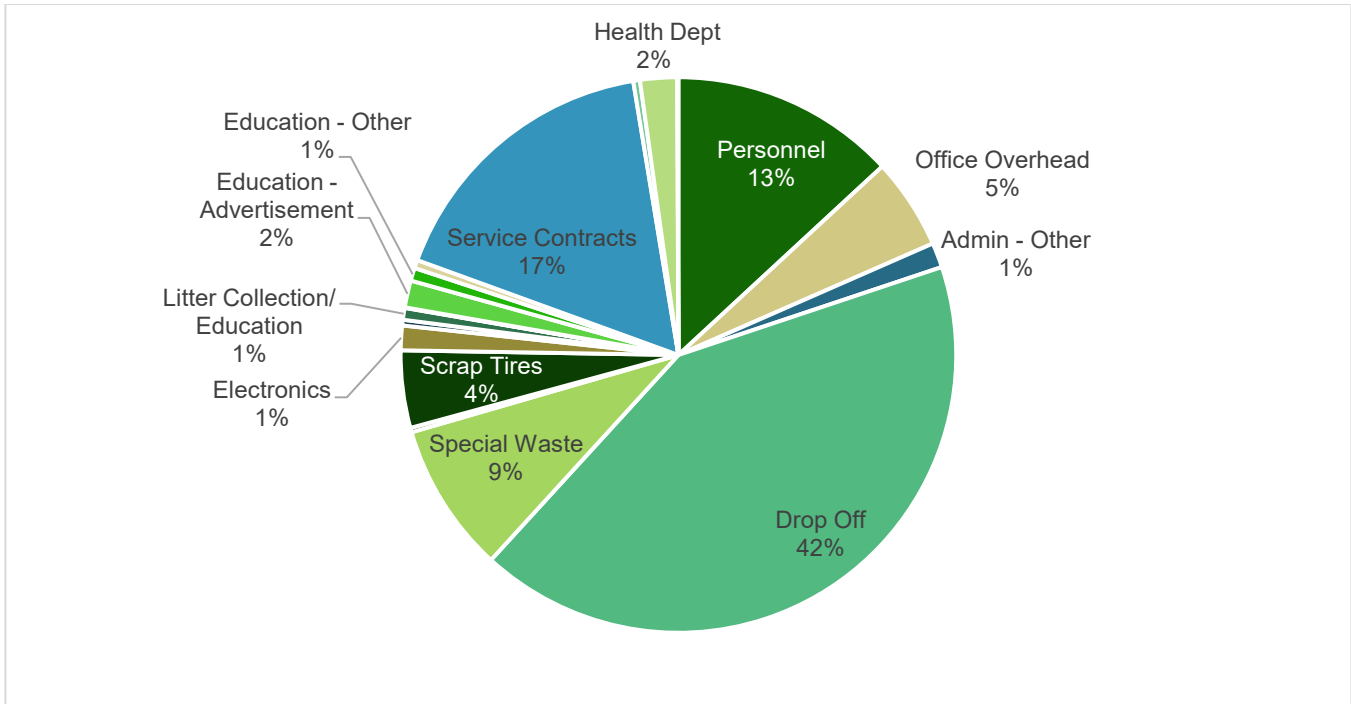
Historically, the District received designation fees on 95% of all waste disposed of. Certain waste is exempt from fees such as landfill alternative daily cover (ADC) materials. Furthermore, waste origins may be misidentified from haulers. These factors contribute to the 5% of waste disposal that fees were not collected on.

The District does receive revenue from a variety of other sources as well. As can be seen in **Figure H-9.2**, the District receives revenue consistently from a few sources. These include interest and other. Other revenue consists of the sale of at-home composting bins as well as premiums from health care plans. The District receives interest payments monthly on the amount in the account used to run the District’s operations. During COVID-19 (2020 and 2021), interest received dropped dramatically but has come back well over the last 12 months. The District is still receiving less now than pre-COVID because it spent almost \$2 million on the new collection center in Geauga County.



In the reference year, the District spent a total of roughly \$2.3 million. The top expense categories were drop-off programming, service contracts, and personnel respectively. **Figure H-9.3** below presents the District’s expenses for 2022.

Figure H-9.3 District Expense Distribution



Source: Quarterly Fee Reports 2021

Planning Period Budget Projection Scenarios

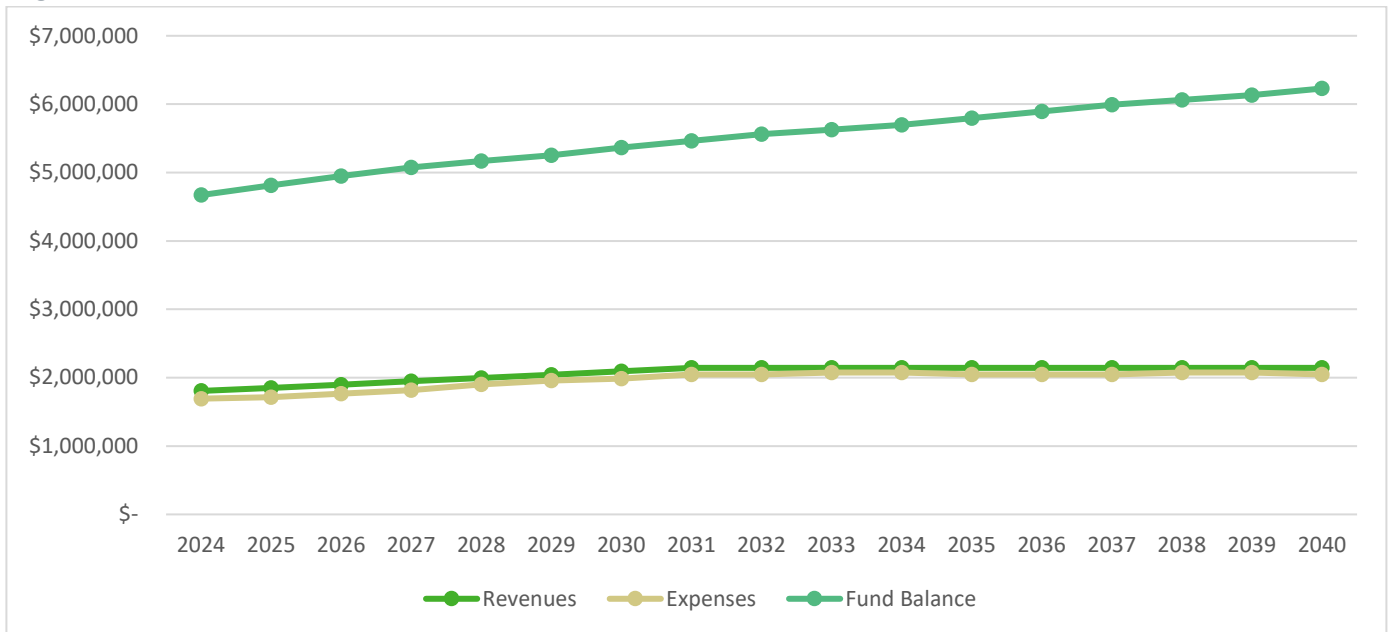
In 2021 the national average inflation rate was 4.7% and the January 2022 inflation rate was 8.0%⁶ The Policy Committee must determine what inflation factor to apply for the planning period and what services require additional spending for the planning period. Presented here are three possible budget scenarios to consider. The following scenarios are preliminary estimates used to gauge a direction for future planning. None of these are final projections for the District’s budget. Through discussions with the Policy Committee, the selected scenario will be fine-tuned for accuracy. See *Appendix O* for the projections to be used for the planning period by the District.

Scenario 1: Maintained Expenses with 3% Inflation

Under this budget scenario, the District maintains the current expenditures and assumes a 3% inflationary factor through the planning period. The District flatlined the expenses and revenues after the 6th year (2032) of the planning period. Given these criteria, the District is projected to bring in more revenue from designated disposal fees than will be spent. The result is a growing fund balance through the plan period. **Figure H-9.4** below shows this scenario.

⁶ Current U.S. Inflation Factor. <https://www.usinflationcalculator.com/inflation/current-inflation-rates/#:~:text=The%20last%20column%2C%20E2%80%9CAve%2C,year's%20actual%20rate%20of%20inflation.&text=Avail.,Feb.>

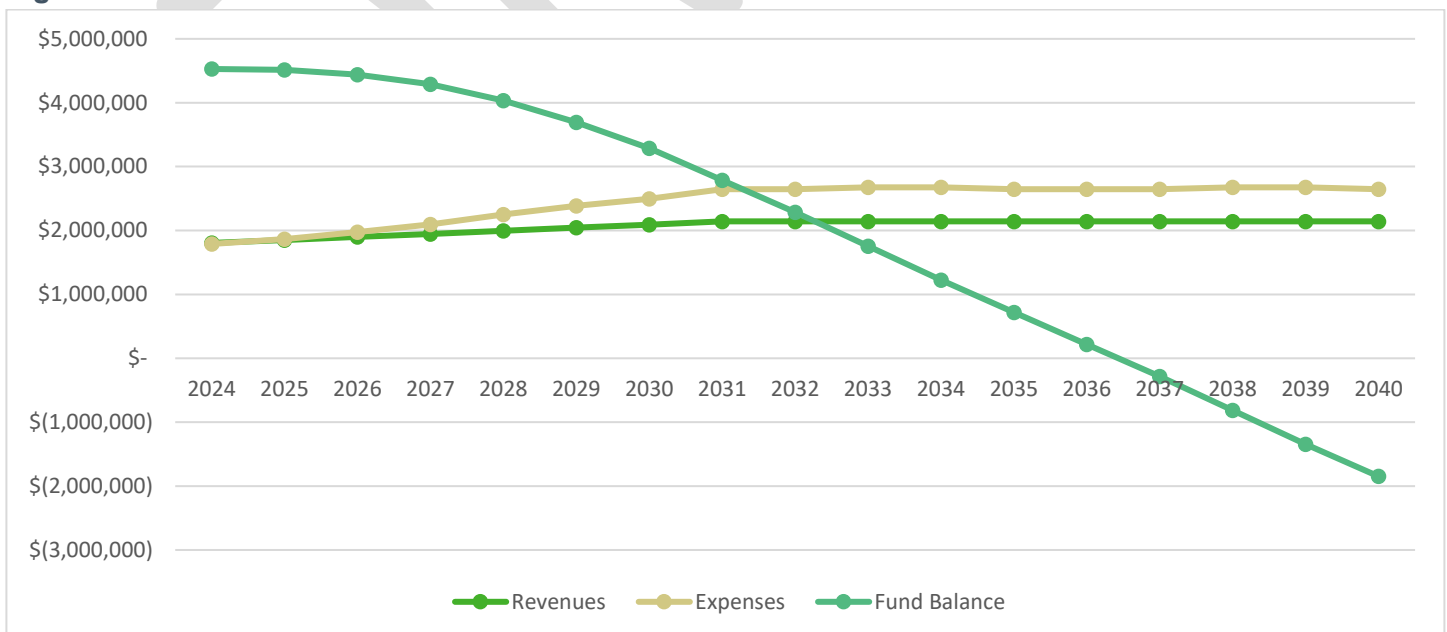
Figure H-9.4 Scenario 1



Scenario 2: Maintained Expenses with 6% Inflation

Under this scenario, the District increased the inflation factor to 6% through the planning period. Expenses and revenues remain flatlined after the 6th year (2032) of the planning period. Without an increase in revenue, the District’s fund balance will reach a deficit in 2036 even with the flatline. The District’s fund balance will deplete rapidly unless additional revenue is brought in. There are a variety of ways to do this, one way is to increase the designation fee on waste disposal. A \$0.75 to \$1.00 fee increase will prevent the budget from drawing a deficit through the planning period, although the 6% inflation factor still yields a depleting balance.

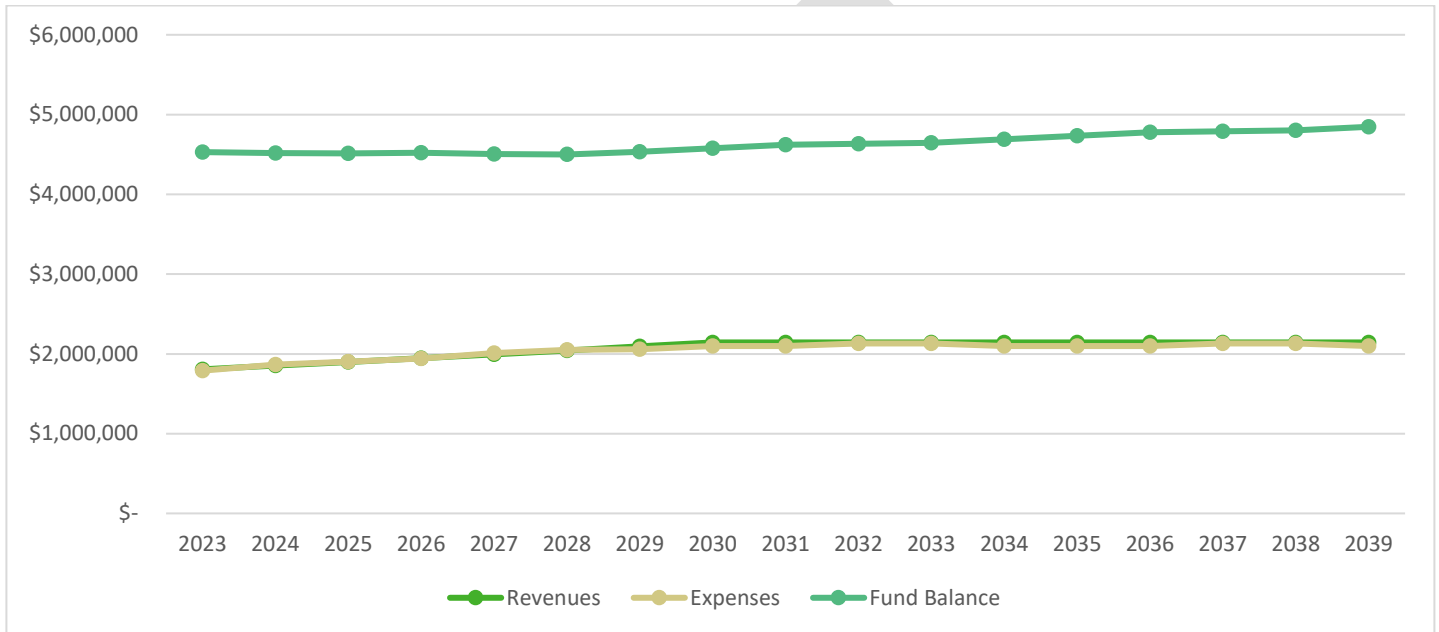
Figure H-9.5 Scenario 2



Scenario 3: Maintained Expenses with Varying Inflation

Under this scenario, the District has a varying inflationary factor applied. Based on historical inflation values and projections from Statista⁷, it is expected that the inflationary factor in the U.S. will return closer to historical values of 2-3% by 2024. To remain conservative, this scenario uses an inflation factor of 6% from 2023 – 2025 before dropping to 2% in 2026 through 2031 on expenses. Expenses and revenues remain flatlined after the 6th year (2032) of the planning period. In this scenario, the District’s fund balance fluctuates trending upward. The District will incur slightly less expenses than will be generated by revenue sources.

Figure H-9.6 Scenario 3



B. Conclusions

The above three scenarios explore various models of projecting the District’s fund balance based on inflationary factors. Economic changes are difficult to predict, and inflation has fluctuated heavily across the nation over the last few years. As such, the District took conservative approaches while exploring these preliminary budget projections. Foremost of these was a higher projected inflationary factor than is predicted nationally and omitting any additional revenue sources outside of the designation fee.

Both Scenario 1 and Scenario 3 result in the District having a balanced budget. These two scenarios assume the inflation factor will remain between 2-3% over the course of the planning period as it has historically. However, if inflation continues to be higher than historical values and does not decline as projected, Scenario 3 shows the District’s balance is unsustainable given a 6% increase and additional funding may be required.

⁷<https://www.statista.com/statistics/244983/projected-inflation-rate-in-the-united-states/#:~:text=The%20inflation%20rate%20in%20the,base%20period%20was%201982%2D84.>

Best practice is to maintain an adequate operating level over the 15-year planning period. This is typically operating with at least one full year's worth of expenses as an emergency buffer. For the District, this would be roughly \$1.9 million based on a five-year historical analysis. However, the District had elevated expenses from 2019 to 2022 due to the construction of its new collection center, so the emergency buffer is closer to \$1.5 million without these expenses.

The options described above are opportunities the District considered to maintain an adequate operating level. After discussion with the Policy Committee, **Budget Scenario 1** was the desired budget projection to be fine-tuned for accuracy and to move forward with projections. The District's finalized budget projection is presented in *Appendix O*.

10. Regional Analysis

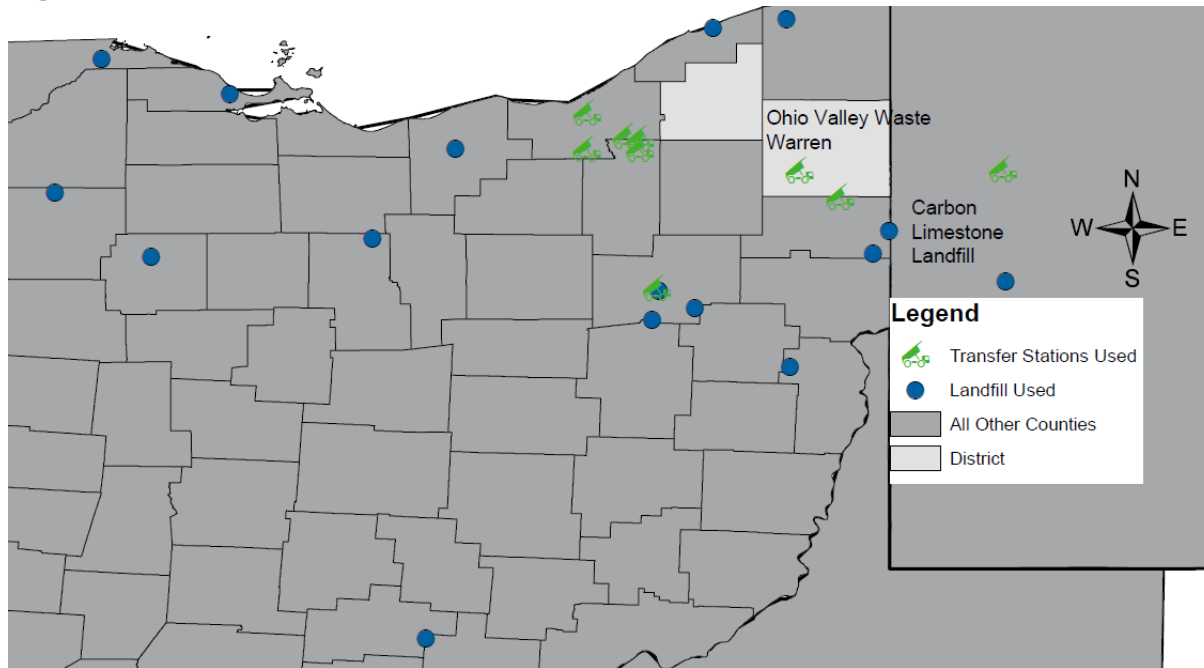
The purpose of the regional analysis is to consider regional opportunities for collaboration and partnerships and to also consider how the Policy Committee's decisions may impact other stakeholders in the region.

A. Waste Impacts

Waste material is not confined to one location or geographic area. Instead, waste can flow along multiple channels or streams based on what is the most economically beneficial. Factors such as economic pressures, the presence of facilities, the distance needed to travel, road infrastructure, and contracts between haulers and processors are all drivers of where solid waste flows.

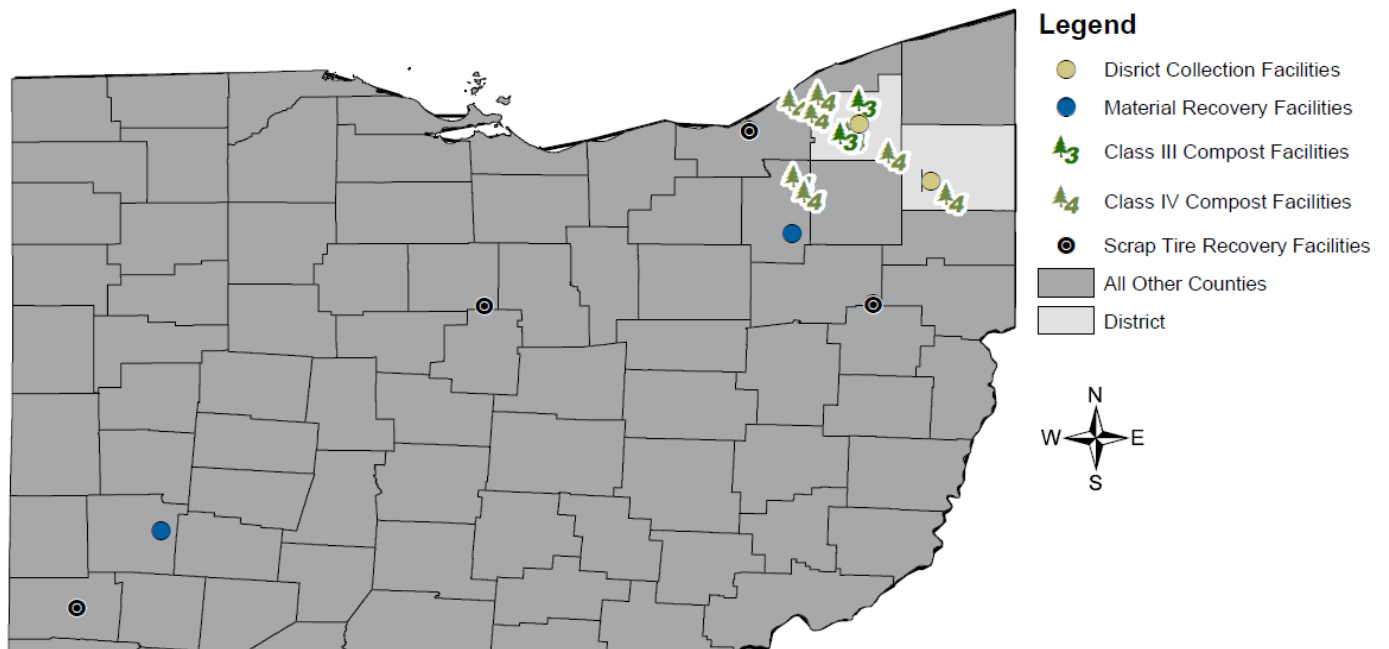
The District transfers 55% of its waste and direct hauls the remaining 45%. The District does not have an in-district landfill within its geographical boundaries. However, it does have a transfer station located in Trumbull County. The District relies heavily on this transfer station, Ohio Valley Waste Warren, sending 95% of all transferred waste to this location. This facility sends the waste it receives to the Carbon Limestone Landfill. This landfill also happens to be where most of the District's direct hauled waste is sent. In total, 61% of all the waste disposed of ends up at the Carbon Limestone Landfill. **Figure H-10.1** below maps the landfills and transfer stations used by the District in the Reference Year.

Figure H-10.1 Landfills and Transfer Stations



The District strives to divert as much waste as possible from going to landfills and transfer stations. The extensive programming described in previous sections of this appendix are the key channels that the District diverts waste through. Diverted waste is taken to compost facilities, collection centers, scrap tire processors, and material recovery facilities (MRF). **Figure H-10.2** details the facilities the District utilized in the reference year to divert material.

Figure H-10.2 Waste Diversion Facilities



The District would like to explore collaborating with other nearby solid waste management districts. Identified districts to explore collaborating with are Portage, Ashtabula, Cuyahoga, and Mahoning. Collaboration is a process where people or organizations come together to solve problems with a common goal. Through the process of sharing differing perspectives, experiences, and resources a district can expand opportunities and improve performance.

Collaboration enables decision-makers to realize several benefits, including mutual respect for agency/jurisdictional authority, unified efforts, and collective support with mutually beneficial financial outcomes. By joining forces and sharing resources, economies of scale occur.

Opportunities to explore for this Plan Update:

- Mahoning County collaboration on school recycling programs
- MRF collaboration on best practice education and outreach for acceptable materials in the region

11. Data Collection Analysis

This analysis evaluates the District's current data collection efforts and identifies ways to improve its data.

Waste is generated by three sectors: residential, commercial, and industrial. Waste sources reduced, recycled, composted, incinerated, and disposed of are measured to establish a baseline 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 District is to divert materials from landfills, therefore an accurate measurement of diversion from landfills is needed.

