



# WOOD COUNTY SOLID WASTE MANAGEMENT DISTRICT PLAN

**REFERENCE YEAR: 2020**  
**PLANNING PERIOD: 2023-2039**



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Submitted by:

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<b>CHAPTER 1 INTRODUCTION.....</b>	<b>1-1</b>
<b>A. Brief Introduction to Solid Waste Planning in Ohio .....</b>	<b>1-1</b>
<b>B. Requirements of County and Joint Solid Waste Management Districts.....</b>	<b>1-2</b>
1. Structure .....	1-2
2. Solid Waste Management Plan .....	1-2
<b>C. District Overview.....</b>	<b>1-3</b>
<b>D. Waste Reduction and Recycling Goals.....</b>	<b>1-3</b>
<b>CHAPTER 2 DISTRICT PROFILE .....</b>	<b>2-1</b>
<b>A. Profile of Political Jurisdictions .....</b>	<b>2-2</b>
1. Counties in the Solid Waste Management District .....	2-2
2. County Overview .....	2-2
<b>B. Population .....</b>	<b>2-3</b>
1. Reference Year Population.....	2-3
2. Population Distribution .....	2-4
3. Population Change .....	2-4
4. Implications for Solid Waste Management .....	2-4
<b>C. Profile of Commercial and Institutional Sector .....</b>	<b>2-5</b>
<b>D. Profile of Industrial Sector .....</b>	<b>2-5</b>
<b>CHAPTER 3 WASTE GENERATION.....</b>	<b>3-1</b>
<b>A. Solid Waste Generated in Reference Year (2020) .....</b>	<b>3-1</b>
1. Residential/Commercial Waste Generated in Reference Year.....	3-2
2. Industrial Waste Generated in Reference Year.....	3-3
3. Excluded Waste Generated in Reference Year.....	3-3
<b>B. Historical Waste Generated.....</b>	<b>3-3</b>
1. Historical Residential/Commercial Waste Generated.....	3-4
2. Historical Industrial Waste Generated .....	3-4
3. Historical Excluded Waste Generated.....	3-5
<b>C. Waste Generation Projections .....</b>	<b>3-5</b>
1. Residential/Commercial Waste Projections.....	3-6
2. Industrial Waste Projections.....	3-6
3. Excluded Waste Projections.....	3-7
<b>CHAPTER 4 WASTE MANAGEMENT.....</b>	<b>4-1</b>
<b>A. Waste Management Overview .....</b>	<b>4-1</b>
<b>B. Profile of Waste Management Infrastructure Used During the Reference Year.....</b>	<b>4-3</b>
1. Solid Waste Management Facilities .....	4-3



2.	Waste Collection .....	4-7
<b>C.</b>	<b>Use of Solid Waste Facilities During the Planning Period .....</b>	<b>4-7</b>
<b>D.</b>	<b>Siting Strategy .....</b>	<b>4-7</b>
<b>E.</b>	<b>Designation .....</b>	<b>4-8</b>
1.	Description of the SWMD's Designation Process .....	4-8
2.	List of Designated Facilities.....	4-9
<b>CHAPTER 5 WASTE REDUCTION AND RECYCLING.....</b>		<b>5-1</b>
<b>A.</b>	<b>Solid Waste Management District's Priorities .....</b>	<b>5-2</b>
<b>B.</b>	<b>Program Descriptions.....</b>	<b>5-2</b>
1.	Residential Recycling Infrastructure .....	5-2
2.	Curbside Recycling Services .....	5-3
3.	Drop-off Recycling Locations .....	5-3
4.	Mixed Solid Waste Material Recovery Facility .....	5-4
5.	Multi-Family Unit Recycling.....	5-4
6.	Other Residential Recycling Programs .....	5-5
7.	Commercial/Institutional Sector Reduction and Recycling Programs.....	5-5
8.	Industrial Sector Reduction and Recycling Programs .....	5-7
9.	Restricted/Difficult to Manage Wastes.....	5-8
10.	Other Material Specific Programs .....	5-11
11.	Funding/Grants.....	5-12
12.	Economic Incentives.....	5-13
13.	Market Development Programs .....	5-13
14.	Feasibility Studies .....	5-13
15.	Facilities.....	5-13
16.	Data Collection .....	5-14
17.	Outreach, Education, Awareness, and Technical Assistance.....	5-14
18.	Other Programs.....	5-22
<b>C.</b>	<b>Waste Reduction and Recycling Rates (WR-R).....</b>	<b>5-23</b>
1.	Residential/Commercial Recycling in the District .....	5-23
2.	Industrial Recycling in the District .....	5-24
<b>CHAPTER 6 BUDGET .....</b>		<b>6-1</b>
<b>A.</b>	<b>Overview of the SWMD's Budget .....</b>	<b>6-1</b>
<b>B.</b>	<b>Revenue .....</b>	<b>6-2</b>
1.	Disposal Fees .....	6-3
2.	Generation Fees .....	6-3
3.	Fees Collected via Designation Agreements .....	6-3
4.	Other Funding Mechanisms .....	6-4
5.	Summary of Revenue.....	6-4
<b>C.</b>	<b>Expenses .....</b>	<b>6-5</b>