The District faces challenges with low participation rates, time commitment to track down data, lack of responses, and errors in response leading to misrepresentative data.

Residential Data Collection: The District collects data from service providers and Ohio EPA-published data. Service providers mainly operate drop-off and curbside recycling collections. As part of the contracts, the providers report volumes to the District. These values get reported in the hauler reports and may include commercial data. The District is unable to get specific tonnage per community for curbside services and site-specific tonnages for drop-off locations.

Opportunities:

- Improve Data Collection (New Program)
 - Work with haulers and communities to gather consistent, community-specific data for non-subscription and subscription curbside recycling programs as well as site-specific drop-off location tonnages.
 - Tons recovered per site/community
 - Households served

Commercial Data Collection: The District gathers data from commercial businesses and Ohio EPA annual published data. Businesses surveyed are emailed a cover letter, and survey. Survey recipients are given the option to submit their completed surveys via mail, email, or fax. Approximately two to three follow-up

requests are sent via e-mail to contacts. Follow-up phone calls are placed to entities if data has not been submitted after receiving the final follow-up request via e-mail. The quantity of follow-up phone calls made to each survey recipient varies on a case-by-case basis. Priority has been placed on obtaining responses from entities that have provided data in the past and to businesses known to generate significant quantities of recycling and waste. To avoid double counting the District strives to identify any materials that might be reported by more than one entity. In the past, the District used to mail out hard copies to commercial businesses but has not done this recently.

The District targets commercial businesses with NAICS classifications such as wholesale trade, retail trade, accommodation and food services, arts, entertainment, and recreation, etc. that may be recycling. In the reference year, the District received 16 responses from commercial entities.

An analysis of the source data reveals that over 50% of the District’s commercial data is derived from Ohio EPA reports such as the scrap tire, compost, and commercial retail reports. The District does have an estimated 29% of data coming from its commercial survey efforts. A majority of this is from two or three large generators, most businesses do not report significant amounts of recycling. There are estimated to be over 2,500 commercial businesses in Geauga and Trumbull Counties. The District receiving 16 survey responses reveals that only a small fraction of commercial businesses are surveyed and an even smaller number respond.

Table H-11.1 Residential and Commercial Recycling Data Sources

Program/Source of R/C Recycling Data	Percent of Data
Commercial Survey	29.31%
Data from Other Recycling Facilities	0.01%
Ohio EPA Commercial Retail Data	10.99%
Curbside Recycling Services	N/A
Drop-Off Recycling Program	N/A
OEPA Scrap Tire Data	4.57%
OEPA Compost Data	38.20%
Paper Shred Events	0.01%
Electronic Collection	0.18%
Appliance Collection	0.18%
HHW Collection	0.09%
Battery Collection	0.01%
Other Collection	0.01%
Hauler Reporting	16.45%

Note: Curbside and Drop-Off Data included in Hauler Reporting

Data collection is vital to measuring the waste reduction and recycling rate goals. While the District has met EPA's Goal #2 historically, it fell just short in 2022 to meet this goal. It is likely that many of the businesses in the District are recycling, but the data is not being captured. As such, the District believes that targeting additional commercial businesses will allow the District to achieve Goal #2 through the planning period.

Opportunities:

- Emphasize data from survey responses annually from commercial survey
- Build relationships with businesses & contacts
- Create an annual routine with local businesses
- Increased data availability outside of EPA reports
 - Build resiliency to change in the current system
- Re-establish the use of hard-copy surveys to help improve data collection

Industrial Data Collection: The District gathers data by surveying the industrial sector businesses. The same survey procedure described for the commercial sector is also used for the industrial sector.

With the removal of the industrial recycling goal in the 2020 State Plan, this sector is no longer a focus for the District. The commercial survey is prioritized.

12. Education and Outreach Analysis

In accordance with Goal 3 of the 2020 State Plan, each SWMD is required to provide four minimum education programs: website, resource guide, infrastructure inventory, and speaker/presenter. Goal 4 of the State Plan, the District is required to provide education, outreach, marketing, and technical assistance to identified target audiences.

A. Minimum Education Requirements - Evaluation

Website:

The District maintains a website at <https://startrecycling.com/>. The District website is continuously updated to better educate residents about all programs the District offers. In September 2022, the District unveiled a newly redesigned website, which now includes a directory of waste and where to dispose of it properly in our area. Additional dropdowns were created to be more in line with typical resident questions. The main page was edited to make contact with District personnel easier. The Director updates the website as necessary without assistance from the website provider, allowing for more efficient changes and additions to District activities. All special collection events are posted on the website, with links to flyers for more information. Community collections, changes in recycling schedules, and general educational articles are also posted regularly. The webpage provides a full inventory of the infrastructure, drop-off collection locations, District-owned collection centers, information about household hazardous waste, District contact information, and local events and opportunities.

In early 2022, the District subcontracted social media content for Facebook and Instagram to the website manager. They propose daily posts that are approved by District personnel, keeping the social media pages fresh and interactive. Under this direction, Facebook page visits increased by 429%, reach increased by 80%, and engagement increased by 25%. Instagram reach increased by 100% and profile visits increased

by 100%. The Instagram account is still relatively new, and the social media developer will be working on increasing followers in 2023.

Opportunities:

- The District has limited information about scrap tires and yard waste/organics diversion.
 - Add local compost facilities, yard waste collection communities, and any yard waste drop-off locations.
 - Add commercial businesses that will accept scrap tires.
 - Promoting community scrap tire events on the District website and social media.

Resource Guide:

The District's webpage includes multiple tabs with information regarding the resources available for waste recovery in Geauga and Trumbull Counties. These include drop-offs, alternative local recycling options, specialty recycling, and HHW management. The District does not include much information on yard waste, organics, or scrap tire recycling. This could be added during this plan update to ensure all recycling information throughout the District is readily accessible on the website.

Infrastructure Inventory

An infrastructure inventory can be found in the Plan, which is updated every five years, and specific infrastructure is identified on the website. Web content is updated frequently, often yearly through the publishing of the District's annual reports, events, and program changes. The District provides annual reports, previous and current solid waste plans, and Policy Committee meetings as well.

B. Goal 4 Outreach and Education – Evaluation

In accordance with Goal 4 of the State Plan, the District is required to provide education, outreach, marketing, and technical assistance to identified target audiences.

All types of behavior change initiatives, even mass-media-based campaigns, can successfully employ the tools of social marketing, which include goals/commitments, feedback, prompts, and one-on-one interactions. The District offers the following outreach and education strategies:

- Website
- Resource guide
- Residential education and outreach
- School education and outreach
- Commercial education and outreach
- Community and elected official education and outreach
- Social media usage

The District uses many forms of outreach and education to teach and inform residents how to properly manage and divert waste. These programs are crucial for measuring and ensuring recycling programs are effective.

Target Audience: Residents

This is the primary target audience for the District. As such, there are many programs and initiatives designed to target this sector. The District utilizes its website, social media, collection centers, presentations, and various outreach programs to provide residents with information on HHW, acceptable recycling materials, drop-off locations, etc.

In 2022, the District opened its second collection facility. This facility is in Geauga County so now both Counties that comprise the District have a collection center. While announcing the grand opening, extensive program advertisement was placed in Geauga County newspapers. During the last few months leading up to the grand opening, District staff attended community meetings to answer questions about the new facility and give details about the programs the District offers. The grand opening was covered by local media, which helped spread awareness of the materials we accept and our programs in general. Additional advertising for special collection events was placed in all major newspapers.

The District also has a resident-specific education and outreach program. In 2022, the District received a Recycle Ohio grant which included funds to be put towards resident education. Using these funds, the District developed a new mascot, Re-Co (Recycle Correctly) that is being used to promote new messaging. One of the issues with recycling in the District is that there are multiple MRFs accepting materials from residents and businesses, creating confusion about what can be accepted. Re-Co's message is that only five items (bottles, jugs, jars, cans, and paper/cardboard) are accepted by every company. Anything else needs to be checked with specific haulers. To help reach this target audience, the District got new recycle bin labels, created with Recycling Partnership designs, and new changeable signs at each drop-off site. An extensive social media push paired with TV commercials helped to educate residents about the importance of only recycling acceptable materials.

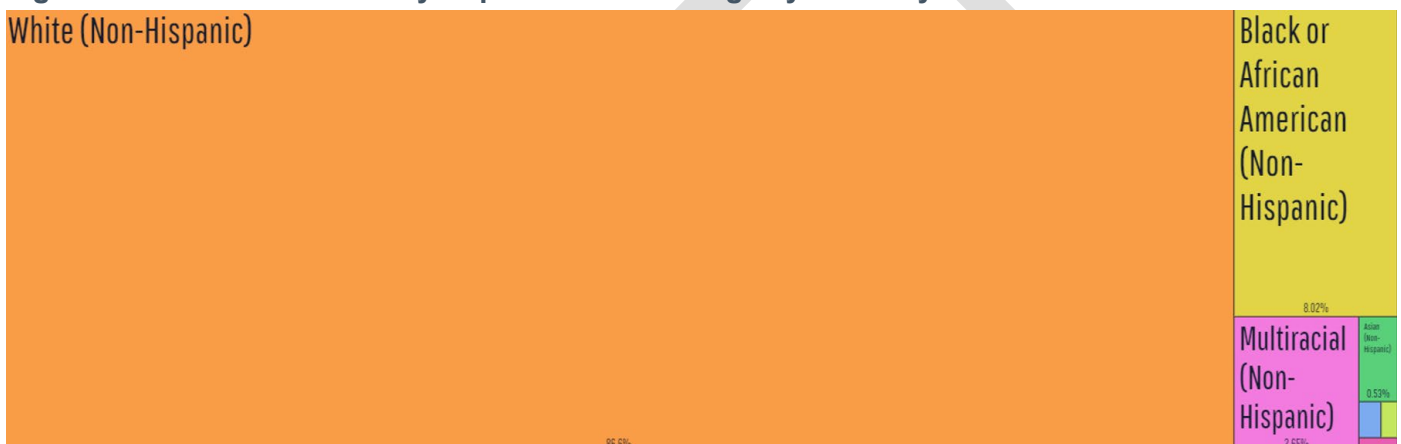
Education and outreach programs need to reach all the audience sectors. When it comes to recycling outreach, one type of approach does not reach all. Barriers can be cultural, low socioeconomic levels, and languages, to name a few. Keeping these considerations front-of-mind can go a long way to cleaner recyclable streams and more recovery. What can be seen from online research is that both counties are experiencing a population demographic change. Trumbull County has experienced more changes in its demographics from 2013 – 2020 than Geauga County. Geauga County has seen minor increases in its African American and Hispanic populations but remains 95% white in population. Trumbull County, however, has seen an increase in its multiracial population from roughly 1.5% to 2.65% in 2020, nearly doubling since 2013. Trumbull County is also majority white in population at 86% but has a significantly larger African American population, comprising 8% in Trumbull County as opposed to 1% in Geauga County. Figures **H-12.1** and **H-12.2** present the population by percentage of ethnicity. At the time of this report, 2021 and 2022 data were not available.

Figure H-12.1 Geauga County Population Percentage by Ethnicity 2020



Race and ethnicity data was not published for 2022 or 2021 so the 2020 data was used. Source: <https://datausa.io/profile/geo/geauga-county-oh>

Figure H-12.2 Trumbull County Population Percentage by Ethnicity 2020



Race and ethnicity data was not published for 2022 or 2021 so the 2020 data was used. Source: <https://datausa.io/profile/geo/trumbull-county-oh>

Are the District’s current education and outreach diverse and inclusive to languages and marginalized populations? Is the District prepared for further potential race and ethnicity shifts? One demographic not represented above is the Amish. Geauga County specifically has a high population of Amish, with roughly 10% of its population.

Opportunities:

- Explore if marginalized populations are aware of and/or receiving recycling opportunities.
- Household outreach to ethnic-centered community events, stores, etc.
- Determine barriers to recycling based on geographic location, socioeconomic status, ethnicity, etc.
- Connect with the Amish population to gauge their needs and if the District can assist in material recycling/diversion.

Target Audience: Commercial and Institutional:

The District primarily reaches this program through its commercial/institutional business outreach program. Elements of the District website also serve as a resource for these businesses, though there is no dedicated tab for information for commercial businesses. The District offers commercial waste audits, technical

assistance, and gives presentations. The District did not receive any commercial or institutional requests in 2022.

Opportunities:

- Feature and highlight green businesses in the District.
- Create dedicated web infrastructure for local businesses.
 - Education and outreach
 - Waste audit promotion
 - Ohio EPA materials marketplace
 - Recycling opportunities

Target Audience: Industrial Sector

The District's commercial sector programs are also available to this sector. The 2020 State Plan created a new goal for Districts to incorporate a strategic initiative for the industrial sector into solid waste management plans. However, this is not a priority area for outreach resources for the District to spend. Lacking this programming the District benchmarked other districts to see what they were doing to reach this audience. Many across the state advertise the Ohio Marketplace and offer technical assistance, waste sorts, and grant assistance.

Target Audience: Elected Officials:

Elected officials are reached through the District's community and elected official outreach program. A group email including all township trustees, city and village council members, mayors, fiscal officers, and other elected officials is used regularly to keep local officials updated on upcoming events, grant opportunities, etc. The District's Director attends Township Trustee Association meetings in both Trumbull and Geauga Counties, as well as at individual township trustee meetings. These speaking engagements allow the District to answer questions about proper recycling, as well as let officials know about the programs offered.

Target Audience: Schools

The District offers classroom presentations in partnership with Geauga and Trumbull’s respective Soil and Water Conservation Districts. The District’s goal is to help students form understandings and connections between the earth’s natural resources, the products purchased, and how they get disposed of. The District splits presentation materials into two age groups, kindergarten through third grade and fourth grade to high school seniors. Each county has its own unique programming.

In 2022, 24 presentations were given between Geauga and Trumbull Counties with approximately 1,200 attendees. The District is interested in exploring the economic feasibility of providing schools with recycling bins to collect paper and cardboard.

Opportunities

- Explore providing funds for school recycling
 - Meet with Mahoning County to learn more about the challenges and costs.
 - Explore contract options with haulers in the area.

Conclusion:

The District’s education is well-developed and reaches all required target audiences. Social media and the website add support to the District’s efforts and create additional forms of interactive communication. The District has actively been working to increase the social reach from its various outlets and has been successful with its social media, website, and presentations. There is room to add additional web infrastructure to the website regarding industrial and commercial businesses.

13. Processing Capacity Analysis

A material recovery facility (MRF) is a specialized facility that receives, separates, and prepares recyclable materials for marketing to end-user manufacturers. Materials collected through curbside programs, drop-off programs, and other District programs collecting recyclables are sent to MRFs.

Historically, the District has utilized Waste Management’s Akron MRF as the sole facility to process collected recyclables. In a typical year from 2018-2022, the District sent between 5,000 and 6,000 tons to this facility. In 2019, this facility reported less than 100 tons to Ohio EPA from the District. However, the Ohio EPA did not report the use of any other MRFs by the District that would have made up for the roughly 5,000 tons of processing. While the Akron MRF is where the majority of collected materials are sent some materials are sent to other MRFs in the state. The other MRFs handle roughly 100 tons from the District.



In 2022, Ohio EPA reported only five tons of waste originating from the District being processed at MRFs. Rumpke Recycling – Dayton was the sole MRF used in the reference year according to the Ohio EPA MRF Annual Report⁸. It is unclear why the District's collected material sent to MRFs was reported as so low this year. The District consulted Ohio EPA on this occurrence but no clear reason was able to be discerned. The District is not able to get an exact number of materials collected from drop-off and curbside collection by its haulers but estimates it to be roughly 4,000 tons. Because the District has general numbers for the collection of recyclable materials that are on par with historic reports, it believes an error occurred in reporting or the waste was sent to a facility where the origin of waste was mischaracterized, leading it to be attributed elsewhere. In 2023, Waste Management opened a \$30 million MRF in Oakwood Village near Cleveland. This is where all materials are now being sent.

The District does have adequate regional capacity to process the collected recyclable materials from curbside, drop-off, and other waste diversion District activities. The District will monitor and work with Ohio EPA moving forward to discover why its collected materials are not being reported and/or attributed to Geauga and Trumbull Counties.

DRAFT

⁸ https://epa.ohio.gov/static/Portals/34/document/general/MRF%20Annual%20Report_Statewide.pdf



APPENDIX I

CONCLUSIONS, PRIORITIES, AND PROGRAM DESCRIPTIONS

Appendix I. Actions, Priorities, and Program Descriptions

To fulfill the directives in Ohio Revised Code Section 3734.50, the District's Solid Waste Management Plan must demonstrate strategies and programs to address the 10 required goals listed below. This 2024 Plan is prepared to comply with the State of Ohio 2020 State Plan and ensures the District makes progress toward achieving the goals below:

Goal #1

- The SWMD shall ensure that there is adequate infrastructure to give residents and commercial businesses opportunities to recycle solid waste.

Goal #2

- The SWMD shall reduce and recycle at least 25 percent of the solid waste generated by the residential/commercial sector.

Goal #3

- The SWMD shall provide the following required programs: a web site; a comprehensive resource guide; an inventory of available infrastructure; and a speaker or presenter.

Goal #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.

Goal #5

- The SWMD shall incorporate a strategic initiative for the industrial sector into its solid waste management plan.

Goal #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.

Goal #7

- The SWMD shall explore how to incorporate economic incentives into source reduction and recycling programs.

Goal #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.

Goal #9

- The SWMD has the option of providing programs to develop markets for recyclable materials and the use of recycled-content materials.

Goal #10

- The SWMD shall report annually to Ohio EPA regarding implementation of the SWMD's solid waste management plan.

A. Actions and Priorities

1. Actions

Appendix H evaluates the District's performance of programs and strategies in offering and maintaining services. Evaluation of these programs involves determining whether the performance observed was expected or desired. If these strategies did not perform as anticipated, suggestions were presented to improve and strengthen programs and performance and increase effectiveness. As part of this analysis, a list of opportunities was created, identifying possibilities for the District's future programming.

The District estimates that 48% of the items generated could be recycled at the curb or drop-off locations. These materials consist of cardboard, paper, plastics, metal, and glass. There is a great potential for collecting and processing more recyclables. The effort to increase the collection of materials requires changes to programs, such as expanded curbside collection, increased education/awareness, and promotion of District programs.

A working strategy session with the Policy Committee discussed existing program improvements and future programming that could be pursued. What ensued was a suggested list of programming. The full analysis and list can be found in *Appendix I*. In this working session, the Policy Committee identified three major areas, among other improvements, to pursue this planning period. These are additional support for District staff in the form of an annual budget for contracted assistance, exploring food waste diversion opportunities, and working with communities to establish new curbside recycling services as well as receiving reliable data from existing services. Suggested areas of improvement and new programs do not bind the District to commit to every action listed.

2. Priorities

As part of the planning process, the Policy Committee gave a priority status for each program and further discussed goals, changes, and ways to improve or continue existing programs.

The matrix below includes the list of existing programs, potential changes, and potential new programs. The priority status rating is defined as:

- Priority 1: Short term, 1 – 3 years.
- Priority 2: Medium term, 3 – 5 years.
- Priority 3: Long-term, 5+ years.

Program Description	Potential Changes	Priority			
		No Changes	1	2	3
Curbside Feasibility Study	Contract, consortium, franchise evaluation		X		
Drop-off Program	None	X			
Other Drop-Offs	Emphasize education/outreach at independent drop-off locations through media ads, presentations, improved signage, and training sessions.			X	

Program Description	Potential Changes	Priority			
		No Changes	1	2	3
	Evaluate if additional independent drop-offs are needed to better serve the District.			X	
	Emphasize the importance of data collection from these sites.	X			
Commercial Recycling & Source Reduction	Roll out Green Achievement Certification for businesses.			X	
	Reach out to local businesses twice a year via a newsletter or email to establish relationships and make them aware of the District's programs.			X	
	Identify the largest generating businesses, and target these first with District funded recycling containers.		X		
	Research and apply for EPA grants annually.		X		
	Research how small CESQG businesses can safely handle HHW.		X		
Waste Audits	Increase awareness of program offerings through ads, social media, and District website promotion.		X		
Event Recycling	None	X			
Document Destruction Day	None	X			
Monitoring/Tracking Yard Waste	None	X			
Yard Waste Management Technical Assistance	None	X			
Organics Management	Explore partnering with local businesses/organizations to divert organic waste such as food banks.			X	
	Explore providing technical assistance on food scrap management for businesses.			X	
	Provide grant funding to develop down-stream solutions to organics management.			X	
Electronics Collection	None	X			
Appliance Collection	None	X			

Program Description	Potential Changes	Priority			
		No Changes	1	2	3
HHW Collection	None	X			
Scrap Tire Grants	None	X			
Market Development Grants	Work with local vendors on a joint grant application for funding the development of a small MRF.			X	
Drop-Off Litter	Change name to Drop-Off Improvement Grants (DIG)		X		
Recycling Incentive Grants	None	X			
Go Green Grants	None	X			
Other Grants	None	X			
District Collection Facilities	None	X			
Great American Clean-Up - Recycle Ohio 2021-2022	None	X			
Health Department Enforcement	None	X			
Environmental Crimes Task Force	None	X			
Data Collection	Conduct annual surveys for ADR with an emphasis on attaining new responses from commercial businesses.		X		
	Work with haulers/communities to get individual community tonnage data for curbside programs in the District.		X		
	Work with individual communities to gather yard waste tonnages that aren't already reported to Ohio EPA.		X		
Inventory List	Develop an inventory list of processors and diversion locations within the District including recycling centers, scrap yards, food banks, etc. for residents to reference. Post on the website and social media.			X	
District Website	None	X			
R3 Directory	None	X			
Education Program	None	X			
Awareness Program	Conduct a study to gain an understanding of underserved areas and population bases within the District.			X	
	Develop education/awareness material targeted at underserved populations. Ensure all populations are being reached and are given adequate opportunities to recycle.			X	

Program Description	Potential Changes	Priority			
		No Changes	1	2	3
Resident Outreach	Continue to engage District residents, and work within the awareness program goals to prioritize any underserved resident populations such as with postcard and social media impacts.		X		
School Outreach	Add schools to drop-off programs and extend outreach to explain.		X		
Institutions and Commercial Business Outreach	Attempt to reach commercial property management and multi-family housing complexes to encourage and assist in developing recycling services.				X
	Focus on developing relationships with local businesses. Many may be unaware of the services available for the District. Encourage participation in annual commercial surveys.		X		
Community and Elected Official Outreach	Work with elected officials from at least 1 community a year to establish curbside recycling. Continue to attend township meetings and establish relationships.		X		
Social Media	None	X			
New Program Opportunities					
School Recycling Program	Add a section to drop-off RFP that would bid out collection bins at each school in the District.		X		
Food Waste Management Program	Food Waste Drop-off Pilot		X		
	Create web infrastructure promoting local food waste diversion methods.			X	
Keep America Beautiful Affiliation	The district is applying to KAB in the summer of 2024.		X		
Full-Time Additional Staff Member	Hire a new FT staff member to assist with District programs.	Not Pursuing			
Part-Time Additional Staff Member	Hire a new PT staff member to assist with District programs.	Not Pursuing			
Summer Intern	Bring on an intern(s) in the summer to help the District with grant applications, research projects, database building, outreach, etc.			X	
Contracted Assistance	Annual budgeted contracted assistance based on the needs of the District in that year up to \$50,000/year.		X		

B. Programs

Curbside Recycling Services

Non-Subscription Curbside Recycling - Geauga

ID	Name	Start Date	End Date	Goal(s)
NSC1	Chardon City	Ongoing	Ongoing	1 and 2
NSC2	Burton Village	Ongoing	Ongoing	1 and 2
NSC3	Middlefield Village	Ongoing	Ongoing	1 and 2
NSC4	Cortland City	Ongoing	Ongoing	1 and 2
NSC5	Liberty Township	Ongoing	Ongoing	1 and 2
NSC6	Lordstown Village	Ongoing	Ongoing	1 and 2
NSC7	Newton Falls Village	Ongoing	Ongoing	1 and 2
NSC8	Weathersfield Township	Ongoing	Ongoing	1 and 2
NSC9	Hubbard City	Ongoing	Ongoing	1 and 2

In 2019, the District had nine political jurisdictions with non-subscription curbside recycling. These programs are operated by either local political jurisdictions or one of the private haulers listed in *Appendix B*. One of the primary focuses in the District’s 2019 plan update was to increase curbside recycling. Since this plan, the District has added two new curbside programs. One in Chardon and one in Burton.

In 2022, all curbside materials were collected single stream (commingled) with either a bin or cart-based system. The standard recyclables collected depend on the hauler. Rumpke collects paper, cardboard, plastic bottles and jugs, cartons, metal cans, and glass. Republic collects paper, cardboard, plastics #1 through #7, metal cans, and glass. The District expects these materials to be collected throughout the remainder of the planning period but is dependent on what materials the haulers accept.

Target for Next 5 Years: The District expects all existing political jurisdictions to continue their non-subscription service. Over the next planning period, the District hopes to increase the tonnage of recyclables recovered. Three communities have a sizeable population base and would likely benefit from having curbside recycling services. These are Niles, Warren, and Girard. With varying levels of interest from city officials, the District will work with the cities to explore establishing curbside recycling services in these areas.

Currently, the District does not receive data on a per-community level for tonnages collected at the curb. Any data stemming from curbside recycling is included in District-mandated hauler reporting. This report is unable to separate tonnages on an individual community basis. The District will work with local haulers and communities to retrieve accurate tonnage information for each community in order to better understand where improvements can be made in the existing system of curbside recycling.

Subscription Curbside Recycling

ID	Name	Start Date	End Date	Goal(s)
SC1	South Russell Village	Ongoing	Ongoing	1 and 2
SC2	Auburn Township	Ongoing	Ongoing	1 and 2
SC3	Bainbridge Township	Ongoing	Ongoing	1 and 2
SC4	Aquilla Village	Ongoing	Ongoing	1 and 2
SC5	Burton Township	Ongoing	Ongoing	1 and 2
SC6	Chardon Township	Ongoing	Ongoing	1 and 2
SC7	Chester Township	Ongoing	Ongoing	1 and 2
SC8	Claridon Township	Ongoing	Ongoing	1 and 2
SC9	Hambden Township	Ongoing	Ongoing	1 and 2
SC10	Huntsburg Township	Ongoing	Ongoing	1 and 2
SC11	Middlefield Township	Ongoing	Ongoing	1 and 2
SC12	Munson Township	Ongoing	Ongoing	1 and 2
SC13	Newbury Township	Ongoing	Ongoing	1 and 2
SC14	Russell Township	Ongoing	Ongoing	1 and 2
SC15	Troy Township	Ongoing	Ongoing	1 and 2
SC16	Montville Township	Ongoing	Ongoing	1 and 2
SC17	Parkman Township	Ongoing	Ongoing	1 and 2
SC18	Thompson Township	Ongoing	Ongoing	1 and 2
SC19	Howland Township	Ongoing	Ongoing	1 and 2
SC20	Brookfield Township	Ongoing	Ongoing	1 and 2
SC21	Newton Township	Ongoing	Ongoing	1 and 2
SC22	Bazetta Township	Ongoing	Ongoing	1 and 2
SC23	Bloomfield Township	Ongoing	Ongoing	1 and 2
SC24	Braceville Township	Ongoing	Ongoing	1 and 2
SC25	Bristol Township	Ongoing	Ongoing	1 and 2
SC26	Champion Township	Ongoing	Ongoing	1 and 2
SC27	Farmington Township	Ongoing	Ongoing	1 and 2

ID	Name	Start Date	End Date	Goal(s)
SC28	Fowler Township	Ongoing	Ongoing	1 and 2
SC29	Greene Township	Ongoing	Ongoing	1 and 2
SC30	Gustavus Township	Ongoing	Ongoing	1 and 2
SC31	Hartford Township	Ongoing	Ongoing	1 and 2
SC32	Hubbard Township	Ongoing	Ongoing	1 and 2
SC33	Johnston Township	Ongoing	Ongoing	1 and 2
SC34	Kinsman Township	Ongoing	Ongoing	1 and 2
SC35	Mecca Township	Ongoing	Ongoing	1 and 2
SC36	Orangeville Village	Ongoing	Ongoing	1 and 2
SC37	Southington Township	Ongoing	Ongoing	1 and 2
SC38	Vernon Township	Ongoing	Ongoing	1 and 2
SC39	Vienna Township	Ongoing	Ongoing	1 and 2
SC40	Yankee Lake Village	Ongoing	Ongoing	1 and 2

In 2022, 40 political jurisdictions had a subscription curbside recycling program available for residents. Residents who wish to participate must opt into the service and pay for the program. The services are provided by private haulers operating in the area. In 2022, all curbside materials were collected single stream (commingled) with either a bin or cart-based system. The standard recyclables collected depend on the hauler. Rumpke collects paper, cardboard, plastic bottles and jugs, cartons, metal cans, and glass. Republic collects paper, cardboard, plastics #1 through #7, metal cans, and glass. The District expects these materials to be collected throughout the remainder of the planning period. The markets for recyclable materials will guide haulers’ decisions on the types of materials collected.

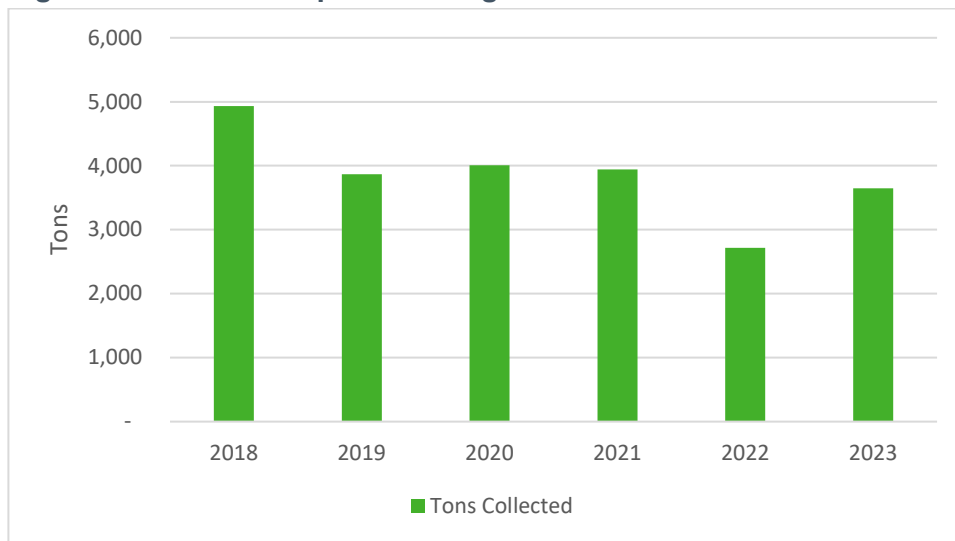
Target for Next 5 Years: The District expects subscription curbside programs will continue. Performance metrics are lacking. Similar to the District’s non-subscription curbside services, it is likely that a portion of the material collected is reported in the hauler reports. However, the District is interested in understanding the usage and/or tonnage collected from subscription communities for planning purposes in the future.

Drop-off Recycling Locations

Full-Time, Urban Drop-offs

ID	Name	Start Date	End Date	Goal(s)
FTU1	Newbury Township	Ongoing	Ongoing	1 and 2
FTU2	Bainbridge Township	Ongoing	Ongoing	1 and 2
FTU3	Chester Township	Ongoing	Ongoing	1 and 2
FTU4	Russell Township	Ongoing	Ongoing	1 and 2
FTU5	Notre Dame - Cathedral Latin School (Munson Township)	Ongoing	Ongoing	1 and 2
FTU6	Chardon City	Ongoing	Ongoing	1 and 2
FTU7	Brookfield Township	Ongoing	Ongoing	1 and 2
FTU8	Girard City	Ongoing	Ongoing	1 and 2
FTU9	Hubbard City	Ongoing	Ongoing	1 and 2
FTU10	Hubbard Township	Ongoing	Ongoing	1 and 2
FTU11	Niles City	Ongoing	Ongoing	1 and 2
FTU12	Trumbull County Career and Technical Center (Champion Township)	Ongoing	Ongoing	1 and 2
FTU13	Trumbull County Administration Building (Warren)	Ongoing	Ongoing	1 and 2
FTU14	Warren, Summit Academy	Ongoing	Ongoing	1 and 2
FTU15	SWMD Administrative Building (Warren)	Ongoing	Ongoing	1 and 2
FTU16	Liberty Township Schools	Ongoing	Ongoing	1 and 2
FTU17	Shepherd of the Valley (Howland Township)	Ongoing	Ongoing	1 and 2
FTU18	Warren Harding High School	Ongoing	Ongoing	1 and 2
FTU19	Warren Township Sports Complex	Ongoing	Ongoing	1 and 2
FTU20	Howland Township Fire Station	Ongoing	Ongoing	1 and 2
FTU21	Howland Recycling Center	Ongoing	Ongoing	1 and 2

Figure I-1 Historic Drop-Off Tonnages Collected



The District has 21 full-time urban drop-offs available 24/7. Containers are eight cubic yards. The number of containers and service frequency depend on the location. In 2022, 2,719 tons of material was collected from all drop-offs. This was a decrease of roughly 30% compared to the previous year. The District is unsure what caused this decline. In 2023, drop-off totals returned to historical numbers, suggesting 2022 may be an outlier year not representative of the normal collection tonnages. The District directly contracts with a private hauler to provide and service the drop-off locations and pays for this service.

The standard recyclables collected depend on the hauler who services the drop-offs. Generally, paper, cardboard, plastic bottles and jugs, cartons, metal cans, and glass are accepted at drop-offs. Glass became accepted in 2020. The District expects these materials to be collected throughout the remainder of the planning period, yet markets guide the materials collected. Drop-off containers will continue to be available through the planning period to serve those population areas without curbside recycling. Drop-off site locations are subject to change at any time for unforeseen reasons or to maintain performance and reasonable costs.

As of the time of this report, Ohio Valley Waste is the contracted service provider. The District’s contract expires and will go out for bid in March 2024. The District expects to select a service provider in the summer of 2024.

Full-Time, Rural Drop-offs

ID	Name	Start Date	End Date	Goal(s)
FTR1	Burton Township	Ongoing	2022	1 and 2
FTR2	Chardon Township	Ongoing	Ongoing	1 and 2
FTR3	Claridon Township	Ongoing	2022	1 and 2
FTR4	Huntsburg Township	Ongoing	Ongoing	1 and 2
FTR5	Parkman Township	Ongoing	Ongoing	1 and 2

ID	Name	Start Date	End Date	Goal(s)
FTR6	Thompson Township	Ongoing	Ongoing	1 and 2
FTR7	Troy Township	Ongoing	Ongoing	1 and 2
FTR8	Geauga Collection Facility (Claridon Township)	Ongoing	Ongoing	1 and 2
FTR9	Bloomfield Township	Ongoing	Ongoing	1 and 2
FTR10	Braceville Township	Ongoing	Ongoing	1 and 2
FTR11	Bristol Township	Ongoing	Ongoing	1 and 2
FTR12	Farmington Township	Ongoing	Ongoing	1 and 2
FTR13	Gustavus Township	Ongoing	Ongoing	1 and 2
FTR14	Hartford Township	Ongoing	Ongoing	1 and 2
FTR15	Johnston Township	Ongoing	Ongoing	1 and 2
FTR16	McDonald Village	Ongoing	Ongoing	1 and 2
FTR17	Southington Township Hall	Ongoing	Ongoing	1 and 2
FTR18	Vienna Township	Ongoing	Ongoing	1 and 2
FTR19	Fowler Township	Ongoing	Ongoing	1 and 2
FTR20	Newton Township	Ongoing	Ongoing	1 and 2
FTR21	Kinsman Township	Ongoing	Ongoing	1 and 2
FTR22	Mecca Township	Ongoing	Ongoing	1 and 2

The District has 22 full-time rural drop-offs open 12 hours every day. The District directly contracts with a private hauler to provide and service the drop-off locations and pays for this service. The standard recyclables collected depend on the hauler who services the drop-offs. Generally, paper, cardboard, plastic bottles and jugs, cartons, metal cans, and glass are accepted at drop-offs. Glass became accepted in 2020. The District expects these materials to be collected throughout the remainder of the planning period. The markets for recyclable materials will guide haulers' decisions on the types of materials collected.

Drop-off containers will continue to be available through the planning period to serve those population areas without curbside recycling. Drop-off site locations are subject to change at any time for unforeseen reasons or to maintain performance and reasonable costs.

As of the time of this report, Ohio Valley Waste is the contracted service provider. The District's contract expired in 2024 and as of July 1, 2024, Kimble is the District's new service provider.

Name	Start Date	End Date	Goal
School Recycling Program	2024	N/A	1 and 2

The District was interested in contracting services for school-specific recycling bins to interested schools. The District added a section to the drop-off request for proposals to be bid on by haulers in 2024. This section included details on bidding out collection bins at schools in the District. The District’s new contract with Kimble services 30 participating schools with a 4 cubic-yard paper and cardboard recycling container.

Name	Start Date	End Date	Goal
Other Drop-offs	Ongoing	Ongoing	3 and 4

Some private operations of drop-off for specific items are available throughout the District. These include special drop boxes for paper, clothing, plastic film bags, batteries, scrap metal, etc. These drop-offs operate independently of District programs but are a valuable resource to help divert materials from the landfill. The District will continue to survey these businesses providing the service for data.

Target for Next Five Years: The District will continue to emphasize the importance of data collection for these sites. The District will also promote the availability of these sites to residents and evaluate if additional drop-offs are needed.

Other Residential Recycling Programs

Name	Start Date	End Date	Goal
Curbside Feasibility Study	2014	Ongoing	3 and 4

The 2013 Plan planned for the District to conduct a feasibility study of subsidizing a curbside recycling program within one of the larger incorporated areas. Each year the District reaches out via phone and in-person meetings (with City Council members and Service Director staff) to cities without curbside services to discuss curbside recycling and assistance the District could provide.

In 2019, the District had discussions with the City of Niles and McDonald Village to institute curbside services and conducted interest surveys the following year. In 2020, the District began working with Ohio Valley Waste to promote its curbside recycling expansion to political jurisdictions in the District.

The District continues to promote Ohio Valley Waste curbside recycling expansion. At workshops and meetings, the District encouraged discussion at the township/city level for communities to contract trash and curbside recycling services for residents in their community. Multiple communities have asked for more information and help to discuss options at their administrative meetings. Due to the high cost of fuel and materials, and scarcity of commercial drivers, the District is waiting to discuss starting a curbside recycling program with Warren until the economic climate is more favorable.

The District applied for a SWIFR grant to start a curbside recycling initiative, paying for additional staff, legal advice, promotional materials, and other costs associated with starting an educational initiative or townships

to learn to create waste districts and contract waste services. Grant funding was announced in fall 2023 but the District did not receive any funds.

Target for Next Five Years: The District will explore conducting a formal feasibility study. If a study is conducted, the District will evaluate contract feasibility, facilitating the formation of a consortium among communities, franchise waste collection, and more.

Name	Start Date	End Date	Goal
Drop-Off Litter (Change name to Drop-Off Improvement Grants)	2019	Ongoing	3 and 4

In an effort to reduce and deter contamination at drop-off sites, the District created this program in 2019 to provide assistance to communities and locations that host drop-off recycling sites. In 2020, the District contracted with a company to remove illegal dumping from drop-off sites to lessen responsibility/cost to host communities. The District works with communities to support drop-off locations and offers grants.

In 2020, the District awarded 11 grants to communities to purchase cameras and upgrade lighting, signage, and/or fencing to reduce illegal dumping and contamination issues. The District has also started working with the Braceville PD and the Newton Falls Prosecutor's Office to prosecute illegal dumping offenders. Four cases were successfully prosecuted, with misdemeanor charges and fines ranging from \$100-\$500 plus court costs. The District works with the Trumbull County Sheriff's Office and police departments in Geauga County to duplicate these successes at other recycling sites.

In 2021, the District awarded nine more grants to communities to purchase cameras and upgrade lighting, signage, and/or fencing to reduce illegal dumping and contamination issues. Funding for these grants is included in budgets for 2023 and beyond. The District also continued to have success with local law enforcement to combat illegal dumping. Depending on the severity of the offense and the desires of the community, offenders have been required to remove items illegally dumped or prosecuted through local courts. Multiple drop-off sites have reported less illegal dumping and better compliance.

The District is continuing to award grants to communities to purchase cameras, upgrade lighting, signage, and/or fencing to reduce illegal dumping and contamination issues. Over half of the drop-off sites now have camera surveillance and local law enforcement support to catch illegal acts. The District continues to work with remaining communities to have cameras installed, as well as meeting with local law enforcement to coordinate cases when they occur. The District budgets roughly \$100,000 in available spending for DIG applications each year. In recent years, the District has seen a decline in the number of applications for improvements. Still, many communities continue to apply for funding.

Target for Next Five Years: Continue throughout the planning period.

Commercial/Institutional Sector Reduction and Recycling Programs

Name	Start Date	End Date	Goal
Commercial Recycling & Source Reduction	2019	Ongoing	3 and 4

The District offers recycling box containers to schools, government offices, or churches. The cardboard box-style containers are available free of charge. To receive boxes, entities are asked to complete an application which is available online. As part of this program, the District promotes and encourages recycling in the commercial sector through outreach, information, and technical assistance.

The previous plan update determined this program was not achieving the desired results, thus the program was re-developed to focus on building relationships with the commercial/institutional sector. Focus is now placed on the services available to this sector which includes: contract and technical assistance (education, in-person meetings, presentations, etc.), waste audits (see separate program), and third-party resources. Technical assistance will be provided to businesses, industries, and institutions. The District does still offer recycling boxes. The District will focus its efforts on providing technical assistance to set up recycling services in commercial and institutional businesses.

A business incentive/certification program was developed in 2019 (Green Achievement Certification), which includes technical assistance and referrals to appropriate vendors. The District faced challenges in rolling this program out. Originally planned to be released in 2019, staffing issues delayed this expected date to 2020. Unfortunately, as a result of COVID-19, this program was again delayed in 2020 as the District waited for the normalization of services which progressed through 2021. Finally, in 2022 this program was unable to be implemented. With the previous delays, program interest and movement stalled and there were no business recycling resources.

Target for Next Five Years: The commercial sector is a priority focus for the District. Twice per year, the District will reach out to local businesses via a newsletter to inform and raise awareness of the District’s programs and funding opportunities once a newsletter is developed. Further, the District will identify the largest generating businesses and create a living document to maintain information. These businesses will be the first ones targeted in the District’s annual surveys as well as the first ones to receive District-funded recycling containers if interested. Notification of the newsletter will be included on the District’s website.

Name	Start Date	End Date	Goal
Waste Audits	Ongoing	Ongoing	3 and 4

Technical assistance is provided to businesses, industries, institutions, and non-profits free of cost. Technical assistance includes waste assessments, education, in-person meetings, presentations, etc. Upon request, District staff evaluates current waste management strategies and makes recommendations for improvements. Data collection surveys are distributed annually to solicit responses from entities interested in waste assessments. Two waste audits were conducted over the last five years, one in 2019 and one in 2020. This program complements the Commercial Recycling & Source Reduction program.

The District does not receive many requests for waste audits from the industrial or commercial sector. The District believes that this service is not widely known by local businesses and that is one of the reasons for the limited requests. Furthermore, many businesses are not responsive to District inquiries.

Target for Next Five Years: Increase local awareness of this free program. Spread awareness on social media and add information specifically for businesses on the District website. Attempt to conduct one waste audit annually.

Name	Start Date	End Date	Goal
Event Recycling	Ongoing	Ongoing	3 and 4

The District loans collection containers for special events for recycling beverage bottles and cans. The ClearStream containers are available for free to borrow. Any organization has the opportunity to take advantage of this program. The District typically receives multiple requests annually for these containers.

In 2019, containers were borrowed by five organizations for community and public special events. Following this year, COVID-19 impacted the ability to put on events, and therefore no requests were made for these containers in 2020 or 2021. This program was available in 2022, though no requests were made.

Target for Next Five Years: This program will continue through the planning period. The District is interested in exploring Zero Waste Events. These events are designed to minimize the amount of waste going to landfills by recycling and composting eligible materials generated from an event. The event can be considered Zero Waste if at least 90% of waste generated is diverted from the landfill. The District will market this opportunity to communities and businesses on the District website.

Industrial Sector Reduction and Recycling Programs

Name	Start Date	End Date	Goal
Waste Audits	Ongoing	Ongoing	5

This is the same program as included under the heading “Commercial/Institutional Sector Reduction and Recycling Programs”.

Target for Next Five Years: Continue throughout the planning period.

Name	Start Date	End Date	Goal
Materials Marketplace (new program)	Ongoing	Ongoing	5

The District will promote the materials marketplace on its website as well as in education and awareness efforts.

Name	Start Date	End Date	Goal
Go Green Grants (new program)	Ongoing	Ongoing	5

The District will add industrial businesses to the list of eligible recipients for grant money through this program.

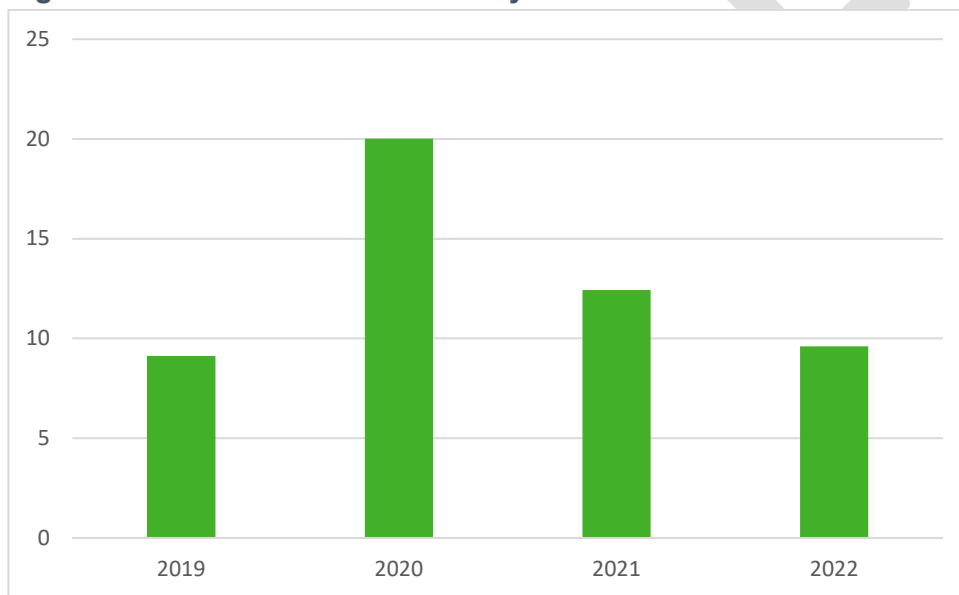
Restricted/Difficult to Manage Wastes

Name	Start Date	End Date	Goal
Document Destruction Day	2013	Ongoing	2

The District began offering one-day document destruction events in each county in 2013. Shred events are contracted to a third party but managed by the District. The District typically holds these events in late spring or early summer and has seen continued interest and participation during these days. In 2020, the District was inundated with residents trying to take advantage of the service. The District was forced to turn away some residents at the Trumbull collection, so a third collection day in the fall was held.

In 2021 and 2022, the District held two document destruction events. One at the Geauga collection facility and one at the Trumbull collection facility, both in late April. In 2022, a total of 548 cars came through between the two events, yielding 9.60 tons of paper.

Figure I-2 Document Destruction Day



The District collects about 12 tons of paper for the annual document destruction day each year. In 2020, the District hosted three events as described above. This year a total of 20 tons were collected. It is likely the COVID-19 pandemic and many people staying home more resulted in the peak seen.

Target for Next Five Years: Continue throughout the planning period.

Name	Start Date	End Date	Goal
Monitoring / Tracking Yard Waste	Ongoing	Ongoing	2 and 5

The District monitored yard waste being delivered to compost facilities, open dumped, or landfilled by using Ohio EPA compost facility reports. Ohio EPA requires these facilities to submit annual reports. Monitoring

could include surveying compost facilities, waste haulers, landfills, residents, and landscapers. This strategy can be used to help the District locate illegally disposed of or landfilled yard waste by waste haulers and generators. This information is part of the Health Department enforcement program.

Target for Next Five Years: Continue throughout planning period.

Name	Start Date	End Date	Goal
Yard Waste Management Technical Assistance	2019	Ongoing	2 and 5

Yard waste management is decentralized. The District does not fund or operate yard waste management collection or facilities. Haulers in the District do not offer curbside separate yard waste collection hauling. The District will provide technical assistance to communities/political jurisdictions that are interested in the development or expansion of current yard waste management programs. Technical assistance includes identifying existing management resources that are available throughout the District and also in the development of programs that will address the needs of a community in managing yard waste through more efficient and cost-saving programs. From 2018 to 2022 no technical assistance was provided and the District provided no outreach for this service.