D. Budget Summary .....	6-7
-------------------------	-----

## **APPENDIX A MISCELLANEOUS INFORMATION ..... A-1**

A. Reference Year.....	A-1
B. Planning Period (first and last years).....	A-1
C. Goal Statement .....	A-1
D. Explanations of differences between data previously reported and data used in the solid waste management plan .....	A-1
E. Material Change in Circumstances/Contingencies.....	A-1

## **APPENDIX B RECYCLING INFRASTRUCTURE INVENTORY ..... B-1**

A. Curbside Recycling Services, Drop-Off Recycling Locations, and Mixed Solid Waste Materials Recovery Facilities .....	B-1
1. Curbside Recycling Services .....	B-1
2. Drop-Off Recycling Locations.....	B-2
3. Mixed Solid Waste Material Recovery Facilities.....	B-5
B. Curbside Recycling and Trash Collection Service Providers.....	B-5
C. Composting Facilities .....	B-6
D. Other Food Waste and Yard Waste Management Programs .....	B-7
E. Material Handling Facilities Used by the SWMD in the Reference Year .....	B-8

## **APPENDIX C POPULATION DATA ..... C-1**

A. Reference Year Population.....	C-1
B. Population Projections .....	C-2

## **APPENDIX D DISPOSAL DATA.....D-3**

A. Reference Year Waste Disposed.....	D-3
B. Historical Waste Analysis.....	D-6
1. Residential/Commercial Waste .....	D-7
2. Industrial Waste.....	D-9
3. Excluded Waste .....	D-10
C. Disposal Projections .....	D-10