Target for Next Five Years: Continue throughout the planning period.

Name	Start Date	End Date	Goal
Organics Management	Ongoing	Ongoing	2 and 5

Diverting food waste is a challenge in the District. With limited infrastructure (hauling and management facilities) in Northeast Ohio, the 2009 Plan developed a diversion strategy that included holding an information seminar on digesting food waste in schools followed by grants to incentivize schools to implement these strategies. Following the seminar, no grants were awarded because of a lack of interest from schools. The District is unsure why the seminar and grant program did not provide incentives for schools to incorporate digesting into their management models. Perceived barriers include:

- inadequate staffing to implement alternative handling procedures
- landfill disposal costs being more affordable when compared to organic management costs
- changing the way they do business.

The District continues to offer educational instruction on composting, as well as social media coverage of on-site composting at the District Office. Six educational programs were conducted on composting in 2022. The District has actively strengthened its relationship with Geauga and Trumbull Soil & Water Conservation District (SWCD), subcontracting all of its educational programs to these partners. The District continues to offer compost bins for sale at a discounted rate.

Costs to develop large-scale downstream infrastructure to process food waste composting in-district is a responsibility the District is not able to address at this time. The District supports decentralized upstream and downstream systems. The District will emphasize upstream reduction of food waste through targeted education and outreach. Downstream solutions will focus on rescue and on-site decentralized diversion

education and outreach. Funding for this program can be used to provide one-time grants to commercial businesses, institutions, retailers, and restaurants to implement an on-site diversion strategy (upstream or downstream).

Target for Next Five Years: The District is interested in exploring partnerships with local businesses such as food banks to facilitate food donation. The District will explore providing technical assistance on food scrap management for both commercial and industrial businesses.

Name	Start Date	End Date	Goal
Food Waste Management Program (new program)	2025	N/A	2

As discussed in *Appendix G* and further in *Appendix H*, food waste comprises one of the largest material categories being landfilled. The District does not have a centralized program to divert food waste and is interested in exploring a food waste drop-off program. The District has discussed the option of a pilot program with Rust Belt Riders, a northern Ohio company focused on diverting food waste by composting.

The District will explore the potential to develop a pilot program with Rust Belt Riders to provide locations for residents to drop off food waste instead of throwing it into the trash. Based on the results of the pilot program and community feedback, a larger program may be developed.

Recycling Facilities

The District operates two collection facilities, one each in Trumbull and Geauga Counties, where Geauga and Trumbull County residents can bring hard-to-manage materials for recycling year-round. The Geauga Collection facility opened in June 2022. The recycling drop-off area accepts electronics, appliances, lead-acid batteries, fluorescent bulbs, oil, and other HHW. An acceptable material list is maintained on the District’s website. Outreach via newspapers, the District website, and utility bill mailers are published to inform residents of the convenient Geauga County opportunity. HHW operations are contracted for transportation and processing. To minimize costs, District staff are used when feasible.

The Trumbull County Facility is open from 10 a.m. to 3 p.m. on Tuesdays and Wednesdays. Tuesdays only accept appliances and electronics while Wednesdays accept HHW on top of appliances and electronics.

The Geauga County Facility is open from 10 a.m. to 3 p.m. on Thursdays and Fridays. Thursdays only accept appliances and electronics while Fridays accept HHW on top of appliances and electronics. The opening of the Geauga Collection facility has increased all types of special waste the District accepts. Significant increases in electronics and appliances were seen in 2022. In 2021, the District hosted a one-day HHW collection that collected 29.88 tons. The District did not host a one-day event in 2022 because the new facility was opened in Geauga County in June 2022. HHW volumes for Geauga for the seven months opened in 2022 were similar to the tonnage for the one-day event in 2021. Additional increases in electronics, appliances, and HHW are expected in 2023, as the new facility will be open for an entire year. The popularity of collecting e-waste and appliances during community cleanups has also led to increases in both of those types of waste. The District anticipates communities will continue to collect those materials as long as the District helps to fund their collection events.

The following programs are all conducted at the District’s recycling facilities: Electronic Collection, Appliance Collection, and HHW Collection.

Table I-1 Historic Collection at Recycling Facilities

Year	Tons Collected at Collection Facility		
	Electronics	HHW	Appliances
2018	Data not available	Data not available	Data not available
2019	Data not available	Data not available	Data not available
2020	102	53	2
2021	99	53	53
2022	154	64	81

Source: District Material Records

Name	Start Date	End Date	Goal
Electronics Collection	Ongoing	Ongoing	1, 2, and 5

The District accepts electronic waste at both collection facilities. In 2020, when the District operated just one collection facility, the facility was shut down for six weeks due to COVID-19 restrictions. When re-opened, the District saw high participation levels for the remainder of the year. The following year in 2021 the collection center was open for the full year.

In 2022, 89.48 tons of televisions and monitors and 64.38 tons of computers, laptops, wires, and other e-waste were collected and recycled. In February 2022, the District changed its e-waste vendor to Green Wave Electronics, an R2v3 Certified vendor. The previous vendor used downstream R2-certified vendors but was not R2-certified. Changing to an R2-certified vendor increased the types of materials able to be truly recycled and provided much-needed data to the District on what types of materials are being accepted and how they are recycled. There was a significant increase in tonnage recycled for computers, laptops, and other e-waste with the new R2-certified vendor.

Additionally in 2022, the District offered box truck rentals, allowing communities to collect electronics and appliances at their local community cleanup events, so they could easily transport materials to the closest collection facility in the District for processing. Fifteen communities collected electronics during their community cleanup days. Each transported at least one box truck full of materials to a collection facility for processing. One community used District grant funds to contract with a local R2-certified vendor (GreenBoard IT) and collected 7.92 tons of materials for recycling.

This same year, GreenBoard IT opened a location in Warren where businesses, schools, and residents can bring electronics for recycling. District collection facilities are for residents ONLY, so this operation provides a much-needed service throughout the entire area.

Target for Next Five Years: Continue throughout planning period.

Name	Start Date	End Date	Goal
Appliance Collection	Ongoing	Ongoing	1, 2, and 5

In Geauga County, there are no scrap vendors who accept appliances with freon, so there is a great need for proper disposal of refrigerators, A/C units, etc. in that area. The District collected 27.92 tons of appliances at the Geauga Collection Facility during the seven months it was in operation. In 2023, tonnages are expected to be even higher, given a full year of operation. Additionally in 2022, the District offered box truck rentals allowing communities to collect electronics and appliances at their local community cleanup events. Using District sponsored box trucks communities could easily transport materials to the closest collection facility in the District for processing. Fifteen communities collected electronics and appliances during their community cleanup days. Each transported at least one box truck full of materials to a collection facility for processing.

Target for Next Five Years: Continue throughout planning period.

Name	Start Date	End Date	Goal
HHW Collection	Ongoing	Ongoing	1, 2, and 5

The District operates a collection facility in Trumbull County where residents can bring household hazardous waste for proper disposal one day a week from May to October. A second facility in Geauga County opened in June 2022 that will accept HHW one day per week year-round. The District is working to upgrade the Trumbull Collection Facility to allow us to accept HHW in the winter months. In 2022, the District collected 64 tons of HHW between the two facilities.

Target for Next Five Years: Continue throughout planning period.

Funding/Grants

Name	Start Date	End Date	Goal
Scrap Tire Grants	Ongoing	Ongoing	1, 2, and 5

The District offers yearly grants to political jurisdictions to assist in the disposal of scrap tires. Each year the tire grant applications are mailed to the 56 political subdivisions in March. Grant funds may be used for one or more or a combination of programs including:

- collection drives in conjunction with spring cleanups;
- curbside collection drives,
- roadside cleanup of illegally dumped tires.

Grant amounts are based on population percentage. No matching financial commitment is required. The dates of community scrap tire collection events are published on the District’s website as well as a list of scrap tire facilities.

Many retail outlets are accepting unwanted tires throughout the District, however, scrap tire collection events offer residents a no-cost or low-cost (depending on the community) opportunity to recycle scrap tires. Due to the rising cost of disposing tires, the District increased the annual budget for Scrap Tire grants from \$100,000 to \$150,000, starting in 2022. Every community in both Geauga and Trumbull County was allowed to receive funding to host scrap tire amnesty events. Four communities chose not to apply. 53 communities

within the District received funding, totaling \$106,135. The participating communities collected 408 tons of scrap tires for recycling.

Target for Next Five Years: Continue throughout planning period.

Name	Start Date	End Date	Goal
Market Development Grants	2019	Ongoing	2

The District monitors State and Federal grant programs that become available to aid in the development of this type of funding. The Policy Committee reviews proposals from established businesses and awards funding for local match portions of grant applications. This funding helps “close the loop” in recycling.

Discussions are ongoing with Ohio Valley Waste to increase curbside recycling opportunities throughout the District. They are now offering curbside recycling to their trash customers throughout their areas of service in Trumbull County. Their recent purchase of a large transfer station in Warren (formerly ETSI) allowed the District to open discussions with them to assist in their development of a small MRF at that site to allow for easier servicing of drop-off sites and curbside. When they are ready to proceed, the District will consider working with them to write a Market Development Grant.

The District opened up its Go Green Grants to non-profits to assist in the purchase of recycling equipment. The District Director spoke on acting as a pass-through for Market Development Grants for all local businesses.

Target for Next Five Years: Continue throughout planning period.

Name	Start Date	End Date	Goal
Recycling Incentive Grants (Go Green Grants)	2018	Ongoing	2

Recycling incentives are available to businesses, government entities, non-profit organizations, and education institutions interested in implementing a new recycling program or improving an existing program to support long-term recycling goals. Grants will be awarded on a competitive basis with an emphasis on awards towards non-subscription curbside recycling.

The District gives priority to grant funding based on the following criteria:

- New curbside recycling programs.
- Demonstration of Need – Applicant clearly defines funding need.
- Strength of Program – Proposed activities are innovative and attempt to enlist new behavior.
- Evaluation – Applicant has the means and mechanisms for tracking results and measuring success.
- Sustainability – Applicant demonstrates a commitment to long-term recycling.

Grants will continue to be offered annually as long as funding permits.

District staff will facilitate discussion and engagement with political jurisdiction stakeholders encouraging curbside recycling. Outreach and technical assistance promoting curbside recycling requires time and

discussions. The District will tailor assistance specific to each community’s needs. Phone calls, meetings, and outreach include discussions around costs, policies, practices, and collection.

Communities may apply for a Recycling Incentive Grant to improve their drop-off site locations with signs, fencing, or other demonstrated benefits to improve recycling at the location.

Target for the Next Five Years: Reach two jurisdictions a year through in-person meetings and technical assistance.

Name	Start Date	End Date	Goal
Recycle Ohio 2021-2022	2021	Ongoing	2

The District was awarded a Recycle Ohio Grant in July 2021 to assist in the promotion of the Great American Cleanup events in 2022 and begin an anti-contamination campaign at the recycling drop-off sites. The EPA awarded \$30,000 and the District promised at least \$7,500 in matching funds. The District started initial data collection in 2021 by conducting an audit of multiple drop-off sites. This audit was used to determine messaging for the anti-contamination educational campaign based on the items most contaminating the recycling stream. This campaign focuses on items thought to be recyclable, but not accepted in our single-stream system. There is an illegal dumping component, but the campaign focused primarily on "wish-cycling". A new mascot, Re-Co (Recycle Correctly) was created and is being used to promote new messaging. One of the issues with recycling in the District is that there are multiple MRFs accepting materials from our residents and businesses creating confusion about what recyclables can be accepted. Re-Co's message is that only 5 items (bottles, jugs, jars, cans, and paper/cardboard) are accepted by every company. Anything else needs to be checked with your hauler. The Re-Co's program includes:

- New recycle bin labels created with Recycling Partnership designs,
- new changeable signs at each site,
- social media push
- TV commercials helped to educate residents about the importance of only recycling what is accepted.

Target for the Next Five Years: The District will continue to promote the anti-contamination campaign.

Facility Operation

Name	Start Date	End Date	Goal
Trumbull Collection Facility	Ongoing	Ongoing	1, 2, and 5

The Trumbull Collection Facility is open for electronics and appliance recycling. In 2022, the District started accepting materials on April 20, 2022, through October 26, 2022. Electronics and appliances were collected two days a week during the spring and summer months, and HHW was collected every Wednesday. Additionally, the facility was open one Saturday a month through October for a total of five Saturdays during this period that collected electronics, appliances, and HHW. After October 26th, the Trumbull Collection Facility reduced hours to one day a week for electronics and appliances only.

A total of 64 tons of HHW were collected and recycled through the District’s HHW vendor, CleanEarth. 114 tons of electronics were collected and recycled by GreenWave, and 54 tons of appliances were recycled by Falls Recycling. CleanEarth will remain the District’s HHW vendor for both the Geauga and Trumbull Facilities in 2023. In February 2022, Green Wave Electronics was chosen as the District’s new electronics vendor for both facilities. They are R2v3 certified and are capable of recycling more material than the previous vendor.

Name	Start Date	End Date	Goal
Geauga Collection Facility	Ongoing	Ongoing	1, 2, and 5

The grand opening of the Geauga Collection Facility was June 2, 2022. Electronics and appliances were collected two days a week from the grand opening through October 28, 2022. HHW was collected every Friday from opening and year-round thereafter. Additionally, the facility was open one Saturday a month from June through October – five Saturdays during this period to collect electronics, appliances, and HHW. After October 28th, the Geauga Collection Facility reduced hours to one day a week for electronics, appliances, and HHW collection.

The facility has a drive-through to allow for collection indoors during inclement weather. A total of 24 tons of HHW were collected and recycled through CleanEarth. Forty tons of electronics were collected and recycled by GreenWave, and 28 tons of appliances were recycled by Falls Recycling.



The District anticipates a significant increase in annual tonnage in 2023, compared to 2022, because the Geauga Collection Facility will be in operation for an entire year, versus seven months in 2022.

Enforcement and Clean-Up

Name	Start Date	End Date	Goal
Great American Litter Clean-Up	Ongoing	Ongoing	none

For over 30 years, the District has participated in the Keep America Beautiful/Great American Clean Up Program. Cleanups are held throughout the warmer months before the weeds grow to cover unsightly road

litter in ditches, parks, and along roadsides. Volunteers are given trash bags, gloves, vests, and other safety equipment for their clean-ups which can be done in conjunction with beautification projects within the community. This strategy helps to reduce litter and keep the community clean.

The District received Recycle Ohio Grant funds to help support GAC events in spring 2022. Litter cleanup events increased to pre-COVID levels, and there was a strong demand for supplies and assistance. In addition to supplies, the District also advertised cleanup events in local newspapers and on TV to assist in garnering volunteers for community events. The District provided supplies for 2,062 volunteers. 41,787 pounds of trash and 1,928 pounds of recyclable materials were collected.

Target for Next Five Years: Continue throughout the planning period.

Name	Start Date	End Date	Goal
Health Department Enforcement	Ongoing	Ongoing	2

In 1997, the District began providing financial assistance to Ohio EPA-approved (Allowable Use 3) Health Districts to implement a solid waste enforcement program. The District provided funding to the four Ohio EPA-approved Health Districts. Geauga County, Trumbull County, Warren City, and Girard City. The Health District enforcement duties consisted of:

- Inspections are required by Ohio EPA for the health district to remain on the Director’s approved list
- Work with the District when solid waste issues arise.

The District also provided funding for a Deputy, a Trumbull County Sheriff Deputy, and a Warren City Police Officer to assist with the enforcement program. Duties were not clearly defined other than to work with the District and Health Districts. How the program is intended to be implemented:

- 1.) Health Districts investigate general solid waste/nuisance complaints.
- 2.) Health District’s abate environmental issues.
- 3.) Law enforcement officers received reports to follow up with.
- 4.) Health Districts meet monthly with law enforcement officers to share information and work together for quick resolutions for environmental issues.

The Health Districts are very successful in abating environmental issues. The lack of outlined duties for the law enforcement officers coupled with individual programs not being structured, resulted in less than desired enforcement results. Litter crimes and illegal dumping are a top priority for the District but in December 2016 the program was suspended to further analyze the organization, structure, and coordination. After years of program implementation, the District took an internal review of the program identifying the following areas needed to make the program successful:

- 100 percent government commitment (health districts, law enforcement, courts, and judges)
- Clearly defined duties and responsibilities for all involved parties
- Reporting procedures
- Partnership between political jurisdictions, enforcement agencies, and regulatory organizations
- Illegal dumping reporting procedures and monitoring

Target for Next Five Years: The District will continue to fund the three Health Districts (Trumbull, Geauga, Warren) for enforcement.

Name	Start Date	End Date	Goal
Environmental Crimes Task Force	2019	Ongoing	2

The Environmental Enforcement Program was redeveloped into the Environment Crimes Task Force (ECTF). The ECTF is a partnership between local municipalities, enforcement agencies, regulatory organizations, and District staff. The District planned to bring the following partners together to collaborate on environmental crimes in the two counties:

- Geauga and Trumbull County Sheriff’s Office
- Geauga and Trumbull County Prosecutor’s Office
- Municipalities (e.g., Code Enforcement, Public Works Departments)
- Local Police Departments
- Geauga and Trumbull County Public Health Departments
- Ohio Environmental Protection Agency
- Ohio Department of Transportation
- Geauga-Trumbull Solid Waste Management District

As the program was re-developed, the District needed a level of enforcement to combat issues. Local law enforcement agencies are reimbursed up to \$500 for each case of littering or open dumping where they file charges. This includes running license plates, filing charges, and appearing in court. There are five law enforcement jurisdictions in Geauga and 19 in Trumbull. The District hosted two meetings, one for Geauga County and one for Trumbull County law enforcement agencies to explain the program and process for reimbursement. An emphasis was placed on drop-off container sites. A budget of \$25,000 is allocated which will allow for 50 cases.

Building on relationships with local law enforcement, in 2022 multiple illegal dumping complaints were referred to law enforcement for fines or community service mandates. Illegal dumping at sites with cameras is down significantly. Combined with the availability of District grant funds to purchase cameras and other security upgrades, the District is pursuing support at the community level, rather than funding a separate program at this time. This strategy will be reviewed and evaluated annually to determine when a separate program is ready for implementation.

Target for Next Five Years: Continue throughout planning period.

Other Programs

Name	Start Date	End Date	Goal
Data Collection	Ongoing	Ongoing	2

Commercial and industrial businesses are annually mailed survey packets which include cover letters, surveys, and postage-paid return envelopes. Survey recipients are given the option to submit their

completed surveys via email or fax. Priority is placed on obtaining responses from entities that have not provided data within the last two surveys that are known to generate a significant quantity of recycling and waste. The District relies heavily on Ohio EPA-provided data for MRFs and large box store commercial enterprises.

Haulers report annually as a requirement for hauling registration. Brokers were contacted via phone calls and faxed or emailed surveys to be completed. All survey efforts are time intensive and took significant follow-up phone calls to receive responses.

Target for Next 5 Years: The District will conduct annual surveys with an emphasis on receiving responses from commercial businesses. Beginning in 2023, the District developed a web-based platform to survey the residential, commercial, and industrial sectors. The District plans to survey its communities and local businesses for data on recycling activities annually. Data will be collected and broken down by NAICS code to properly classify which sector it falls under. The District will send out links to the surveys via email to the list of businesses and community contacts in both Geauga and Trumbull Counties. High-priority targets will be identified, and the District will make efforts to follow up with contacts via email and phone calls.

The District will continue to work with waste haulers to gather data on recycling and yard waste tonnage collected as well as rely on Ohio EPA’s annual reports on compost operations, MRFs, and big box stores. The District will review the data received for accuracy and to prevent any double counting of data included in Ohio EPA’s reports. Any data that is not reported already can be attributed to the District’s recycling rate and improve its ability to achieve Goal 2. Should the District deem it necessary, outside assistance from solid waste consultants may or may not be used to gather data.

Name	Start Date	End Date	Goal
Inventory List	Ongoing	Ongoing	2

The District maintains a list of scrap dealers available in the District, which can also be found on the webpage. The majority are located in the southern portion of Trumbull County. The District is working to develop an inventory list for private facilities recycling. This list is a primary goal during the plan update.

Target for Next 5 Years: Add processors and diversion locations within the District to the list of scrap dealers. Entities such as recycling centers, composting sites, food banks, etc. will be added to provide residents with a centralized list of diversion outlets in the District. Once complete, this database will be posted on the website and awareness will be spread through social media.

Name	Start Date	End Date	Goal
Keep America Beautiful Affiliation (new program)	2024	N/A	4

As of the writing of this plan update the District is in the process of applying to be a Keep America Beautiful Affiliate. The District expects this to be finalized in the summer of 2024.

Name	Start Date	End Date	Goal
Summer Internship Opportunities (new program)	2025	N/A	N/A

The District is interested in exploring the possibility of hiring a summer intern annually. Depending on District funding and applicant interest, interns would help provide much-needed support to District staff. The District plans to keep a running list of items or tasks throughout the year that it would like to accomplish but does not have the time or resources to pursue. Such tasks can be assigned to interns during their time with the District and could include assisting the District with grant applications, research projects, community outreach, database building, and education/awareness.

Name	Start Date	End Date	Goal
Contracted Assistance (new program)	2025	N/A	N/A

Through discussions with the policy committee, it was determined that the District could benefit from additional support with its projects and/or programs to reach its goals. The District will budget \$50,000 annually to be put towards contracted assistance from consultants, planners, engineers, etc. The annual budget will be dependent on the needs of the District in a given year. Should the District decide no assistance is necessary, the funds will not be spent and will be rolled into the following year.

Name	Start Date	End Date	Goal
Disaster Debris Management (new program)	2025	N/A	N/A

Responding to natural disasters, such as flood events, tornados, and severe storms, requires a significant effort of coordination and time from all levels of government. Natural disasters including disease (pandemic bird flu) can also significantly impact communities and specifically solid waste services. Man-made disasters, although unlikely, may also require the management of significant amounts of debris. The Ohio EPA encourages all solid waste management districts to outline a strategy and plans to be prepared in the event a natural or man-made disaster occurs.

The District will follow the Local Emergency Planning Committee’s Disaster Debris Management Plan should the need arise.

APPENDIX J

REFERENCE YEAR OPPORTUNITY TO
RECYCLE AND DEMONSTRATION OF
ACHIEVING GOAL 1

Appendix J. Opportunity to Recycle and Demonstration of Achieving Goal 1

The District has two choices to demonstrate achieving waste reduction and recycling goals in accordance with the 2020 State Plan. The District chooses to demonstrate Goal 2, which is detailed in Appendix K.

DRAFT

APPENDIX K
WASTE REDUCTION AND RECYCLING
RATES AND DEMONSTRATION OF
ACHIEVING GOAL 2

Appendix K. Waste Reduction and Recycling Rates and Demonstration of Achieving Goal 2

The Geauga-Trumbull SWMD has two choices to demonstrate achieving waste reduction and recycling goals in accordance with the 2020 State Plan. The District chooses to demonstrate Goal 2, which is detailed here in Appendix K. Goal 2 states that the District will reduce and recycle at least 25% of the solid waste generated by the residential/ commercial sector. In the reference year, the District diverted 24.5% of all waste generated from this sector.

Table K-1 Residential/Commercial Annual Rate of Waste Reduction

Year	Population	Recycled	Disposed	Total Generated	Waste Reduction & Recycling Rate (%)	Per Capita Waste Reduction & Recycling Rate (ppd)
2022	295,550	87,969	271,538	359,508	24.5%	1.63
2023	294,479	91,312	274,254	365,566	25.0%	1.70
2024	293,418	92,974	276,996	369,971	25.1%	1.74
2025	292,366	94,724	279,766	374,490	25.3%	1.78
2026	291,322	98,057	282,564	380,621	25.8%	1.84
2027	290,288	99,998	285,390	385,388	25.9%	1.89
2028	289,263	103,396	288,244	391,639	26.4%	1.96
2029	288,247	105,555	291,126	396,681	26.6%	2.01
2030	287,240	107,840	294,037	401,877	26.8%	2.06
2031	286,242	108,324	296,978	405,301	26.7%	2.07
2032	286,242	108,324	299,947	408,271	26.5%	2.07
2033	286,242	108,324	299,947	408,271	26.5%	2.07
2034	286,242	108,324	299,947	408,271	26.5%	2.07
2035	286,242	108,324	299,947	408,271	26.5%	2.07
2036	286,242	108,324	299,947	408,271	26.5%	2.07
2037	286,242	108,324	299,947	408,271	26.5%	2.07
2038	286,242	108,324	299,947	408,271	26.5%	2.07
2039	286,242	108,324	299,947	408,271	26.5%	2.07
2040	286,242	108,324	299,947	408,271	26.5%	2.07

Source:

Population – Appendix C, Table C-1

Recycled – Appendix E, Table E-8

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)

In the reference year, the District narrowly missed the state goal of 25% residential/commercial waste reduction and recycling rate. As detailed in **Table K-1** above, projections show diversion will exceed the state goal of 25% through the planning period. Projections are flatlined in the seventh year of the planning period.

The 2019 Plan update projected a total waste diversion of roughly 86,000 tons in 2022 with approximately 227,000 tons of waste disposal from the residential/commercial sector. This calculated a 26% waste reduction rate. The actual reported waste disposal for 2022 is roughly 45,000 tons more than projected in the 2019 Plan for 2022.

Table K-2 Industrial Annual Rate of Waste Reduction

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Non-Recyclable Waste	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2022	13,946	44,018		57,965	24.06%
2023	13,946	46,219		60,165	23.18%
2024	13,946	48,530		62,476	22.32%
2025	13,946	50,956		64,903	21.49%
2026	13,946	53,504		67,451	20.68%
2027	13,946	56,180		70,126	19.89%
2028	13,946	58,988		72,935	19.12%
2029	13,946	61,938		75,884	18.38%
2030	13,946	65,035		78,981	17.66%
2031	13,946	68,287		82,233	16.96%
2032	13,946	68,287		82,233	16.96%
2033	13,946	68,287		82,233	16.96%
2034	13,946	68,287		82,233	16.96%
2035	13,946	68,287		82,233	16.96%
2036	13,946	68,287		82,233	16.96%
2037	13,946	68,287		82,233	16.96%
2038	13,946	68,287		82,233	16.96%
2039	13,946	68,287		82,233	16.96%
2040	13,946	68,287		82,233	16.96%

Source:

Recycled – Appendix F, Table F-5

Disposed – Appendix D, Table D-3

Sample Calculation:

Total Generated = Recycled + Disposed

Waste Reduction & Recycling Rate = Recycled / Total Generated

The 2020 State Plan no longer requires Solid Waste Management Districts to demonstrate a waste diversion goal for the industrial sector (previous goal of 66% diverted waste). Upon removal of this goal, Districts may choose whether to survey the industrial sector or not.

The Geauga-Trumbull SWMD conducted an industrial survey in the reference year. However, this sector is less of a focus for the District than the residential/commercial survey. It has become common practice for

many businesses to recycle with the heightened importance of sustainable business practices for stakeholders and the fact that recycling often saves many businesses money. The District expects many businesses from this sector do recycle, and that the number reported to the District is likely significantly lower than true industrial diversion.

The 2019 Plan projected industrial diversion to be 70%. Scaled back survey efforts resulted in less data capture in 2022, measuring the diversion rate at 24% for the industrial sector. The District plans to continue to survey industrial businesses though with no emphasis on returned responses. As such, the District expects the industrial diversion rate to decrease and as projected in Appendix D, waste disposal to increase.

Table K-3 Total Solid Waste Annual Rate of Waste Reduction

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2022	101,916	315,557	417,472	24.41%
2023	105,259	320,473	425,732	24.72%
2024	106,921	325,526	432,447	24.72%
2025	108,670	330,723	439,393	24.73%
2026	112,003	336,068	448,072	25.00%
2027	113,944	341,569	455,514	25.01%
2028	117,342	347,232	464,574	25.26%
2029	119,501	353,064	472,565	25.29%
2030	121,786	359,072	480,858	25.33%
2031	122,270	365,264	487,534	25.08%
2032	122,270	368,234	490,504	24.93%
2033	122,270	368,234	490,504	24.93%
2034	122,270	368,234	490,504	24.93%
2035	122,270	368,234	490,504	24.93%
2036	122,270	368,234	490,504	24.93%
2037	122,270	368,234	490,504	24.93%
2038	122,270	368,234	490,504	24.93%
2039	122,270	368,234	490,504	24.93%
2040	122,270	368,234	490,504	24.93%

Source:

Recycled – Appendix E, Table E-8 Appendix F, Table F-5

Disposed – Appendix D, Table D-3

Sample Calculation:

Total Generated = Recycled + Disposed

Waste Reduction & Recycling Rate = Recycled / Total Generated

APPENDIX L

MINIMUM REQUIRED EDUCATION PROGRAMS: OUTREACH AND MARKETING PLAN AND GENERAL EDUCATION REQUIREMENTS

Appendix L. Minimum Required Education Programs: Outreach and Marketing Plan and General Education Requirements

A. Minimum Required Education Programs

In accordance with Goal 3 of the 2020 State Plan, the District is required to provide four minimum education programs:

1. A website,
2. A comprehensive resource list,
3. An inventory of available infrastructure, and
4. A speaker or presenter.

The District met these requirements in the reference year.

1. Website

The District maintains a website address at <https://startrecycling.com/>. The District strives to maintain a comprehensive and user-friendly website with all the recycling information users need. The website is a strong resource for residents, schools, businesses, institutions, and local governments to utilize. The website offers dedicated pages for special waste management, recycling, trash, education, litter, and other district activities. The website provides detailed information and inventories of all the services provided by the Geauga-Trumbull Solid Waste Management District, making it a reliable source for providing instant information for programs, services, and events offered.



2. Comprehensive Resource Guide

The District’s website includes a dedicated page for recycling resources. Under this page are drop-off locations, areas with curbside recycling, acceptable materials to recycle, local alternative recycling options,

and information on the District’s Recycling Centers. The District updates this annually to ensure the information is accurate and up to date.

3. Inventory

An infrastructure inventory of all available drop-off locations, curbside programs, compost sites, material recovery facilities, etc. can be found in the Plan, which is updated every five years. Specific recycling inventory can also be found on the District’s website. The information on the website is updated more frequently than the District’s Solid Waste Management Plans to reflect any changes that may happen in between Plan Update cycles.

4. Speaker/Presenter

The District’s Education Specialist retired in 2019. Instead of hiring another full-time employee, the District established a partnership in the fall of 2022 to subcontract with Trumbull Soil & Water Conservation District (SWCD) and Geauga Soil & Water Conservation District (SWCD) to provide educational programs in their respective territories. The Director is still providing educational and outreach programs to adults.

B. Outreach and Education – Outreach Plan and General Education Requirements

To align with Format 4.0, the District’s existing programs were organized by target audience. Some of the existing SWMD programs cross several target audiences. The District’s outreach, education, and technical assistance programs address all five required target audiences. **Table L-1** below lists the programs offered by the District by target audience. Many programs reach more than one target audience and may shift as the needs of target audiences change over time. The District is committed to offering a wide range of services, education, and outreach to all target audiences through the planning period.

Table L-1 Program Reach by Target Audience

Education/ Outreach Program	Target Audience				
	Residents	Schools	Industries	Institutions & Commercial Businesses	Communities and Elected Officials
District Website	X	X	X	X	X
Reduce, Reuse, Recycle (R3) Directory	X	X	X	X	X
Education Program	X	X		X	
Awareness Program	X	X		X	X
Resident Outreach	X				
School Outreach		X			
Institutions and Commercial Business Outreach				X	
Community and Elected Official Outreach					X
Social Media	X	X	X	X	X

Program Descriptions

Name	Start Date	End Date	Goal(s)
District Website	Ongoing	Ongoing	Goal 4

The District’s website serves as an online resource for all target audiences, containing helpful information on the District and its recycling/diversion efforts, contact information, programs, infrastructure, local recycling alternatives, and more. The District website is continually updated to provide the most up-to-date information. All special events are posted on the website, with links to flyers for more information. Community collections, changes in recycling schedules, and general educational articles are also posted regularly.

The District website was updated in 2019 to better educate residents about ALL of the programs the District offers, as well as optimize ease of use for visitors. Additional drop-downs were created and the main page was edited to make contact with District personnel easier. The Director was trained to update the website without assistance from the website provider, allowing for more efficient edits and additions to District activities.

In 2021, The District worked with a web designer to make the webpage more user-friendly. The redesign was scheduled to be available in the summer of 2022.

In September 2022, the District unveiled a newly redesigned website, which now includes a directory of wastes and where to dispose of them properly in our area. Additional dropdowns were created to be more in line with typical resident questions. The main page was edited to make contact with District personnel easier. The Director updates the website as necessary without assistance from the website provider.

Target for Next 5 Years: Continue throughout planning period.

Name	Start Date	End Date	Goal(s)
Reduce, Reuse, Recycle (R3) Directory	Ongoing	Ongoing	Goal 4

Program information on the website serves as a comprehensive resource guide as required by the Ohio EPA 2020 State Plan. To accommodate interested residents the District developed a Reduce, Reuse, Recycling (R3) Directory available online. The directory includes: an introduction, frequently asked questions, how to prepare recyclables, district programs, a listing of outlets by materials, and reuse centers. The directory is updated every other year. Information from the directory is available in the search function of the website.

Target for Next 5 Years: Continue throughout planning period.

Name	Start Date	End Date	Goal(s)
Education Program	Ongoing	Ongoing	Goal 4

The District places a strong emphasis on conventional classroom education programs targeting K through 12-grade students. Prior to retirement, the Education Specialist developed updated classroom presentations about the environment. Methods utilized as part of the education program include:

- Classroom presentations on various environmental issues
- Locally developed curriculums
- Lending materials and Resource Kits
- Library presentations and summer programs
- Presentations to civic groups and organizations
- Information brochures and pamphlets/teacher newsletters
- District website
- Partnerships with the Geauga and Trumbull Soil & Water Conservation Districts

Classroom education presentations include take-home informational material on the District’s drop-off recycling program. Additionally, the District offers youth group environmental education programs and summer children’s education programs. Adult education programs can be requested anytime during the year. The program covers the top 10 items to recycle and all the local community collection programs offered by the District.

The District’s full-time educator retired in 2019. A new educator was not hired to replace her, but another staff member was asked to take over those duties. She began educational training and was able to start educational activities late in the year.

In 2020, the COVID-19 pandemic caused significant challenges for this program. The previous staff member who assumed the educational presentation responsibilities was laid off due to the pandemic and the District was not allowed to give in-person presentations. However, two virtual presentations were given.

In 2021, the Board decided to subcontract work with local Soil and Water Conservation Districts rather than hire a full-time educator. The District worked on contracts with the Trumbull SWCD and Geauga SWCD to provide educational programs in their respective territories. In the meantime, the Director provided all educational and outreach programs, which were still limited at the beginning of 2021 due to COVID-19 precautions.

In the fall of 2022, the District entered into contracts with Trumbull SWCD and Geauga SWCD to provide educational programs in their respective territories. The Director is still providing educational and outreach programs to adults.

Grades 4-6 Programs
 Programs include an activity and last approximately 4 minutes.
 To schedule a program visit <https://startrecycling.com/education/>.

Recycle Relay
 Successful sorting of what goes where in this fast pace activity.

Natural Resources Relay
 Students learn what natural resources are used to make common items such as plastic.

Take a bite out of the Landfill
 Where does the garbage truck dump all our trash? Is there enough room? This presentation addresses landfills and decomposition.
 Each layer of the landfill is a tasty treat at the end with an edible activity.

Sustainable Shopping
 Students learn how to reduce the amount of trash going into landfills by purchasing items with packaging that is environmentally friendly as well purchasing recycled items.

3R's Bingo
 Bingo with the focus on "Reduce, Reuse and Recycle."

Recycled Products and Odd Recycling
 We don't think twice about recycling glass, aluminum and paper. However the idea of recycling old garbage dumpsters into swimming pools and food waste into purses is questionable. Students will take a look at recycled products made from everyday items and then vote on cutting-edge or edge of yucky recycling efforts and cast their vote: green or gross.

Classrooms are invited to join our annual Earth Day Event:
The Great American Clean Up!
 Free trash bags and gloves to all who volunteer to do a litter clean up!
 Free T-shirts to volunteers while supplies last!

Stop the Pollution

Reduce
 Reduce the amount of the waste you produce.

Reuse
 Reuse items as much as you can before replacing them.

Recycle
 Recycle items wherever possible.

GOTTA GO GREEN

Table L-1 Educational Presentations

Education/ Outreach Program	Number Of presentations	Audience Reached
2018	Data Not Available	Data Not Available
2019	17	492
2020	2 (virtual)	50
2021	12	527
2022	24	1,170

The District experienced a tumultuous five years for the educational program. With the District’s Education Specialist retiring immediately followed by COVID-19, the District faced challenges in effectively operating this program. However, in the year of the District’s partnership with the Soil & Water Conservation Districts, there was a significant increase in the amount of people reached. With 2023 being the first full year of this partnership, the District expects to see this number continue to increase and remain an effective collaboration.

Target for Next 5 Years: Continue throughout planning period.

Name	Start Date	End Date	Goal(s)
Awareness Program	Ongoing	Ongoing	Goal 4

This program promotes and publicizes environmental issues and district-sponsored programs to the public. The Director and District staff are all involved with the implementation of this program. A display is used at public events throughout the year with the theme changed to address and promote current programs, events, and services. Promotional items related to recycling and other environmental issues are distributed to the public at various awareness events.

Examples of important notices disseminated through this program historically include a Recycle Ohio Grant in 2020 and more recently, the grand opening of the Geauga Collection Center in 2022. For the opening of this facility, extensive program advertisement was placed in Geauga County newspapers. During the last few months leading up to the grand opening, District staff attended community meetings to answer questions about the new facility and give details about the programs the District offers. The grand opening was covered by local media, which helped spread awareness of the materials we accept and our programs in general. Additional advertising for special collection events was placed in all major newspapers.

Target for Next 5 Years: Over the next three to five years (mid-term strategy) the District is interested in further understanding the complex needs of its two counties. Geauga and Trumbull Counties are vastly different from each other in terms of demographics and socioeconomics. As such, meeting the needs of district residents requires a comprehensive understanding of both counties' needs and desires in terms of waste management and diversion. Over this planning period, the District is interested in conducting a study to gain a better understanding of underserved areas and populations within both counties. Using the results of this study, the District hopes to develop education and awareness materials targeted at underserved areas.

Name	Start Date	End Date	Goal(s)
Resident Outreach	Ongoing	Ongoing	Goal 4

The previous plan set a goal to increase educational engagement to this audience with a focus on reducing drop-off contamination. This program addresses environmental issues related to resident needs by focusing on behavior change. Methods to achieve this include removing barriers, understanding challenges, providing incentives, and normalizing the behavior.

The District’s full-time educator retired in 2019. A new educator was not hired as a replacement but another staff member was asked to take over those duties. After proper training, educational activities resumed late in the year. There were 10 outreach events in 2019, reaching a total of 2,845 participants. A "Gotta-Go-Green Fest" was held in June 2019 inviting the public to learn about District programs and participate in fun recycling activities. Approximately 150 residents attended the new event.

This program works in conjunction with the Awareness Program and helped spread awareness about the District receiving a Recycle Ohio Grant in 2020 and 2021. In 2022, a new mascot, Re-Co (Recycle Correctly) was created and is used to promote new messaging. One of the issues with recycling in the District is multiple MRFs accept materials from residents and businesses, creating confusion about what can be accepted. Re-Co's message emphasizes that only 5 items (bottles, jugs, jars, cans, and paper/cardboard) are accepted by every company. Anything additional recyclables beyond the five items needs to be checked with a hauler. New recycle bin labels, created with Recycling Partnership designs, new changeable signs at each site, a social media push, and TV commercials helped to educate residents about the importance of only recycling what is accepted.

Target for Next 5 Years: Continue to engage District residents, and work within the awareness program goals to prioritize any underserved resident populations such as with postcard and social media impacts.

Name	Start Date	End Date	Goal(s)
School Outreach	Ongoing	Ongoing	Goal 4

This program focuses on developing infrastructure and places emphasis on outreach programs to build recycling programs. The District also provides education and outreach to schools through classroom presentations. The District has grade-specific educational activities for K-6 students.

COVID-19 prevented the District from utilizing this program in 2020. Due to continued COVID-19 precautions, school educational presentations were limited in 2021. Two school presentations were provided by the District in 2021. The District was working through contracts with the Trumbull Soil & Water Conservation District (SWCD) and Geauga SWCD to provide educational programs in their respective territories in 2021. In 2022, the District completed these contracts.

Target for Next 5 Years: Include schools in the drop-off program and develop outreach to explain this addition and its benefits to local schools. See Appendix I for a full description of this goal.

Name	Start Date	End Date	Goal(s)
Institutions and Commercial Business Outreach	Ongoing	Ongoing	Goal 4

The District provides institutions and commercial businesses with education and outreach opportunities. The District offers waste audits for industrial and commercial businesses upon request.

While sending surveys for the 2018 ADR, businesses were also told about the new Green Achievement Certification for businesses that were in development. Interested businesses were given additional information. The District took this further in 2019, providing businesses the opportunity to request information about recycling opportunities and services available to them, as well as to request a waste audit. One company requested a waste audit. It was performed and multiple options were given to reduce waste. The District did not have any requests for waste audits or outreach opportunities in 2021 and 2022.

Target for Next 5 Years: A high-priority focus (one to five years) for the District during this planning period is collecting data on recycling and/or diversion activities within Geauga and Trumbull Counties. Currently, it is thought that many businesses may be unaware of the services the District provides and the resources available to help the commercial sector divert waste. The District will focus on developing relationships with local businesses to collect data and encourage further diversion, especially through the annual commercial survey process.

The District also will make efforts to reach commercial property management and multi-family housing units to encourage and assist in developing recycling services. Many such properties do not offer recycling services.

Name	Start Date	End Date	Goal(s)
Community and Elected Official Outreach	Ongoing	Ongoing	Goal 4

The District’s goal is to engage this audience because they are influential to their residents and building relationships can facilitate the vision of the District. As with the resident outreach this outreach will utilize community-based social marketing to change behaviors. Often, elected officials and community leaders may not understand the operational impacts of policy decisions made about solid waste and recycling. Focus on this audience helps familiarize the audience with the industry and also provides support and resources.

Messages communicated to this audience center around contamination in the recycling programs such as drop-off locations and curbside collection, building strong PAYT models, and assisting communities with contracts for trash collection.

In 2019, District staff contacted at least one elected official in each community (trustee, mayor, administrator, etc.) to discuss current and potential District programs. Officials in communities that sponsor drop-off sites were also surveyed regarding drop-off problems including contamination and illegal dumping issues. When a new director was hired in late 2019, a letter was sent to every community introducing her and offering attendance at upcoming community meetings. The director attended several township trustee meetings,

zoning inspector meetings, and county administration meetings. A relationship was fostered between the district and a Trumbull non-profit responsible for extensive public outreach in the Warren area.

A group email was created including all township trustees, city and village council members, mayors, fiscal officers, and other elected officials in 2020. Regular emails are sent to this group updating them on upcoming events, grant opportunities, etc. The new grant opportunities offered by the District for upgrades to drop-off site locations and infrastructure have opened dialogues between the District staff and the elected officials for those communities that host a drop-off site to discuss illegal dumping and contamination concerns. The District was awarded a Recycle Ohio Grant for anti-contamination education. The District works directly with all elected officials to plan educational materials for residents.

In 2022, the District Director attended increased township meetings and association visits to discuss current and potentially new programs that could be explored and implemented throughout the plan update.

Target for Next 5 Years: Work with elected officials from at least one community a year about establishing curbside recycling. Continue to attend township meetings and establish relationships with elected officials. Explore offering “Elected Official Days” at private sector waste facilities to provide decision-makers with the opportunity to see what goes into waste management and why it is important.

Name	Start Date	End Date	Goal(s)
Social Media	Ongoing	Ongoing	Goal 4

It is common for Districts to have a presence on social media such as Facebook, YouTube, Twitter, and Instagram to name a few. These media allow for a two-way conversation with residents. Social media offers an unparalleled way to measure interaction with target audiences through reports on audience engagement. The District can use these reports to create a baseline and set goals for future online engagement measurement. The District has a Facebook and Instagram account that is managed by a full-time public relations community outreach coordinator.

The District created a Facebook page in 2019 and actively posts and interacts with Facebook users. All special events are posted on the Facebook page. Community collections, changes in recycling schedules, and general educational articles are posted regularly on the Facebook page. These articles and events are shared with community Facebook pages and/or websites (if they have them). In 2022, the District contracted with a media consultation to take over social media postings. They created an Instagram account and created posts with District approval. Under this direction, Facebook page visits increased by 429%, reach increased by 80%, and engagement increased by 25%. Instagram reach increased by 100% and profile visits increased by 100%. The Instagram account is still relatively new and the social media developer is working on increasing followers in 2023.

Reach

Facebook reach ⓘ



Instagram reach ⓘ



Target for Next 5 Years: Continue throughout planning period.

C. Outreach Priority

As discussed in detail in *Appendices G and H*, food waste comprises a large percentage of waste ending up in landfills. With no centralized system in place to divert food waste in the District, this material stream is a gap in the current diversion practices. Through discussions with the Policy Committee and completion of the Program Priority Matrix exercise found in *Appendix I*, the District has elected to focus on food waste diversion as its outreach priority.

Unfortunately, the District does not have access to a Class II compost facility. While there are Class III and Class IV compost facilities within the region, these facilities are not able to accept food waste like a Class II facility is. With no available facilities, the District could look to provide funding and/or establish a food waste diversion facility within its two counties. However, food waste diversion technologies, such as digesters to make compost, can be very expensive. Further issues arise in the feasibility of collecting food waste from commercial businesses and residents alike to serve as feedstock for compost operations.

With these challenges in mind, the District feels a strong alternative route to pursue is education and outreach to residents and schools. Driving behavior change in older generations is exceedingly challenging as many of the undesirable behaviors, in this case wasting food by over-buying, over-ordering, or simply discarding food, have long been established and reinforced throughout the lives of residents. School education will focus on reinforcing behaviors centered around food waste diversion and prevention in the students. Younger generations can take the lessons learned back home.

The District will provide a behavior-changing outreach campaign to both adults and school-age residents. The District currently sells compost bins at a discounted rate and has developed a “How To Compost Brochure”. These materials will continue to be advertised and promoted throughout the year at presentations, meetings, and throughout the District’s online footprint.

Goal/Purpose: To change residential behavior around food waste diversion and prevention. Desirable behaviors include reducing food waste at the source, composting, and donation.

- 1) **Adult Message:** Only buying what can be consumed at grocery stores, portion control while dining out and/or taking home leftovers, backyard composting using District compost bins, and donating food when possible to local food banks.
- 2) **School/Student Message:** Introduce the issue of food waste, eat what you take, and promote mindful eating with activities and demonstrations.

Target Audience: The District will prioritize school-age residents to use a “bottom-up” behavior change method where the younger audiences take home what was learned and serve as the agent of change for the older audiences rather than the District directly. However, the District will continue to emphasize the same messages to adult residents as a secondary audience through existing programs, presentations, and activities.

Strategy: The District no longer has a full-time educator as of 2019. Instead, the District subcontracts with the local Soil and Water Conservation Districts. However, the District Director gives presentations regularly throughout the year. Using this existing structure, the District will create a robust outreach strategy designed to achieve several objectives. The following components will comprise the strategy:

- **Understandings Barriers:** Exploring and understanding the barriers residents and students of the Districts may have toward diverting food waste.
 - **Adults:** This could be done through a variety of methods including conducting a voluntary survey at the District’s collection facilities, an online survey via email outreach, and through discussions at meetings, presentations, and events to name a few.
 - **Students:** This could be done through classroom presentations, online activities, food audit or sort, or teacher lesson planning. World Wildlife Fund toolkit resources for students may be helpful.
- **Development of Food Waste Diversion Materials:**
 - **Adults:** The District would build upon existing materials like the compost guide. The District would also create a living database to provide residents with information on local food waste diversion facilities including food banks, and other methods of diverting food waste including backyard composting. This would also present an opportunity for the District to establish a working relationship with local diversion outlets. The goal would be to lead these businesses to create diversion opportunities and report food waste diversion annually on the District’s survey.
 - **Students:** The District could use templates from other sources. Posters in the school cafeterias, audit templates, working with school administrators and health departments to create share tables, and create school compost bioreactors or in-vessel systems.

- **Best Practices:** Using the EPA's Food Recovery Hierarchy¹, the District will develop educational materials to highlight best practices that residents and students can use in their everyday lives to reduce food waste. These may include but are not limited to best practices for grocery store trips, food storage, cooking tips, at-home composting efforts, and food donations. Materials will be available in an online PDF format published on the District's website and in hard copy prints to be handed out during classroom visits, adult presentations, District collection facilities, etc.