## **APPENDIX E RESIDENTIAL/COMMERCIAL REDUCTION AND RECYCLING DATA ..... E-1**

<b>A. Reference Year Recovery Data .....</b>	<b>E-1</b>
<b>B. Historical Recovery .....</b>	<b>E-8</b>
<b>C. Residential/Commercial Recovery Projections .....</b>	<b>E-14</b>
<b>APPENDIX F INDUSTRIAL WASTE REDUCTION AND RECYCLING DATA .....</b>	<b>F-1</b>
<b>A. Reference Year Recovery Data .....</b>	<b>F-1</b>
<b>B. Historical Recovery .....</b>	<b>F-4</b>
<b>C. Industrial Recovery Projections .....</b>	<b>F-6</b>
<b>APPENDIX G WASTE GENERATION.....</b>	<b>G-1</b>
<b>A. Historical Year Waste Generated .....</b>	<b>G-1</b>
1. Residential/Commercial Waste .....	G-2
2. Industrial Waste.....	G-3
3. Excluded Waste .....	G-4
<b>B. Generation Projections.....</b>	<b>G-5</b>
<b>C. Waste Composition.....</b>	<b>G-6</b>
<b>APPENDIX H STRATEGIC EVALUATION.....</b>	<b>H-1</b>
<b>1. Residential Recycling Infrastructure Analysis .....</b>	<b>H-1</b>
A. Residential Recycling Infrastructure Analysis Overview.....	H-2
B. Residential Recycling Infrastructure Analysis Findings .....	H-9
<b>2. Commercial/Institutional Sector Analysis .....</b>	<b>H-10</b>
A. Commercial/Institutional Sector Analysis Overview.....	H-10
B. Commercial/Institutional Sector Analysis Findings .....	H-13
<b>3. Industrial Sector Analysis.....</b>	<b>H-14</b>
A. Industrial Sector Analysis Overview .....	H-14
B. Industrial Sector Analysis Findings.....	H-16
<b>4. Residential/Commercial Waste Composition Analysis .....</b>	<b>H-16</b>
A. Residential/Commercial Waste Composition Analysis Overview .....	H-16
B. Residential/Commercial Waste Composition Analysis Findings .....	H-20
<b>5. Economic Incentive Analysis.....</b>	<b>H-21</b>
A. Economic Incentive Analysis Overview .....	H-21
B. Economic Incentive Analysis Findings.....	H-23
<b>6. Restricted and Difficult to Manage Waste Streams Analysis.....</b>	<b>H-23</b>
A. Restricted and Difficult to Manage Waste Streams Analysis Overview.....	H-23
B. Restricted and Difficult to Manage Waste Streams Analysis Findings .....	H-26



<b>7. Diversion Analysis.....</b>	<b>H-27</b>
A. Diversion Analysis Overview .....	H-27
B. Residential/Commercial Waste Diversion .....	H-27
C. Industrial Waste Diversion .....	H-28
D. Diversion Analysis Findings .....	H-29
<b>8. Special Program Needs Analysis .....</b>	<b>H-29</b>
A. Special Program Needs Analysis Overview.....	H-30
B. Special Program Needs Analysis Findings .....	H-31
<b>9. Financial Analysis.....</b>	<b>H-31</b>
A. Financial Analysis Overview .....	H-31
B. Financial Analysis Findings.....	H-37
<b>10. Regional Analysis .....</b>	<b>H-37</b>
A. Regional Analysis Overview .....	H-37
B. Regional Analysis Findings .....	H-38
<b>11. Data Collection Analysis .....</b>	<b>H-39</b>
A. Data Collection Overview .....	H-39
B. Data Collection Findings .....	H-41
<b>12. Education/Outreach Analysis .....</b>	<b>H-41</b>
A. Education/Outreach Analysis Overview .....	H-42
B. Education/Outreach Findings .....	H-45
<b>13. Processing Capacity Analysis .....</b>	<b>H-46</b>
A. Processing Capacity Overview .....	H-46
B. Processing Capacity Findings .....	H-46
<b>APPENDIX I ACTIONS, PRIORITIES, AND PROGRAM DESCRIPTIONS .....</b>	<b>I-1</b>
<b>A. Actions and Priorities .....</b>	<b>I-1</b>
<b>B. Programs .....</b>	<b>I-6</b>
Residential Recycling Infrastructure .....	I-6
Mixed solid waste materials recovery facility.....	I-8
Multi-Family Unit Recycling.....	I-9
Other Residential Recycling Programs .....	I-9
Commercial/Institutional Sector Reduction and Recycling Programs.....	I-9
Industrial Sector Reduction and Recycling Programs.....	I-12
Restricted/Difficult to Manage Wastes.....	I-14
Other Material Specific Programs .....	I-16
Funding/Grants.....	I-17
Economic Incentives.....	I-18
Market Development Programs .....	I-18
Facilities.....	I-18
Data Collection .....	I-19
Other Programs.....	I-20