Measuring Success: Measuring the effectiveness of food waste diversion efforts can be challenging. As such, the District will measure the effectiveness of this outreach priority during the planning period using various quantitative metrics. The District will continue to track the number of presentations given both from the Soil and Water Conservation Districts as well as from the District Director.

Adults: The District will monitor the sales of backyard compost bins. Generally, if the sales of these bins rise over time in conjunction with this program's efforts, it can be reasonably assumed that the efforts made are being realized. Food waste diversion facilities and businesses connected with while building out resources will be asked to participate in the District's annual surveying process. Any reported values will be monitored annually.

Schools: Pre- and post-campaign audits will be conducted on any participating school.

Timeline: The general timeline planned for this outreach priority is as follows:

1. **Q1 2025:** Begin exploring perceived barriers residents may see with diverting food waste. Desktop research, case studies, and direct outreach to residents will be used to gain a foundational understanding of common barriers faced, as well as potential solutions. Explore other District's solutions to managing food waste. Explore school interest in participating in a food reduction campaign.
2. **Q3 and Q4 2025:** Conduct short resident outreach surveys and voluntary discussions with the District at commonly used sites such as the District collection facilities, drop-off locations, festivals/events, etc. Develop participating school programs/toolkits to share with the school. Conduct pre-audit campaign measurements.
3. **FY 2025 and 2026:** Creation of a District database to be updated annually, providing information on local food waste diversion opportunities and facilities. Information such as location, acceptable items, contact information, and website links will be included. During this process, the District will reach out to any identified facilities/businesses and try to create a working relationship, informing them of programs, technical assistance, and funding that may be available to support these outlets as well as requesting the completion of the annual recycling survey. Deliver presentations and hands-on activities to students for a time of 4 to 6 weeks.

¹ US EPA Food Recovery Hierarchy, https://19january2017snapshot.epa.gov/sustainable-management-food/food-recovery-hierarchy_.html

4. **FY 2025 and 2026:** Creation of educational materials to be posted on the District website and social media, as well as printed materials to be given at the District collection facilities, presentations, school visits, festivals/events, etc. Deliver presentations and hands-on activities to residents and students for a time of 4 to 6 weeks.
5. Upon completion of the education and outreach materials, conduct a post-audit in schools to measure campaign progress. Conduct analysis of compost bin sales and other metrics for the adults.
6. Repeat. The District will work with its educational partners to continue implementing.

At current staffing levels, the District may not be able to conduct both campaigns concurrently. If not, the plan for the outreach priority will start with one target audience and when the program cycle is complete alternate to the other target audience.

DRAFT

APPENDIX M
WASTE MANAGEMENT CAPACITY
ANALYSIS

Appendix M. Capacity Analysis

This appendix provides the District’s strategy for ensuring access to solid waste management facilities.

A. Access to Publicly Available Landfill Facilities

Table M-1 Remaining Operating Life of Publicly Available Landfills Used (2020 – 2022)

Facility	Location	Years of Remaining Capacity	Applicable Dates
In-State			
Geneva Landfill	Ashtabula County	33	21-Dec-22
Hancock County Landfill	Hancock County	14	21-Dec-22
Mahoning Landfill Inc	Mahoning County	43	21-Dec-22
County Environmental of Wyandot	Wyandot County	104	21-Dec-22
Athens-Hocking Landfill	Athens County	46	21-Dec-22
Rumpke of Northern Ohio Inc Noble Road Landfill	Richland County	13	21-Dec-22
Port Clinton Landfill Inc	Ottawa County	87	21-Dec-22
Evergreen Recycling & Disposal	Wood County	36	21-Dec-22
Lorain County II Landfill LLC	Lorain County	14	21-Dec-22
Apex Environmental, LLC	Jefferson County	18	21-Dec-22
Carbon Limestone Landfill LLC	Mahoning County	37	21-Dec-22
Kimble Sanitary Landfill	Tuscarawas County	30	21-Dec-22
Lake County Solid Waste Facility	Lake County	23	21-Dec-22
Countywide RDF - Republic Services	Stark County	60	21-Dec-22
American Landfill, Inc	Stark County	86	21-Dec-22
Out-Of-State			
Seneca Landfill	Pennsylvania	Data Not Available	
Imperial Landfill	Pennsylvania	Data Not Available	
Valley Waste	Pennsylvania	Data Not Available	

Source:

Ohio EPA Waste Flow Reports 2020, 2021, 2022

2022 Ohio Solid Waste Facility Data Report Tables (Table 13) published by Ohio EPA

Note: Years of remaining capacity are determined from waste accepted as of December 31, 2022.

Table M-1 lists the municipal solid waste landfills where any waste from the District was disposed of in the reference year and two years prior. This includes residential waste, industrial waste, and exempt waste. The landfills listed include those that accepted direct hauled waste and those that accepted transferred waste. Note that municipal solid waste landfills may still accept construction and demolition debris (CDD) waste. As such, some municipal solid waste landfills listed above are included in the table despite only accepting CDD waste.

The District does not have a landfill located inside its boundaries but does have two transfer stations, both located in Trumbull County. Over the past three years, the District has utilized 15 in-state landfills and three out-of-state landfills. The District's waste primarily is disposed of at Carbon Limestone Landfill which accepts a total of 61% the District's waste. As explored in *Appendix D*, the Ohio Valley Waste Warren Transfer station receives a majority of the District's transferred waste. This facility then sends most of the waste received at the facility to Carbon Limestone Landfill. **Table M-2** below presents the waste flow from the District to its destination landfill both from direct hauled and transferred waste.

Table M-2 Tons and Percent Waste Sent to Destination Landfills (2022)

Landfill	Direct Hauled Waste	Transferred Waste	Total Landfilled	Percent of District Waste
Geneva Landfill	21,954	0	21,954	7%
Hancock County Landfill	0	0	0	0%
Countywide RDF -Republic Services	1,515	8,962	10,477	3%
Mahoning Landfill Inc	17,172	0	17,172	5%
American Landfill, Inc.	197	15,604	15,801	5%
County Environmental of Wyandot	2	0	2	0%
Athens-Hocking Landfill	140	0	140	0%
Rumpke of Northern Ohio Inc Noble Road Landfill	22	7,195	7,217	2%
Port Clinton Landfill Inc	2	0	2	0%
Evergreen Recycling & Disposal	4	0	4	0%
Lorain County II Landfill LLC	350	0	350	0%
Apex Environmental, LLC	42	0	42	0%
Carbon Limestone Landfill LLC	82,658	116,092	198,750	61%
Kimble Sanitary Landfill	414	2,711	3,125	1%
Lake County Solid Waste Facility	23,699	0	23,699	7%
Seneca Landfill	1,787	23,623	25,625	8%
Other Out-Of-State Landfill	50	0	50	0%
Total	150,009	174,188	324,147	100%

Source:

Ohio EPA Waste Flow Report 2022

2022 Ohio Solid Waste Facility Data Report Tables (Table 15) published by Ohio EPA

Note: Includes destination landfills for waste transferred.

Note: Includes excluded waste.

Per format 4.1, adequate capacity is achieved if the landfills that combined took 75% of the District's waste have adequate capacity to continue taking waste throughout the first eight years of the planning period. The District does have adequate capacity to last throughout the first eight years of the planning period. Carbon Limestone has 37 years of remaining capacity, Geneva Landfill has 33 years remaining, and Lake County Solid Waste Facility has 23 years remaining as of December 2022. These landfills accept 61%, 7%, and 7% of the District's waste respectively (totaling 75%) and have sufficient capacity to last through the first eight years of the planning.

B. Access to Captive Landfills

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 District did not send waste to captive landfills in the reference year

Table M-3 Captive Landfills

Facility	Location	Years of Remaining Capacity
None		

DRAFT



APPENDIX N

EVALUATING GREENHOUSE GAS EMISSIONS

Appendix N.

Evaluating Greenhouse Gas (GHG)

The Waste Reduction Model (WARM)

WARM is a tool that the US EPA developed to quantify the effects of waste management decisions on greenhouse gas emissions. The model demonstrates the benefits of alternative waste management technologies over traditional waste management methods. The WARM model is updated regularly. A District can use a different but comparable modeling program to calculate greenhouse gas emission reductions provided the model accounts for waste management and recycling activities.

The District is using the WARM model to compare municipal solid waste management scenarios with data derived from the residential/commercial sector.

Each District 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.

A. GHG Measurement

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). These gases include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases. Each gas has its own global warming potential (GWP) with carbon dioxide establishing the baseline global warming potential, all other gases are compared in units of carbon dioxide equivalent (CO₂e). Each gas has varying degrees of effects on the climate and is dependent on the quantity in the atmosphere, the time they remain in the atmosphere, and how strong their GWP is on the atmosphere. Disposal and treatment of materials result in greenhouse gas emissions from collection, transportation, disposal, manufacturing, etc.

The most common method to measure the climate impact of waste management is to measure it in terms of carbon dioxide equivalents. Because waste reduction and waste disposal result in multiple types of greenhouse gases, the conversion to a standard carbon equivalent measurement allows for a total quantification of impacts. It also establishes a standard language to compare these sources of emissions to other sources like transportation and energy reduction efforts. A carbon dioxide equivalent means the number of metric tons of CO₂ emissions with the same global warming potential as one metric ton of another greenhouse gas. The international standard for reporting CO₂ emissions is metric tons. Carbon dioxide quantities will be reported as MTCO₂e, metric tons of carbon dioxide equivalent.

Produced by the 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 tool that helps decision-makers predict the strategies that have the greatest impact on

reducing GHG emissions. The WARM model calculates GHG emissions 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.

The reports below show the metric tons of carbon dioxide equivalent (MTCO_{2e}) which describes the global warming potential of all common greenhouse gases as an equivalent to CO₂. Negative values indicate savings while positive values indicate increasing emissions. In 2022, the District generated roughly 361,000 tons of waste from the residential and commercial sectors, of which 88,000 tons (24%) were diverted from landfills.

By having recycling programs in place, the diverted tons of residential/commercial material in the reference year prevented approximately 124,000 MTCO_{2e} from being emitted into the atmosphere. To put this into perspective, this is equivalent to:

- Removing annual emissions from 26,381 vehicles
- Conserving 13,981,634 gallons of gasoline
- Conserving 10,417 households' annual energy consumption

In 2031, the District is projected to divert 112,318 tons of residential/commercial waste and create an additional GHG savings of 34,394 MTCO_{2e}. The estimated increase in diversion is equivalent to:

- Removing annual emissions from an additional 7,302 vehicles
- Conserving an additional 3,870,131 gallons of gasoline
- Conserving an additional 2,884 household's energy consumption

Total GHG Emissions from Baseline Year (2022) (MTCO _{2E}):	(97,034)
Total GHG Emissions from 6 th Year Planning Period (2031) (MTCO _{2E}):	(164,643)
Incremental GHG Emissions from Diversion Programs (MTCO _{2E}):	(34,394)

Note: Negative values indicate GHG savings

Note: Total GHG emissions includes those from landfilled and diverted materials.

APPENDIX O

FINANCIAL DATA

Appendix O. Financial Data

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 2026 to 2040.

A. Funding Mechanisms and Revenue Generated

This section examines the funding mechanisms expected to be used by the District. In addition, anticipated revenues from each source listed below are projected for each year of the planning period.

1) Disposal Fee

The District does not receive any revenue from disposal fees.

Table O-1. Disposal Fee Schedule and Revenue

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	
Not Applicable							

2) Generation Fee

The District does not levy generation fees.

Table O-2. Generation Fee Schedule and Revenue

Year	Generation Fee Schedule (\$ per ton)	Total Revenue from Generation Fee (\$)
Not Applicable		

3) Designation Fee

In accordance with Ohio Revised Code 343.014, a solid waste management district may adopt designation fees to ensure adequate financing to implement the approved solid waste plan. Designation fees can be levied on any solid waste landfill that is designated by the District to receive District-generated waste.

In June 2007 the Board of Directors adopted designation to assure adequate financing to implement the approved solid waste plan. As part of the designation contracts, solid waste facilities accepting District waste remit a \$5.50 per ton contract fee to the District. To support new programming and rising costs of existing programs, the Policy Committee is planning to increase the contract fee by \$2.00 per ton in 2027. The contract 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 District. **Table O-3** includes historical as well as future projected revenues expected from the designation contract fee.

Table O-3 Designation Fee Schedule and Removal

Year	Designation Fee Schedule (\$ per ton)	Total Designation Fee Revenue
Actual		
2018	\$5.50	\$1,818,542
2019	\$5.50	\$1,683,641
2020	\$5.50	\$1,842,187
2021	\$5.50	\$1,656,354
2022	\$5.50	\$1,718,368
2023	\$5.50	\$1,716,777
Projected		
2024	\$5.50	\$1,700,875
2025	\$5.50	\$1,728,027
2026	\$5.50	\$1,755,957
2027	\$7.50	\$2,433,680
2028	\$7.50	\$2,474,028
2029	\$7.50	\$2,515,580
2030	\$7.50	\$2,558,388
2031	\$7.50	\$2,602,507
2032	\$7.50	\$2,623,667
2033	\$7.50	\$2,623,667
2034	\$7.50	\$2,623,667
2035	\$7.50	\$2,623,667
2036	\$7.50	\$2,623,667
2037	\$7.50	\$2,623,667
2038	\$7.50	\$2,623,667
2039	\$7.50	\$2,623,667
2040	\$7.50	\$2,623,667

Source(s) of Information: Geauga-Trumbull SWMD Quarterly Fee Reports and Appendix D.
 Note: Projections flatline after the sixth year of the planning period.
 Sample Projection Calculations:
 Total Revenue from Designation Fee = (Designation fee x Projected Waste Disposed) x 95%

Table O-3 presents historical data from 2018 to 2023. From 2024 onwards are projected numbers. To be conservative, and ensure the District has sufficient funds to operate, the District projected to receive revenue from its designation fee on 95% of projected disposed waste. The District operates on a cash accounting basis, as a result, tonnages for fee tracking are recorded when the revenues are received by a landfill facility.

Historically, annual percent change in revenues fluctuates by roughly 11% increases and decreases, though the average percent change from 2018 to 2022 was a 1% decline. The District anticipates a minimal annual increase in revenues reflective of an increasing disposal value projected in Appendix D.

4) Loans

The District does not have any outstanding debt due to existing loans and does not anticipate securing loans during this planning period.

Table O-4 Debt

Year Debt Was/Will be Obtained	Outstanding Balance	Lending Institution	Repayment Term (years)	Annual Debt Service (\$)
Not Applicable				

5) Other Sources of Revenue

From 2018 to 2023, the District received revenue from sale of recyclables, reimbursements, grants, other, and interest.

Recycling Revenue: The District receives revenue from the sale of collected recyclable materials. In 2022, the District received roughly \$9,300. While revenue received is dependent on market and commodity values, the District expects to continue to see revenue through the planning period. The District used the average revenue received from 2022 to 2023 as a baseline value for projections and applied a 3% inflation factor for future values. Revenue was received from 2019 to 2021 but was recorded in a different revenue allocation.

Reimbursements: Reimbursement revenues are miscellaneous monies resulting from refunds and reimbursements. The District received reimbursements in 2021 and 2023. This amount is unpredictable and not guaranteed from year to year; therefore, only actual values are reported in **Table O-5**, and no future values are projected.

Grants: Funding from grants are competitive and not guaranteed. The District received grant funding in 2021, 2022, and 2023 for \$15,000, \$85,000, and \$15,400 respectively. Grant revenue is unpredictable and not guaranteed from year to year; therefore, only actual values are reported in **Table O-5**, and no future values are projected.

Projects: Revenue received or collected by a District through a project designed to raise money for plan implementation, such as a registration fee charged by the SWMD to cover the cost of a conference sponsored by the District. In 2018 the District received \$1,115 in revenue from a project. The District does not expect to receive revenue from this source during the planning period.

Interest: The District receives interest from the accounts with which its moneys are held. Interest earned is dependent on the amount of money in the District’s general fund. As such, revenue from this source can change drastically based on financial activities in a given year. The District received an average of \$92,000 in interest annually from 2018 to 2023, with \$221,000 in interest accrued in 2023. The District used the average historic revenue received as a baseline and applied a 1% inflation factor to this source for future projections.

Other: The District receives regular revenue classified as other. The sources of revenue comprising this category are from the District sale of compost bins as well as health insurance employee pay-ins. Revenue fluctuates year-to-year, thus the historical average was held through the planning period.

Table O-5. Other Sources of Revenue

Year	Recycling Revenue	Reimbursements	Grants	Projects	Interest	Other	Total Other Revenue
Actual Values							
2018	\$1,792	\$0	\$0	\$1,155	\$94,439	\$7,808	\$105,195
2019	\$0	\$0	\$0	\$0	\$122,177	\$13,747	\$135,925
2020	\$0	\$0	\$0	\$0	\$47,565	\$11,868	\$59,433
2021	\$0	\$4,500	\$15,000	\$0	\$3,963	\$15,644	\$39,108
2022	\$9,381	\$0	\$85,000	\$0	\$60,110	\$4,575	\$159,067
2023	\$12,164	\$7,830	\$15,400	\$0	\$221,342	\$7,341	\$264,077
Projected Values							
2024	\$10,772	\$0	\$0	\$0	\$91,600	\$10,164	\$112,536
2025	\$11,096	\$0	\$0	\$0	\$92,516	\$10,164	\$113,775
2026	\$11,428	\$0	\$0	\$0	\$93,441	\$10,164	\$115,033
2027	\$11,771	\$0	\$0	\$0	\$94,375	\$10,164	\$116,310
2028	\$12,124	\$0	\$0	\$0	\$95,319	\$10,164	\$117,607
2029	\$12,488	\$0	\$0	\$0	\$96,272	\$10,164	\$118,924
2030	\$12,863	\$0	\$0	\$0	\$97,235	\$10,164	\$120,262
2031	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2032	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2033	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2034	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2035	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2036	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2037	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2038	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2039	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620
2040	\$13,249	\$0	\$0	\$0	\$98,207	\$10,164	\$121,620

Note: Projections flatline after the sixth year of the planning period.

Source(s) of Information: CY 2018-2023 revenues sourced from Geauga-Trumbull SWMD Quarterly Fee Reports. All other amounts are projections.

6) Summary of District Revenues

Table O-6 Summary of District Revenues

Year	Designation Fees	Other Revenue	Total Revenue
Actual			
2018	\$1,818,542	\$105,195	\$1,923,737
2019	\$1,683,641	\$135,925	\$1,819,565
2020	\$1,842,187	\$59,433	\$1,901,621
2021	\$1,656,354	\$39,108	\$1,695,461
2022	\$1,718,368	\$159,067	\$1,877,434
2023	\$1,716,777	\$264,077	\$1,980,854
Projected			
2024	\$1,700,875	\$112,536	\$1,813,411
2025	\$1,728,027	\$113,775	\$1,841,802
2026	\$1,755,957	\$115,033	\$1,870,990
2027	\$2,433,680	\$116,310	\$2,549,990
2028	\$2,474,028	\$117,607	\$2,591,635
2029	\$2,515,580	\$118,924	\$2,634,504
2030	\$2,558,388	\$120,262	\$2,678,650
2031	\$2,602,507	\$121,620	\$2,724,127
2032	\$2,623,667	\$121,620	\$2,745,286
2033	\$2,623,667	\$121,620	\$2,745,286
2034	\$2,623,667	\$121,620	\$2,745,286
2035	\$2,623,667	\$121,620	\$2,745,286
2036	\$2,623,667	\$121,620	\$2,745,286
2037	\$2,623,667	\$121,620	\$2,745,286
2038	\$2,623,667	\$121,620	\$2,745,286
2039	\$2,623,667	\$121,620	\$2,745,286
2040	\$2,623,667	\$121,620	\$2,745,286

Note: Projections flatline after the sixth year of the planning period.

Source(s) of Information: CY 2018-2023 revenues sourced from Geauga-Trumbull SWMD Quarterly Fee Reports. All other amounts are projections.

Table O-6 shows the total amount of revenue generated by each method for each year of the planning period. The District’s primary funding mechanism is through designation fees. The District receives revenue from a variety of other sources such as the sales of recycling, interest, and other miscellaneous streams. Together, these “other” sources of revenue make up on average 7% of the District’s annual income. The District flatlined the projected revenues in 2032.

B. Cost of Implementing Plan

The expense line items in **Table O-7** are the same as those that the District uses to report expenses for the quarterly fee report.

Table O-7 Years 2018 – 2025

Category/Program	2018	2019	2020	2021	2022	2023	2024	2025
1. Plan Monitoring/Prep.	\$27,130	\$0	\$0	\$0	\$0	\$24,760	\$36,880	\$0
a. Plan Preparation	\$27,130	\$0	\$0	\$0	\$0	\$24,760	\$36,880	
b. Plan Monitoring	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
c. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2. Plan Implementation	\$1,263,948	\$1,662,302	\$1,538,763	\$2,495,677	\$2,273,387	\$2,182,897	\$2,275,858	\$2,288,455
a. District Administration	\$449,023	\$618,229	\$417,369	\$384,206	\$461,978	\$487,741	\$502,374	\$517,445
Personnel	\$246,579	\$378,878	\$279,837	\$232,054	\$305,088	\$330,822	\$340,747	\$350,969
Office Overhead	\$159,098	\$180,510	\$137,531	\$147,875	\$123,296	\$147,600	\$152,028	\$156,589
Other	\$43,346	\$58,841	\$0	\$4,278	\$33,594	\$9,319	\$9,598	\$9,886
b. Facility Operation	\$0	\$111,622	\$202,967	\$229,673	\$202,875	\$508,242	\$553,123	\$574,032
MRF/Recycling Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Compost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Special Waste	\$0	\$111,622	\$202,967	\$229,673	\$202,875	\$508,242	\$553,123	\$574,032
c. Landfill Closure/Post-Closure	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
d. Recycling Collection	\$502,489	\$551,516	\$595,658	\$588,491	\$980,525	\$844,217	\$923,605	\$949,709
Curbside	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Drop-off	\$484,489	\$541,861	\$588,546	\$588,491	\$974,525	\$844,217	\$923,605	\$949,709
Combined Curbside/Drop-off	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Multi-family	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Business/Institutional	\$0	\$0	\$4,612	\$0	\$0	\$0	\$0	\$0
Other	\$18,000	\$9,655	\$2,500	\$0	\$6,000	\$0	\$0	\$0
e. Special Collections	\$205,517	\$150,149	\$140,893	\$212,174	\$145,443	\$178,972	\$218,171	\$162,376
Tire Collection	\$70,728	\$90,095	\$85,048	\$87,390	\$104,566	\$112,787	\$150,000	\$150,000
HHW Collection	\$87,731	\$57,398	\$3,480	\$72,977	\$0	\$0	\$0	\$0
Electronics Collection	\$42,913	\$2,655	\$29,459	\$43,454	\$33,236	\$54,520	\$56,155	\$0
Appliance Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Collection Drives	\$4,146	\$0	\$22,906	\$8,353	\$7,642	\$11,666	\$12,016	\$12,376
f. Yard Waste/Other Organics	\$3,750	\$3,750	\$0	\$0	\$0	\$7,309		
g. Education/Awareness	\$101,852	\$152,985	\$38,377	\$13,962	\$54,704	\$108,709	\$43,586	\$44,893
Education Staff	\$61,563	\$114,361	\$29,124	\$0	\$752	\$5,824	\$5,999	\$6,179
Advertisement/Promotion	\$40,289	\$38,625	\$8,053	\$7,642	\$36,492	\$102,885	\$37,587	\$38,715
Other	\$0	\$0	\$1,200	\$6,321	\$17,460	\$0		\$0
h. Recycling Market Development	\$0	\$0	\$7,400	\$0	\$11,153	\$8,378	\$10,000	\$10,000
General Market Development Activities	\$0	\$0	\$7,400	\$0	\$11,153	\$8,378	\$10,000	\$10,000
ODNR pass-through grant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
i. Service Contracts	\$0	\$74,051	\$106,200	\$1,049,851	\$391,717	\$14,139	\$0	\$0
j. Feasibility Studies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
k. Waste Assessments/Audits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
l. Dump Cleanup	\$0	\$0	\$27,000	\$6,590	\$9,001	\$7,693	\$10,000	\$10,000
m. Litter Collection/Education	\$1,317	\$0	\$2,900	\$10,730	\$15,990	\$17,497	\$15,000	\$15,000
n. Emergency Debris Management	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,000
o. Loan Payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
p. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Category/Program	2018	2019	2020	2021	2022	2023	2024	2025
4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5. Well Testing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6. Out-of-State Waste Inspection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7. Open Dump, Litter Law Enforcement	\$60,737	\$50,000	\$52,099	\$50,354	\$51,517	\$38,750	\$50,000	\$50,000
a. Health Departments	\$54,641	\$50,000	\$50,000	\$50,000	\$50,000	\$38,750	\$50,000	\$50,000
b. Local Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
c. Other	\$6,096	\$0	\$2,099	\$354	\$1,517	\$0	\$0	\$0
8. Health Department Training	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Expenses	\$1,351,815	\$1,712,302	\$1,590,862	\$2,546,031	\$2,324,904	\$2,246,407	\$2,362,738	\$2,338,455