**APPENDIX J REFERENCE YEAR OPPORTUNITY TO RECYCLE AND DEMONSTRATION OF  
ACHIEVING GOAL 1..... J-1**

<b>A. Residential Sector Opportunity to Recycle .....</b>	<b>J-1</b>
1. Methodology .....	J-3
2. Summary.....	J-5
<b>B. Commercial Sector Opportunity to Recycle .....</b>	<b>J-6</b>
<b>C. Demonstration of Meeting Other Requirements for Achieving Goal 1 .....</b>	<b>J-7</b>
1. Residential/Commercial Waste Reduction and Recycling Rate .....	J-7
2. Industrial Waste Reduction and Recycling Rate .....	J-7
3. Encouraging Participation .....	J-7

**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**

<b>A. Minimum Required Education Programs.....</b>	<b>L-1</b>
1. Web Page .....	L-1
2. Comprehensive Resource Guide .....	L-2
3. Infrastructure Inventory .....	L-2
4. Speaker/Presenter .....	L-3
<b>B. Outreach and Marketing Plan.....</b>	<b>L-3</b>
1. Residential Sector .....	L-5
2. Commercial/Institutional Sector .....	L-8
3. Industrial Sector .....	L-9
4. Political Leaders.....	L-9
5. Schools.....	L-9
<b>C. Outreach Priority .....</b>	<b>L-10</b>

**APPENDIX M WASTE MANAGEMENT CAPACITY ANALYSIS .....M-1**

<b>A. Access to Publicly Available Landfill Facilities .....</b>	<b>M-1</b>
<b>B. Access to Captive Landfill Facilities .....</b>	<b>M-2</b>
<b>C. Incinerators and Energy Recovery Facilities.....</b>	<b>M-3</b>

**APPENDIX N EVALUATING GREENHOUSE GAS EMISSIONS..... N-1**

<b>A. Overview .....</b>	<b>N-1</b>
<b>B. WARM Model Summary .....</b>	<b>N-2</b>

<b>APPENDIX O FINANCIAL PLAN.....</b>	<b>O-1</b>
<b>A. Funding Mechanisms and Revenue Generated .....</b>	<b>O-1</b>
1. Disposal Fee .....	O-1
2. Generation Fee .....	O-2
3. Designation Fees .....	O-3
4. Debt/Loans.....	O-4
5. Other Sources of District Revenue .....	O-4
6. Summary of District Revenues.....	O-5
<b>B. Cost of Implementing Plan.....</b>	<b>O-6</b>
<b>C. Alternative Budget .....</b>	<b>O-15</b>
<b>D. Major Facility Project .....</b>	<b>O-15</b>
<b>APPENDIX P DESIGNATION .....</b>	<b>P-1</b>
<b>A. Statement Authorizing/Precluding Designation .....</b>	<b>P-1</b>
<b>B. Designated Facilities.....</b>	<b>P-1</b>
<b>C. Documents.....</b>	<b>P-2</b>
<b>APPENDIX Q DISTRICT RULES .....</b>	<b>Q-1</b>
<b>A. Existing Rules.....</b>	<b>Q-1</b>
<b>B. Proposed Rules .....</b>	<b>Q-1</b>
<b>APPENDIX R BLANK SURVEY FORMS AND RELATED INFORMATION.....</b>	<b>R-1</b>
<b>APPENDIX S SITING STRATEGY.....</b>	<b>S-1</b>
<b>APPENDIX T MISCELLANEOUS PLAN DOCUMENTS .....</b>	<b>T-1</b>
<b>A. Certification Statement for Draft Solid Waste Management District Plan .....</b>	<b>T-1</b>
<b>B. Resolution Adopting the Solid Waste Management District Plan .....</b>	<b>T-2</b>
<b>C. Resolution Certifying Ratification of the Solid Waste Management District Plan.....</b>	<b>T-4</b>
<b>APPENDIX U RATIFICATION RESULTS .....</b>	<b>U-1</b>
<b>APPENDIX V INVENTORY OF OPEN DUMPS AND OTHER DISPOSAL FACILITIES .....</b>	<b>V-1</b>
<b>A. Existing Open Dumps and Waste Tire Dumps .....</b>	<b>V-1</b>
<b>B. Ash, Foundry Sand, and Slag Disposal Sites .....</b>	<b>V-1</b>



<b>APPENDIX W DISTRICT MAP .....</b>	<b>W-1</b>
<b>APPENDIX X OUTREACH AND MARKETING MATERIALS .....</b>	<b>X-1</b>

# I SOLID WASTE MANAGEMENT DISTRICT INFORMATION

**Table i-1 Solid Waste Management District Information**

<b>SWMD Name</b>	Wood County Solid Waste Management District
<b>Member Counties</b>	Wood
<b>Coordinator's Name (main contact)</b>	Carri Stanley
<b>Job Title</b>	County Administrator
<b>Street Address</b>	One Courthouse Square
<b>City, State, Zip Code</b>	Bowling Green, OH 43402
<b>Phone</b>	419-354-9297
<b>E-mail address</b>	<a href="mailto:solidwastedistrict@woodcountyohio.gov">solidwastedistrict@woodcountyohio.gov</a>
<b>Webpage</b>	<a href="http://www.recyclewoodcounty.org">www.recyclewoodcounty.org</a>

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

<b>Member Name</b>	<b>Representing</b>
Doris Herringshaw, Ed.D.	County Commissioners
Mike Aspacher	Municipal Corporations
Jim Rossow	Townships
Lana Glore	Health District
Lori Carson	Generators
Judy Hagen	Citizens
Nicki Kale	Public

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

<b>Name</b>	Doris Herringshaw, Ed.D.
<b>Street Address</b>	One Courthouse Square
<b>City, State, Zip Code</b>	Bowling Green, OH 43402
<b>Phone</b>	419-354-9100
<b>Fax</b>	419-354-1522
<b>E-mail address</b>	<a href="mailto:commissioners@woodcountyohio.gov">commissioners@woodcountyohio.gov</a>

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

<b>Commissioner Name</b>	<b>County</b>	<b>Chairperson/President</b>
Doris Herringshaw, Ed.D.	Wood County	Chairman

## Technical Advisory Committee

Wood County did not establish or utilize a technical advisory committee to develop this plan update.

Plan Prepared By

**Wood County Solid Waste Management District**

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# CHAPTER 1 INTRODUCTION

## Purpose

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 takes these characteristics in mind when developing its overall waste management strategy.

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

The three overriding purposes of this planning process are to:

- reduce the amount of waste Ohioans generate and dispose of;
- ensure that Ohio has adequate, protective capacity at landfills to dispose of its waste; and
- reduce Ohio's reliance on landfills.

## **B. Requirements of County and Joint Solid Waste Management Districts**

### **1. Structure**

Each of the 88 counties in Ohio must be in a solid waste management district (SWMD). The board of county commissioners form a SWMD through a resolution. A board of county commissioners has the option of forming a single county SWMD or joining with the board(s) of county commissioners from one or more other counties to form a multi-county SWMD. Ohio's 88 counties are organized into 52 SWMDs. Of these, 37 are single county SWMDs and 15 are multi-county.

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. 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 the SWMD's solid wastes that will be disposed. The solid waste management plan must also show how the SWMD will meet the waste reduction and recycling goals established in Ohio's state solid waste management plan (state plan) and present a budget for implementing the solid waste management plan.

Ohio Revised Code (ORC) 3734.53 and Ohio Administrative Code (OAC) Rule 3745-27-90 specify the contents of a solid waste management plan. Ohio EPA prescribes a format (The District Solid Waste Management Plan Format) that details the information a plan must provide, and the way 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. This gives 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 submits periodic updates to its solid waste management plan to Ohio EPA. For an approved plan that covers a planning period of between 10 and 14 years, the policy committee must submit a revised plan by the third anniversary Ohio approved the SWMD's current plan. 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**

On June 24, 1988, the Wood County Board of Commissioners established a single county solid waste management district. Due to population requirements, the county was required to apply for an exemption for single county status, which was granted on February 17, 1989. The District includes the entirety of Wood County and is located in northwest Ohio. The District maintains an office in the Wood County Office Building, One Courthouse Square, 5<sup>th</sup> Floor, Bowling Green, Ohio.