Table O-7 Years 2026 – 2033

Category/Program	2026	2027	2028	2029	2030	2031	2032	2033
1. Plan Monitoring/Prep.	\$7,500	\$7,500	\$38,320	\$38,320	\$7,500	\$7,500	\$7,500	\$38,320
a. Plan Preparation	\$0	\$0	\$30,820	\$30,820	\$0	\$0	\$0	\$30,820
b. Plan Monitoring	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
c. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2. Plan Implementation	\$2,429,188	\$2,486,657	\$2,567,102	\$2,670,159	\$2,743,271	\$2,829,001	\$2,851,627	\$2,856,627
a. District Administration	\$532,968	\$548,957	\$565,426	\$591,989	\$609,748	\$628,041	\$628,041	\$628,041
Personnel	\$361,498	\$372,343	\$383,514	\$404,619	\$416,758	\$429,260	\$429,260	\$429,260
Office Overhead	\$161,287	\$166,126	\$171,109	\$176,243	\$181,530	\$186,976	\$186,976	\$186,976
Other	\$10,183	\$10,488	\$10,803	\$11,127	\$11,461	\$11,805	\$11,805	\$11,805
b. Facility Operation	\$595,783	\$618,413	\$641,961	\$666,464	\$691,964	\$718,505	\$746,132	\$746,132
MRF/Recycling Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Compost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Special Waste	\$595,783	\$618,413	\$641,961	\$666,464	\$691,964	\$718,505	\$746,132	\$746,132
c. Landfill Closure/Post-Closure	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
d. Recycling Collection	\$981,450	\$1,018,530	\$1,062,136	\$1,094,000	\$1,126,820	\$1,160,624	\$1,160,624	\$1,160,624
Curbside	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Drop-off	\$981,450	\$1,018,530	\$1,062,136	\$1,094,000	\$1,126,820	\$1,160,624	\$1,160,624	\$1,160,624
Combined Curbside/Drop-off	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Multi-family	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Business/Institutional	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
e. Special Collections	\$162,747	\$163,130	\$163,524	\$163,929	\$164,347	\$164,778	\$164,778	\$164,778
Tire Collection	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
HHW Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Electronics Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Appliance Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Collection Drives	\$12,747	\$13,130	\$13,524	\$13,929	\$14,347	\$14,778	\$14,778	\$14,778
f. Yard Waste/Other Organics	\$0	\$0	\$0	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
g. Education/Awareness	\$46,240	\$47,627	\$49,056	\$53,778	\$55,391	\$57,053	\$57,053	\$57,053

Category/Program	2026	2027	2028	2029	2030	2031	2032	2033
Education Staff	\$6,364	\$6,555	\$6,752	\$6,954	\$7,163	\$7,378	\$7,378	\$7,378
Advertisement/Promotion	\$39,876	\$41,072	\$42,304	\$46,824	\$48,228	\$49,675	\$49,675	\$49,675
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
h. Recycling Market Development	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
General Market Development Activities	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
ODNR pass-through grant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
i. Service Contracts	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
j. Feasibility Studies	\$25,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
k. Waste Assessments/Audits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
l. Dump Cleanup	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
m. Litter Collection/Education	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
n. Emergency Debris Management	\$0	\$5,000	\$0	\$5,000	\$0	\$5,000	\$0	\$5,000
o. Loan Payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
p. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5. Well Testing	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6. Out-of-State Waste Inspection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7. Open Dump, Litter Law Enforcement	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
a. Health Departments	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
b. Local Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
c. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8. Health Department Training	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Expenses	\$2,486,688	\$2,544,157	\$2,655,422	\$2,758,479	\$2,800,771	\$2,886,501	\$2,909,127	\$2,944,947

Table O-7 Years 2034– 2040

Category/Program	2034	2035	2036	2037	2038	2039	2040
1. Plan Monitoring/Prep.	\$38,320	\$7,500	\$7,500	\$7,500	\$38,320	\$38,320	\$7,500
a. Plan Preparation	\$30,820	\$0	\$0	\$0	\$30,820	\$30,820	\$0
b. Plan Monitoring	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500	\$7,500
c. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2. Plan Implementation	\$2,851,627	\$2,856,627	\$2,851,627	\$2,856,627	\$2,851,627	\$2,856,627	\$2,851,627
a. District Administration	\$628,041	\$628,041	\$628,041	\$628,041	\$628,041	\$628,041	\$628,041
Personnel	\$429,260	\$429,260	\$429,260	\$429,260	\$429,260	\$429,260	\$429,260
Office Overhead	\$186,976	\$186,976	\$186,976	\$186,976	\$186,976	\$186,976	\$186,976
Other	\$11,805	\$11,805	\$11,805	\$11,805	\$11,805	\$11,805	\$11,805
b. Facility Operation	\$746,132	\$746,132	\$746,132	\$746,132	\$746,132	\$746,132	\$746,132
MRF/Recycling Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Compost	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Special Waste	\$746,132	\$746,132	\$746,132	\$746,132	\$746,132	\$746,132	\$746,132
c. Landfill Closure/Post-Closure	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Category/Program	2034	2035	2036	2037	2038	2039	2040
d. Recycling Collection	\$1,160,624	\$1,160,624	\$1,160,624	\$1,160,624	\$1,160,624	\$1,160,624	\$1,160,624
Curbside	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Drop-off	\$1,160,624	\$1,160,624	\$1,160,624	\$1,160,624	\$1,160,624	\$1,160,624	\$1,160,624
Combined Curbside/Drop-off	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Multi-family	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Business/Institutional	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0
e. Special Collections	\$164,778	\$164,778	\$164,778	\$164,778	\$164,778	\$164,778	\$164,778
Tire Collection	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
HHW Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Electronics Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Appliance Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Collection Drives	\$14,778	\$14,778	\$14,778	\$14,778	\$14,778	\$14,778	\$14,778
f. Yard Waste/Other Organics	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
g. Education/Awareness	\$57,053	\$57,053	\$57,053	\$57,053	\$57,053	\$57,053	\$57,053
Education Staff	\$7,378	\$7,378	\$7,378	\$7,378	\$7,378	\$7,378	\$7,378
Advertisement/Promotion	\$49,675	\$49,675	\$49,675	\$49,675	\$49,675	\$49,675	\$49,675
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0
h. Recycling Market Development	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
General Market Development Activities	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
ODNR pass-through grant	\$0	\$0	\$0	\$0	\$0	\$0	\$0
i. Service Contracts	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
j. Feasibility Studies	\$0	\$0	\$0	\$0	\$0	\$0	\$0
k. Waste Assessments/Audits	\$0	\$0	\$0	\$0	\$0	\$0	\$0
l. Dump Cleanup	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
m. Litter Collection/Education	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
n. Emergency Debris Management	\$0	\$5,000	\$0	\$5,000	\$0	\$5,000	\$0
o. Loan Payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0
p. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0
3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5. Well Testing	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6. Out-of-State Waste Inspection	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7. Open Dump, Litter Law Enforcement	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
a. Health Departments	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000	\$50,000
b. Local Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0
c. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0
8. Health Department Training	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10. Compensation to Affected Community (ORC Section 3734.35)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Expenses	\$2,939,947	\$2,914,127	\$2,909,127	\$2,914,127	\$2,939,947	\$2,944,947	\$2,909,127

1. Plan Monitoring/Prep.

1.a Plan Preparation

2018 – 2023 – Actual costs include staff and contracts with outside consultants to prepare the District’s solid waste management plan updates.

2024 – 2040 – The District assumed the cost of the contract for all subsequent plan updates would be the same.

1.b Plan Monitoring

2018 – 2023 – Actual costs consultant, legal, etc. needed contract services for monitoring the plan.

2024 – 2040 – Anticipated costs outside for surveys and other needed monitoring reports.

1.c Other

2. Plan Implementation

2.a District Administration

2.a.1 Personnel

2017 – 2023 - This is the cost for payroll (one full-time coordinator, one full-time Administrative Assistant, and two full-time Facility Managers) and benefits (including PERS, Medicare, and insurance). Administrative costs include staffing time for some program costs, which are difficult to separate into their own line item. The costs of the program in 2018 through 2023 are actual expenses.

2024 – 2040 - The District expects to maintain full-time personnel structure through the planning period. A 3% inflation rate after 2024 is added to account for raises and cost of living adjustment. Expenses flatline after 2032. In 2029 funds are allocated to support a summer intern.

2.a.2 Office Overhead –

2017 – 2023 – Office rent, insurance, utilities, supplies (including magazine subscriptions, postage, reproductions, advertising, printing, etc.), office equipment, phone, billing, event registrations, conferences, and travel. The costs shown for 2018 through 2023 are actual expenses.

2024 – 2040 – Costs estimated in 2024 through 2032 are based on historical values multiplied by a 3% inflation rate. Expenses flatline after 2032. Projecting overhead costs at a 3% rate increase will allow approximately 0.8% of this line item to be set aside to help with building repairs.

2.a.3 Other

2018 – 2023 – This includes expenditures for District administration that are not represented by the other line items in this subcategory such as professional services (legal and consulting, etc.). The costs in 2018 through 2023 are actual expenses.

2024 – 2040 – Costs estimated in 2024 through 2032 are based on historical values multiplied by a 3% inflation rate. Expenses flatline after 2032. If expenses are less than budgeted figures the District may re-allocate funds to be set aside to help with building repairs.

2.b. Facility Operation –2.b.1 MRF/Recycling Center –

The District has long operated the Trumbull Recycling Center. In June of 2022, the Geauga Recycling Center opened. Both facilities provide residents the ability to drop off hard-to-recycle materials. The centers can recycle special wastes regularly throughout the year. These services are available to Geauga and Trumbull County residents only, no businesses, farms, schools, or government agencies. The costs in 2018 through 2023 are actual expenses. Expenses incurred at these centers are recorded under Special Waste below.

2.b.2 Compost – No expenses incurred or budgeted.

2.b.3 Transfer – No expenses incurred or budgeted.

2.b.4 Special Waste – This line item includes costs incurred from recycling center operation

2018 – 2023 – There is one recycling center in each County which accepts hard to recycle special wastes. Geauga Recycling Center opened in June 2022. With the second facility, program expenses increased in 2023 but so also did contracts for the processing of the HHW and electronic waste materials. The District accepts HHW, batteries, paint, electronics, and other hard to recycle materials at these facilities.

2024 – 2040 – Costs estimated in 2024 through 2032 are based on the change in cost observed in 2023. HHW is inflated at 5% annually matching the existing contract terms. All other contracts and operations are inflated at 3% annually through 2032. Expenses flatline after 2032.

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 –

2018 – 2023 – Costs relate to costs of providing the service, including labor; equipment; supplies; rental or purchase of containers; rental, purchase, and maintenance of drop-off locations. A majority of the cost incurred is from service contracts for drop-off locations.

The District offers drop-off improvement grants aimed at reducing litter and deterring contamination. Awarded amounts are recorded in this line item.

2024 – 2029 – Costs in 2024 through 2029 are actual contract costs given to the District from its new service contract beginning in 2024. An additional \$50,000 has been added on to these costs to allow for drop-off grant funding.

2030 – 2040 – Costs estimated in 2030 through 2032 are based on the previous year with a 3% inflation rate. Projections are flatlined after 2032.

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 –

2018 – 2023 – Actual costs for technical service and start-up services for recycling.

2024 – 2040 – Costs are not expected for this line item through the planning period.

2.d.6 Other –

2018 – 2023 – Actual costs for this line item.

2024 – 2040 – Costs are not expected for this line item through the planning period.

2.e. Special Collections

2.e.1. Tire Collection –

2018 – 2023 – Actual costs for tire collections, management, processing, and community tire collection funding.

2024 – 2040 – Costs estimated in 2024 through 2032 are held flat at the maximum budgeted funds for this program of \$150,000.

2.e.2. HHW Collection –

2018 – 2021 – Actual costs to implement Household Hazardous Waste Management Program at the recycling center.

2022 – 2023 – Costs for this program are re-allocated to include in special waste line item 2.b.4.

2.e.3. Electronics Collection –

2018 – 2023 – Actual costs of grants provided to political jurisdictions to implement the electronics collection events.

2024 – 2040 – Since there is a recycling center in each county, costs are reduced for the grants. Electronics will be directed to the recycling centers.

2.e.4. Appliance Collection –

2018 – 2040 – Costs are included in special waste line item, 2.b.4.

2.e.5. Other Collection Drives –

2018 – 2023 – Actual costs for other collection drives.

2024 – 2040 – Costs estimated in 2024 through 2032 are based on historical values multiplied by a 3% inflation rate. Expenses flatline after 2032.

2.f. Yard Waste/Other Organics –

2018 – 2023 – Actual costs for yard waste and other organics management assistance.

2024 – 2040 – Beginning in 2029, the District will offer \$10,000 annually in grant funds for downstream organics diversion. If expenses are less than budgeted figures the District may re-allocate funds to other programs.

2.g. Education/Awareness

2.g.1 Education Staff –

2018 – 2023 – Actual costs for this line item. The District’s Education Specialist retired in 2019. Instead of hiring another full-time employee, the District established a partnership in the fall of 2022 to subcontract with Trumbull Soil & Water Conservation District (SWCD) and Geauga Soil & Water Conservation District (SWCD) to provide educational programs in their respective territories. The Director is still providing educational and outreach programs to adults. This corresponds to the large decrease in expenses after 2019.

2024 – 2040 – Costs estimated are based on historical values multiplied by a 3% inflation rate. Expenses flatline after 2032.

2.g.2. Advertisement/Promotion -

2018 – 2023 – The costs shown are actual expenses for publications (brochures, flyers, etc.), advertising, school program activities (calendar contest, poetry contest, and recycled sculpture contest), promotional items, and Earth Day Photo contest. In 2023, the District spent \$60,000 on education post cards to send to residents.

2024 – 2040 – Costs estimated in 2024 through 2032 are based on historical values multiplied by a 3% inflation rate. Maintaining the education budget allocation at this level will support the outreach campaign. In 2029 the District expects to increase this line item by \$3,250 for improved signage at drop-offs. Expenses flatline after 2032.

2.g.3. Other –

2018 – 2023 – Actual costs for other education and awareness expenses that do not have a line item.

2024 – 2040 – Costs are not expected for this line item through the planning period

2.h.1 General Market Development Activities –

2018 – 2023 – Actual costs for market development activities.

2024 – 2040 – Held constant at \$10,000 throughout planning period.

2.h.2 ODNR pass-through grant - No expenses incurred or budgeted.

2.i Service Contracts –

2018 – 2023 – Actual costs for service contracts. 2021 through 2023 values are from the work done on the Geauga Recycling Center. The District paid the last of this balance in 2023.

2024 – 2040 – Beginning in 2026, allocated \$50,000 annually for the District to contract program implementation assistance. If expenses are less than budgeted figures the District may re-allocate funds to other programs

2.j Feasibility Studies –

2018 – 2023 – Actual costs incurred.

2024 – 2040 – In 2026, the District budgeted \$20,000 for a feasibility study on curbside recycling options throughout Geauga and Trumbull Counties. In this same year, \$5,000 is budgeted for a food waste pilot program.

2.k Waste Assessments/Audits –

2.l Dump Cleanup –

2018 – 2023 – Actual costs incurred.

2024 – 2040 – Budgeted a flat \$10,000 to go towards dump cleanups throughout the District.

2.m. Litter Collection/Education –

2018 – 2023 – Actual costs incurred.

2024 – 2040 – Budgeted a flat \$15,000 to go towards litter collection and education throughout the District.

2.n. Emergency Debris Management –

2018 – 2023 – Actual costs incurred.

2024 – 2040 – Budgeted \$5,000 beginning in 2025 every other year.

2.o. Loan Payment - No expenses incurred or budgeted.

2.p. Other – No expenses incurred or budgeted.

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 -

2018 – 2023 – Actual costs for other expenses.

2024 – 2040 – Budgeted for \$50,000 annually throughout the planning period for open dump and litter enforcement.

8. Health Department Training - No expenses incurred or budgeted

9. Municipal/Township Assistance - No expenses incurred or budgeted

Revenues and expenses may change from projections anticipated in this Plan Update. Additional revenues are not expected; however, revenues could increase or decrease from what is projected. In the event additional revenues are received, and projected expenses remain within budgeted allowances, additional revenues may be added to the carryover balance. Unless otherwise noted in the descriptions above, all projections for expenses utilize a 3% inflationary increase annually.

Nothing contained in these budget projections should be construed as a binding commitment by the District to expend a specific amount of money on a particular strategy, facility, program, and/or activity. The Board of Directors, with the advice and assistance of District staff, will review and revise the budget as needed to implement planned strategies, facilities, programs, and/or activities as effectively as possible with funds available. The District 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 District.

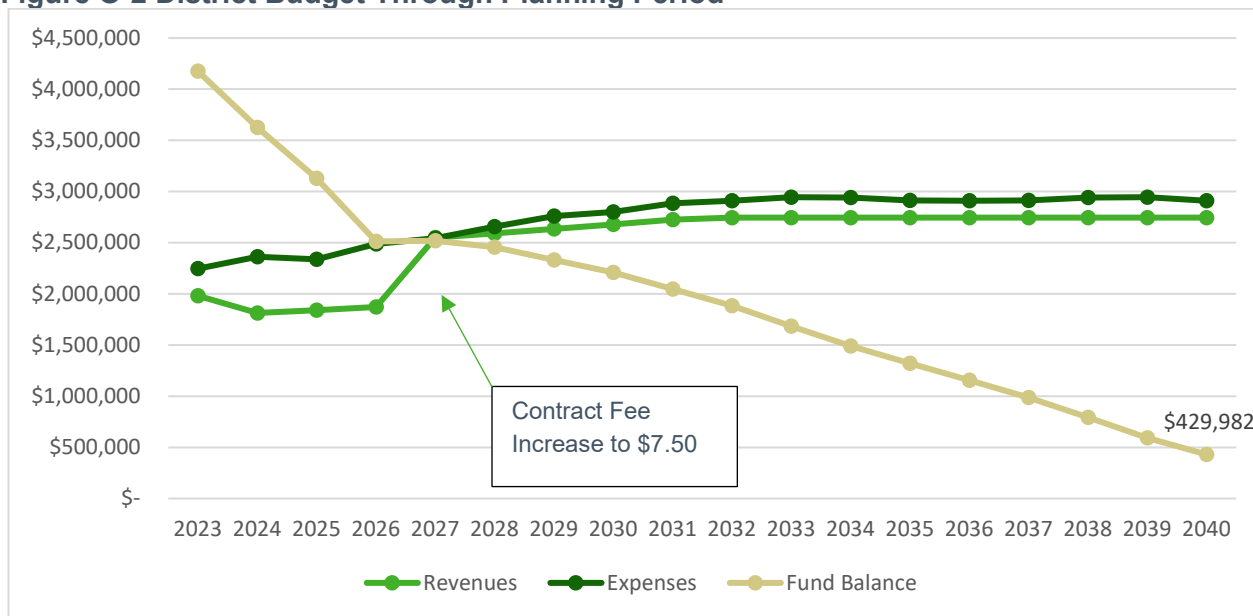
Table O-8 Budget Summary

Year	Revenue	Expenses	Annual Surplus/Deficit (\$)	Balance (\$)
2017			Ending Balance	\$4,749,583
2018	\$1,923,737	\$1,351,815	\$571,921	\$5,321,505
2019	\$1,819,565	\$1,712,302	\$107,263	\$5,428,768
2020	\$1,901,621	\$1,590,862	\$310,759	\$5,739,526
2021	\$1,695,461	\$2,546,031	-\$850,570	\$4,888,957
2022	\$1,877,434	\$2,324,904	-\$447,470	\$4,441,487
2023	\$1,980,854	\$2,246,407	-\$265,553	\$4,175,934
2024	\$1,813,411	\$2,362,738	-\$549,327	\$3,626,607
2025	\$1,841,802	\$2,338,455	-\$496,653	\$3,129,954
2026	\$1,870,990	\$2,486,688	-\$615,698	\$2,514,255
2027	\$2,549,990	\$2,544,157	\$5,833	\$2,520,089
2028	\$2,591,635	\$2,655,422	-\$63,787	\$2,456,302
2029	\$2,634,504	\$2,758,479	-\$123,975	\$2,332,327
2030	\$2,678,650	\$2,800,771	-\$122,121	\$2,210,206
2031	\$2,724,127	\$2,886,501	-\$162,374	\$2,047,831
2032	\$2,745,286	\$2,909,127	-\$163,841	\$1,883,990
2033	\$2,745,286	\$2,944,947	-\$199,661	\$1,684,329
2034	\$2,745,286	\$2,939,947	-\$194,661	\$1,489,668
2035	\$2,745,286	\$2,914,127	-\$168,841	\$1,320,827
2036	\$2,745,286	\$2,909,127	-\$163,841	\$1,156,986
2037	\$2,745,286	\$2,914,127	-\$168,841	\$988,145
2038	\$2,745,286	\$2,939,947	-\$194,661	\$793,484
2039	\$2,745,286	\$2,944,947	-\$199,661	\$593,823
2040	\$2,745,286	\$2,909,127	-\$163,841	\$429,982

Note: Projections flatline after the sixth year of the planning period.

Source(s) of Information: CY 2018-2023 revenues sourced from Geauga and Trumbull County SWMD Quarterly Fee Reports. All other amounts are projections.

Figure O-2 District Budget Through Planning Period



The District’s fund balance is expected to decrease as a result of inflation and programmatic expenditures. In 2027, the District is planning a contract fee increase from its current \$5.50 per ton to \$7.50 per ton. This will slow the declining fund balance over the planning period. However, the revenues projected and described above are intentionally conservative and expenses are intentionally projected on the higher end. The District would rather underestimate funds than overestimate.

C. Alternative Budget

The District 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.

D. Major Facility Project

The District does not anticipate any major facility projects during this planning period. In the event the District determines that the access to, and the costs for disposal become an economic burden for residents and businesses, the District reserves the right to explore the development of a major facility for waste generated in Geauga and/or Trumbull Counties.

APPENDIX P

DESIGNATION

Appendix P. Designation

A. Statement Authorizing Designation/ Precluding Designation

The Board of Directors of the Geauga-Trumbull Solid Waste Management District is authorized to establish facility designations in accordance with Section 343.013 and Section 343.014 of the Ohio Revised Code.

B. Designated Facilities

In accordance with Rule 2-2012, no person shall deliver, or cause the delivery of, any solid waste generated within the District or transported into the District to any solid waste facility other than a designated solid waste facility by the District.

Table P-1 specifies the facilities where solid waste generated within or transported into the District will be taken for disposal, transfer, resource recovery, or recycling.

Table P-1 Designated Facilities

Facility Name	County	State	Facility Type
Ohio Valley Waste Warren	Trumbull	OH	Transfer Station
Ohio Valley Waste - Youngstown	Trumbull	OH	Transfer Station
Carbon Limestone Landfill	Mahoning	OH	Landfill
Mahoning Landfill	Mahoning	OH	Landfill
Lake County Landfill	Lake	OH	Landfill
Geneva Landfill	Ashtabula	OH	Landfill
Kimble Sanitary Landfill	Tuscarawas	OH	Landfill
Countywide Recycling & Disposal	Stark	OH	Landfill
American Landfill	Stark	OH	Landfill
Lorain County Landfill Inc.	Lorain	OH	Landfill
Coshocton Landfill	Coshocton	OH	Landfill
Suburban Landfill	Perry	OH	Landfill
Pine Grove Regional	Fairfield	OH	Landfill
Athens Hocking Reclamation Center	Athens	OH	Landfill
Liberty Tire Monofill	Stark, Tuscarawas, Wayne	OH	Landfill
Richland County Transfer	Richland	OH	Transfer Station
Broadview Heights Transfer	Cuyahoga	OH	Transfer Station
Cleveland Transfer/Recycling Center	Cuyahoga	OH	Transfer Station
Glenwillow Transfer Station	Cuyahoga	OH	Transfer Station
Harvard Road Transfer	Cuyahoga	OH	Transfer Station
Akron Transfer Station	Summit	OH	Transfer Station
Kimble Transfer & Recycling	Stark	OH	Transfer Station
Hancock County Landfill	Hancock	OH	Landfill

Facility Name	County	State	Facility Type
Cambridge Transfer and Recycling	Guernsey	OH	Transfer Station
Noble Road Landfill	Richland	OH	Landfill
Seneca Landfill	Butler	PA	Landfill
Imperial Landfill	Allegheny	PA	Landfill
Tri-County Industries	Mercer	PA	Transfer Station
Valley Waste Services Transfer	Beaver	PA	Transfer Station
Short Creek Landfill	Ohio	WV	Landfill
Kimble Transfer & Recycling - Twinsburg	Summit	OH	Transfer Station
Waste Management of Ohio Inc - Chardon Hauling	Geauga	OH	Transfer Station

The District cross-referenced the above list with Ohio EPA’s licensed facilities to ensure all Ohio facilities listed above are still in operation. Out-of-state facilities are not listed on Ohio EPA’s licensed facility report. However, to the best of the District’s knowledge, the out-of-state facilities with designation from the District are still in operation. Despite the above facilities being designated by the District, it does not mean the District consistently sends waste to all of the facilities above.

Waiver Process for the Use of Undesignated Facilities

Any person or applicant may request a waiver from the Board authorizing the delivery of all or any portion of the solid waste generated within the District to a solid waste facility other than a designated solid waste facility. The Board may grant a waiver from the obligation to deliver solid waste generated within the District to a designated solid waste facility if the Board finds issuance of a waiver for the solid waste, the subject of the waiver request:

- Is not inconsistent with projections contained in the Plan;
- will not adversely affect the implementation and financing of the Plan pursuant to the implementation schedule contained in the Plan; and
- assures the maximum feasible utilization of existing in-District designated solid waste facilities.

Any person or applicant who submits a waiver request pursuant to this rule shall submit documents and information for consideration by the Board that support the issuance of the requested waiver. Any waiver granted by the Board shall be the subject of a waiver agreement between the Board and the applicant setting forth the terms of such waiver and waiver fee, if any.

C. Documents

APPENDIX Q

DISTRICT RULES

Appendix Q.

District Rules

A. Existing Rules

In accordance with the Ohio Revised Code Section 343.01(G)(1)(2)(3) and (4), the Board of Directors of the Geauga-Trumbull Solid Waste Management District is authorized to make, publish and enforce rules, to the extent any such rules are determined by the Board of Directors from time to time to be necessary or desirable to implement any provision or to accomplish any objective of this solid waste management Plan or amended Plan. The Board of Directors adopted the following rules:

Rule 1 – 2012: Definitions

"Applicant" means a person proposing to construct or modify a solid waste facility that requires a determination by the Board that a proposal to construct or modify a solid waste facility complies with the Plan; or a person requesting a waiver by the Board from the application of a rule adopted by the Board or from the obligation to deliver solid waste generated with the District to a designated solid waste facility.

"Board" and **"Board of Directors of the District"** means the Board of County Commissioners of Geauga and Trumbull Counties 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 education, 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.

"Contract Fee" means a fixed charge established by the District and paid by any Designated Solid Waste Facility's receipt of all unwanted material generated within or transported into, the District and accepted by the facility for disposal or transfer.

"Designated Solid Waste Facility" means those solid waste facilities designated in the initial or amended Plan or as may hereafter become designated pursuant to Sections 343.013, 343.014, or 343.015 of the Ohio Revised Code.

"District" means the Geauga-Trumbull Solid Waste Management District operated under the direction of the Board of Directors. Includes all territory of Geauga and Trumbull Counties.

"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 commercial and 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, transferring, 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 sighting strategy contained in the Plan.

"Generator" means a person who produces or creates solid waste.

"Hazardous Waste" means solid waste, which, because of its listing, composition, or characteristics is a hazardous waste (as defined in the Resource Conservation and Recovery Act, 42 U.S. 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 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.

"Person" means a natural person, partnership, association, firm, corporation, Limited Liability Company, Municipal Corporation, township, government unit, or other political subdivision.

"Plan" means the solid waste management plan of the District approved by the Director of the Ohio Environmental Protection Agency dated December 1993 and 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 noninfectious by sterilization, incineration, or other equally effective processing technique.

"Process" or **"Processed"** means incineration for resource recovery of solid waste or removal of recyclable materials other than source separation at a designated solid waste facility.

"Recyclable Material(s)" means solid waste that is, or maybe, collected, sorted, cleansed, treated, and 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 of 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 the 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 accept solid waste.

"Solid Waste" shall be defined as having the same definition as set forth in Ohio Revised Code Section 3734.01 as it currently exists and as it may be amended hereafter. Notwithstanding the foregoing, the term SOLID WASTE shall include but is not limited to industrial, commercial, and residential garbage, tires, combustible and non-combustible material, street dirt and debris, and shall include construction and demolition debris and other exempt.

"Solid Waste Collection Service" means the process, system, or service, of collecting solid waste and/or recyclables from a generator.

"Solid Waste Collection Facility" means any site, location, tract of land, installation, or building used for the collection of solid wastes including recyclable materials.

"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 3745-27-41 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 a 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 including collection, processing, and/or storage.

"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 where generated for 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 that consists of sludge, processed infectious/pathological or biological waste, ash residue, contaminated soil, and other materials requiring additional handling or treatment prior to disposal.

"Solid Waste Transporter (SWT)" shall be defined as a person or company who engages in the enterprise of collection, transportation by truck, or other hauling vehicle that uses the public roadways, and unloading of solid waste, and recyclables, and who possesses all required licenses and registrations from local, state, and federal governmental entities and authorities as appropriate and relevant.

"White Goods" means a portion of solid waste consisting of large appliances (i.e. weighing more than fifty (50) pounds) including the following: (i) air conditioners; (ii) clothes and drying machines; (iii) dishwashers; (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 2 – 2012: Delivery of Solid Waste to Designated Facilities

Except as otherwise permitted by Rule, no person shall deliver, or cause the delivery of, any solid waste generated within the District or transported into the District to any solid waste facility other than a designated solid waste facility by the District

Rule 3 – 2012: Delivery of Recyclable Materials Generated Within or Transported into Jurisdiction of the District

All source-separated recyclable materials shall be delivered for recycling to a designated solid waste recycling facility, designated legitimate recycling facility, or designated resource recovery facility.

Rule 4 - 2012: Acceptance of Source Separated Recyclable Materials

No person, other than a person operating a solid waste recycling facility, legitimate recycling facility, or resource recovery facility, may accept source-separated recyclable materials from a generator unless such solid waste recycling facility, legitimate recycling facility, or resource recovery facility is designated by the Board. This rule shall not apply to a charitable organization.

Rule 5 - 2012: Prohibition on Disposal of Source Separated Solid Waste Recyclable Material

No person shall deliver source-separated recyclable materials for disposal at a solid waste disposal facility without the prior written consent of the Board.

Rule 6 - 2012: Prohibition on Disposal of Processed Solid Waste Recyclable Material

No person, without the prior written consent of the Board, shall deliver for disposal at a solid waste disposal facility, solid waste recyclable material that has been separated, processed, or recycled at a solid waste recycling facility, legitimate recycling facility, or resource recovery facility.

Rule 7 - 2012: Delivery of White Goods

No person shall deliver any white goods for disposal or recycling except as in compliance with the Code of Federal Regulations, 40 CFR 82.152-156.

Rule 8-2012: Waiver from Designation

Any person or applicant may request a waiver from the Board authorizing the delivery of all or any portion of the solid waste generated within the District to a solid waste facility other than a designated solid waste facility. The Board may grant a waiver from the obligation to deliver solid waste generated within the District to a designated solid waste facility if the Board finds issuance of a waiver for the solid waste, the subject of the waiver request: (a) is not inconsistent with projections contained in the Plan; (b) will not adversely affect

the implementation and financing of the Plan pursuant to the implementation schedule contained in the Plan; and (c) assures the maximum feasible utilization of existing in-District designated solid waste facilities. Any person or applicant who submits a waiver request pursuant to this rule shall submit documents and information for consideration by the Board that support the issuance of the requested waiver. Any waiver granted by the Board shall be the subject of a waiver agreement between the Board and the applicant setting forth the terms of such waiver and waiver fee, if any.

Rule 9-2012: Registration of Solid Waste Transporters

All solid waste transporters, as defined in district definitions doing business within the borders of the Geauga-Trumbull Solid Waste Management District shall register with the District on an annual basis. Registration will be on forms provided by the District and must be completed in full. Solid waste transporters shall update registration information annually or as requested by the District.

Rule 10-2012: Commingled Loads Hauled by Registered Solid Waste Transporters

Registered solid waste transporters shall not combine waste or recyclables generated within the jurisdiction of the Board with any other solid waste districts as defined by the ORC 343.

Rule 11 - 2012: Enforcement


The violation or threatened violation by any person, municipal corporation, township, or other political subdivision of any rule promulgated by the Board pursuant to this Plan or amended Plan shall be referred to the Geauga or Trumbull County Prosecuting Attorney who shall take such action as may be authorized by Ohio law including, but not limited to, Sections 343.03 and 343.99 of the Ohio Revised Code.

Rule 12 - 2012: Adoption: Savings Clause

- A. Following the adoption by the Board and upon the effective date of the Rules, all rules incorporated herewith shall be in effect.
- B. Notwithstanding (A), this Rule shall have no effect on existing litigation or on any action or proceeding pending on the effective date of these Rules, or any enforcement involving violation of previous rules.
- C. If any Rule, or part thereof, shall be adjudged or declared by any court of The United States to be unconstitutional or invalid, such judgment shall not affect the validity of the remaining Rules. Should any Rule, or part thereof, be rendered invalid due to any existing or subsequent enacted legislation, such invalidation of any Rule, or part thereof shall not affect the validity of the remaining Rules.

B. Proposed Rules

The Geauga-Trumbull Solid Waste Management District Board of Directors reserves the right to promulgate rules in accordance with ORC 343.01(G) to assist in implementing any or all strategies necessary to achieve the management of goals of this amended plan. The Board of Directors does not intend to adopt additional rules during this planning cycle. However, in the event it is determined necessary, the Policy Committee upon recommendation to the Board of County Commissioners, reserves the right to adopt any such rules as authorized by ORC 3734.53 that will support implementation of the Plan.



APPENDIX R
BLANK SURVEY FORMS AND RELATED
INFORMATION

Appendix R.

Blank Survey Forms and Related Information



Geauga-Trumbull Solid Waste Management District

Dear Commercial Business,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Geauga-Trumbull Solid Waste Management 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 businesses recycled in the Geauga-Trumbull Solid Waste Management District and Ohio in 2022. Your company's survey response **will not** be reported individually; all data will be summarized by the North American Industry Classification System (**NAICS**) category.

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 Geauga-Trumbull Solid Waste Management District to contact you in the future to discuss your recycling needs.

Instructions for completing Table B:

Table B provides a list of common materials that are recycled by commercial businesses in 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 business 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. Some of the listed materials are broad categories. For example, "Plastics" includes plastics #1-7, plastic films etc. Please refer to the "**Materials Cheat Sheet**" attached to this document for examples of materials and definitions.

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 Geauga-Trumbull Solid Waste Management District may also be able to provide you with assistance.

Thank you again for taking the time to complete this survey. Options for returning completed survey include: email, direct phone call, fax, or USPS mail. Please feel free to contact us with any questions.

Geauga-Trumbull Solid Waste Management District
5138 Enterprise Boulevard, Warren, Ohio 44481-8705
Email: jenn@startrecycling.com
Phone: (330) 675-7967 **Fax:** (330) 675-2672

Materials Cheat Sheet

Food

- Compostable food waste
- Food donations

Glass

- Bottles (any color)
- Jars

Ferrous Metals

- Mild Steel - Cast Iron
- Carbon Steel - Wrought Iron

Non-Ferrous Metals

- Aluminum - Lead
- Copper - Silver
- Brass - Misc. Scrap Metals

All Other Paper

- Office paper - Telephone Books
- Paperboard - Magazines
- Newspapers - Catalogs
- Folders - Junk Mail

Plastics

- Plastics #1-7 - Shrink Wrap
- Plastic Bottles - Plastic Films
- Plastic Jugs - Coat Hangers

Textiles

- Fabrics - Carpet
- Clothes

Wood

- Bark - Scrap Wood
- Woodchips - Shipping Pallets
- Sawdust - Boards

Commingled Recyclables - This is a mix of several different materials that are placed into one container and hauled for recycling. It can include all or a combination of the materials listed above.

Examples of materials that fall under "Other" - Appliances - Household Hazardous Waste - Used Motor Oil - Electronics - Scrap Tires - Dry Cell Batteries - Any other solid waste that is recycled at your facility

Estimating recycling tonnages – if you are not able to obtain exact tonnages of materials recycled, there are numerous ways to estimate the amount of material recycled in any given year. Below is a common formula that may assist you with your estimations:

Material Type	Density (lb/cu yd)
Mixed Paper Recycling	484
Bottles and Cans	200
Single Stream Recycling	139
Cardboard	100

- (size of container (in cubic yards) X number of collections per month X 12) X density (see table above) = Total Pound per Year
- 2,000 pounds = 1 ton

For more assistance, please contact us!

Table A: Company Information			
Company Name:		County:	Store I.D.:
Address:		City:	Zip:
Contact Person:			Title:
Email:			Telephone:
Primary NAICS:		Secondary NAICS:	Number of Employees:
Would you like to be contacted by the solid waste management district for recycling assistance?			Yes <input type="checkbox"/> No <input type="checkbox"/>

Table B: Quantities of Recycled Materials			
Recyclable Material Category	Amount Recycled in 2022	Units	Name of hauler or processor that takes the material/ other comments
Appliances/ White Goods:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Household Hazardous Waste:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Used Motor Oil:		<input type="checkbox"/> gallons	
Electronics:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Scrap Tires:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> tires	
Dry Cell Batteries:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Lead- Acid Batteries:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Food:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Glass:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Ferrous Metals:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Non-Ferrous Metals:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Corrugated Cardboard:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
All Other Paper:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Plastics:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Textiles:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Wood:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Rubber:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Commingled Recyclables:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	
Yard Waste:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd ³	

APPENDIX S

SITING STRATEGY

Appendix S. Siting Strategy

The District will rely upon the Ohio EPA siting strategy contained in Ohio Administrative Code 3745-27, 3745-30, and 3745-37. The District does not plan to site any new facilities throughout this planning period.

DRAFT



APPENDIX T

MISCELLANEOUS PLAN DOCUMENTS

Appendix T. Miscellaneous Plan Documents

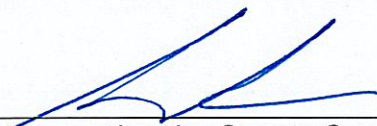

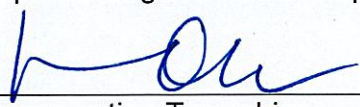
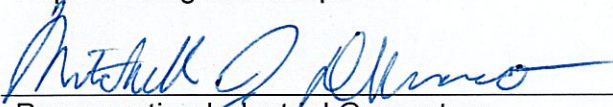
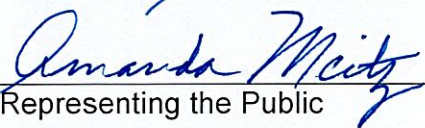

During the process of preparing a plan, the policy committee signs three official documents certifying the plan. These documents are as follows:

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 4.1.
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 Format 4.1.
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).

Certification Statement for the Draft Plan

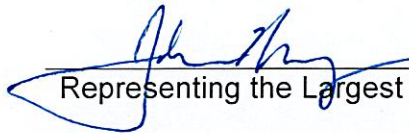
We as members of Geauga-Trumbull Joint Solid Waste Management District Policy Committee do hereby certify that to the best of our knowledge and belief, the statements, demonstrations and all accompanying materials that comprise the draft District Solid Waste Management Plan Update (2026-2040), and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of the District for the fifteen year period covered by the Plan Update are accurate and in compliance with the requirements in the District Solid Waste Management Plan Format, version 4.1.

GEAUGA COUNTY REPRESENTATIVES


	6-5-24
Representing the County Commissioners	Date Signed
Representing the Largest City	Date Signed
	6-5-24
Representing the Health Department	Date Signed
	6-5-2024
Representing Townships	Date Signed
	6-5-2024
Representing Industrial Generators	Date Signed
	6-5-2024
Representing the Public	Date Signed
	6.5.2024
Representing Citizen	Date Signed

TRUMBULL COUNTY REPRESENTATIVES


Representing the County Commissioners Date Signed

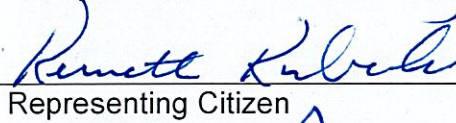
 6-5-2024
Representing the Largest City Date Signed


Representing the Health Department Date Signed

 6/5/2024
Representing Townships Date Signed

 6/5/2024
Representing Industrial Generators Date Signed

 6/5/2024
Representing the Public Date Signed

 6-5-2024
Representing Citizen Date Signed

 6-5-2024
Representing Public At Large Date Signed

APPENDIX U

RATIFICATION RESULTS

Appendix U. Ratification Results

This is updated after ratification and has been intentionally left blank.

DRAFT

APPENDIX V
INVENTORY OF OPEN DUMPS AND OTHER
DISPOSAL FACILTIES

Appendix V. Inventory of Open Dumps and Other Disposal Facilities

The District funds health departments from both Geauga and Trumbull Counties. The health departments keep record of nuisance and open dump sites that are reported. Below are the inventories of open and nuisance dumps in Geauga and Trumbull Counties.

Geauga County

Nuisance Status Report

ID #	Complainant	Location Address	Program / Complaint Description	PS / Insp.	Date Rcv Return Date Orders Due	Insp. Date / Date Completed	Action / Final Disposition
20210106	FETHEROFF, EDITH	14744 EDGEWATER NOVELTY, OH 44072	NUISANCE-SOLID WASTE RENTAL PROPERTY AT 14749 LONGVIEW DR NEWBURY, OH. THIS PROPERTY HAS BEEN INVATED WITH RATS. I HAVE HIRED AN EXTERMINATOR. HOWEVER, THE PROPERTY IN FRONT OF ME SEEMS TO BE THE CAUSE. THE COUPLE ARE OLDER AND THERE IS STUFF EVERYWHERE.	EDR	01/05/2022 // //	// //	
20210107	STEPHEN CTUNVALSEN	12765 MAYFIELD RD CHARDON, OH 44024	NUISANCE-SOLID WASTE TIRES/ JUNK EVERYWHERE. TIRES BURIED ON PROPERTY AND USED AS LANDFILL..8/3/2021	004 EDR	01/07/2022 // //	// //	

TOTALS: 2

20220136	TOUTANT, JAMES	10539 CHARDON RD. CHARDON, OH 44024	NUISANCE-SOLID WASTE TENANT IS CRUSHING CARS, DIGGING HOLES AND BURYING POTENTIALLY HAZARDOUS WASATE, OIL WASTE AND OIL FILTERS.	004 MEC	06/21/2022 // //	09/14/2022 //	NUISANCE INVESTIGATION-FOLLOW UP
20220135	UNKNOWN-	8281 PLANK RD. CHARDON, OH 44024	NUISANCE-SOLID WASTE DUMPING AND BURYING OF FARM ANIMALS NEAR POND	015 MEC	07/05/2022 // //	// //	
20220134	MUTTER, KURT	200 BERKSHIRE DR. CHARDON, OH 44024	NUISANCE-SOLID WASTE NEIGHBOR DUMPING USED VEHICLE WASTE AND USING AS A SCRAP/JNK YARD. STORM WATER DRAINS INTO AQUILLA LAKE.	017 MEC	07/11/2022 // //	09/14/2022 //	FIELD CONSULTATION This is not a solid waste nusiance complaint
20220132	PRINKEY, ANGELA	12324 PRINCETON RD. HUNSTBURG, OH 44046	NUISANCE-SOLID WASTE TRASH	008 MEC	07/13/2022 // //	// //	
20220139	MCMULLEN, IRENE	12268 VALLEY VISTA CHESTERLAND, OH 44024	NUISANCE-SOLID WASTE CONCRETE BEING DUMPED IN A HILL, THERE IS CONCERN THAT THERE IS POSSIBILITY OF ASBESTOS IN OLD CONCRETE. COMPLAINT CAME VIA EMAIL FROM LISA KALAS LKALAS@GEAUGA.OH.GOV	MEC	11/08/2022 // //	// //	

TOTALS: 5

Trumbull County

Selected	Case Number	Case Date	Property Address	Violator Name	Location of Violation	Nature of Complaint	Assigned To	Status	Edit/View
<input type="checkbox"/>	2693	08/25/2022			Pine St	open dumping--tires, mattresses. no address "drive down the road" also stated calling Mayor's office...	Marlin Bartholomew	Closed	
<input type="checkbox"/>	2566	08/04/2022	3390 YOUNGSTOWN	Ridgeview Plaza	3390 Youngstown Rd., SE	r/d, open dumping, 5 yard dumpster appears to belong to 3390 Youngstown Rd., but the furniture, tv's, etc are on 1923 Ridge Rd.	Marlin Bartholomew	Closed	
<input type="checkbox"/>	2485	07/25/2022			Wick/Willard SE	see attached paperwork--house at intersection, high grass, vehicle present, open dumping of construction material	Marlin Bartholomew	Closed	

1

Records 1 to 11 (of 11)

1

DRAFT

Selected	Case Number	Case Date	Property Address	Violator Name	Location of Violation	Nature of Complaint	Assigned To	Status	Edit/View
<input type="checkbox"/>	2415	07/06/2022	1102 MAIN SW	SC	1102 Main St SW	open dumping--driveway...mattress, tires etc...condemned/demo list placed on h/g list	Robbie Newell	Closed	
<input type="checkbox"/>	2386	06/29/2022	2147 YOUNGSTOWN	George Papalios	2147 Youngstown Rd., SE	2147 Youngstown Rd is experiencing open dumping. Owner then took mattresses from his property and placed them onto Hazelwood (unwrapped).	Marlin Bartholomew	Closed	
<input type="checkbox"/>	2070	05/25/2022	722 WOODLAND	Wm. Murphy, Jr.	722 Woodland NE	vacant--OPEN-- ppl in/out, open dumping of electronics etc, graffiti	Tony Angelo	CONDEMNED/DEMO LIST	
<input type="checkbox"/>	1970	05/12/2022			across street from 1776 Cleveland St., SW	open dumping; burned structure--children playing	Marlin Bartholomew	Closed	
<input type="checkbox"/>	1889	04/26/2022	1629 PAIGE	Megan Parry	1629 Paige NE	occupied--backyard--open dumping	Tony Angelo	Closed	
<input type="checkbox"/>	1888	04/26/2022	1641 PAIGE AVE	Sandra Kosley	1641 Paige NE	occupied--backyard area--open dumping	Tony Angelo	Closed	

1

Records 1 to 11 (of 11)

1



Selected	Case Number	Case Date	Property Address	Violator Name	Location of Violation	Nature of Complaint	Assigned To	Status	Edit/View
<input type="checkbox"/>	1855	04/15/2022		TC Land Bank--Matt Martin 330-599-9275	vacant lot corner of Union/Hamilton	parcel 39-084100 & 39-20286--2 vacant lots--open dumping mattresses, couches, garbage. compl. advised TNP for last 3 years and have done nothing	FILE	Closed	
<input type="checkbox"/>	1747	03/01/2022	1268 MARTIN LUTHER KING	Steven Seifert	1268 Martin Luther King Blvd SW	condemned/demo list. OPEN DUMPING. complainant would like to see charges filed to get the owner to clean up. taxes are being paid.	Tony Angelo	Closed	

1

Records 1 to 11 (of 11)

1

APPENDIX W

DISTRICT MAP

Appendix W. District Maps

In accordance with Ohio Revised Code 3734.53(A)(2) and (A)(6) the District must provide a map that shows the locations of the following:

- All existing facilities where solid wastes are being disposed of: **See Appendix H, Section 10**
- All resource recovery facilities: **See Appendix H, Section 10**
- All recycling activities within the district: **See Appendix H, Section 1**
- Solid waste open dumping sites, including scrap tires: **See Appendix V**
- Disposal facilities for fly ash and bottom ash, foundry sand, and slag: **See Appendix V**

DRAFT