The District is responsible for planning and implementing the policies and programs in the solid waste management plan. These programs are designed to increase waste reduction and recycling, as well as reduce the District's reliance on landfills. Targeted outreach and education are also key components of the District's overall strategy to motivate residents, businesses, and industries to reduce waste and recycle.

The District recently implemented a new permanent full-time residential recycling drop-off program. The program has twelve sites throughout the county and has been very popular with residents. The District contracts with a private provider for collection, transportation and processing of the materials. In 2020, the annual tonnage of recyclables collected increased by over 800% compared to the District's former part-time mobile trailer satellite program. The District also includes several communities with well-established, high performing curbside recycling programs. Altogether, the District has a robust, highly utilized residential recycling program.

### **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).

The 2020 State Solid Waste Management Plan established ten total goals (nine of which are required) as follows:



1. Recycling Infrastructure - The SWMD shall ensure that there is adequate infrastructure to give residents and commercial businesses opportunities to recycle solid waste.
2. Waste Reduction and Recycling Rates - The SWMD shall reduce and recycle at least 25 percent of the solid waste generated by the residential/commercial sector.
3. Outreach and Education (Minimum Required) - 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.
4. Outreach and Education - 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. Industrial Programs and Services - The SWMD shall incorporate a strategic initiative for the industrial sector into its solid waste management plan.
6. Restricted Solid Wastes, Household Hazardous Waste (HHW) and Electronics - 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. Economic Incentives - The SWMD shall explore how to incorporate economic incentives into source reduction and recycling programs.
8. Measure Greenhouse Gas Reduction - The SWMD will use U.S. EPA's Waste Reduction Model (WARM) (or an equivalent model) to evaluate the impact of recycling programs on reducing greenhouse gas emissions.
9. Market Development (optional) - The SWMD has the option of providing programs to develop markets for recyclable materials and the use of recycled-content materials.
10. Reporting - The SWMD shall report annually to Ohio EPA regarding implementation of the SWMD's solid waste management plan.

All required goals are crucial to furthering solid waste reduction and recycling in Ohio. However, the challenges posed by Goals 1 and 2 often mean SWMDs devote more resources to achieving those two goals than to the remaining goals. Thus, Goals 1 and 2 are the primary goals of the 2020 State Plan.

A SWMD is encouraged to devote resources to achieving both goals but is not required to demonstrate achieving both. Instead, SWMDs have the option of choosing either Goal 1 or Goal 2 for their solid waste management plans. This gives SWMDs two options for achieving Ohio'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.

See Chapter 5 and Appendix I for descriptions of the programs the SWMD will use to achieve the nine required goals.

## CHAPTER 2 DISTRICT PROFILE

### Purpose

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;
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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 takes these characteristics in mind when developing its overall waste management strategy.





The Ohio Department of Development (ODOD) Office of Research provides data and analysis on the economic, industrial, demographic, and program trends of the state of Ohio, its businesses, and its people. The Office of Research also acts as the state government liaison to the U.S. Bureau of the Census and the U.S. Bureau of Economic Analysis. The Office of Research produces County Profiles, a geographic compilation of data for all 88 Ohio counties as well as a specific report on Ohio's Appalachian Region. Other available reports include Major Employers, Annual Exports, Gross State Product, Private Investment Survey, Industry Reports, and the County and City Population Estimates. These reports were used to help complete Chapter 2.

## **A. Profile of Political Jurisdictions**

### **1. Counties in the Solid Waste Management District**

The Solid Waste Management District is a single county district composed of Wood County and the local units of government within the county borders. There have been no changes in the configuration of the District since the original solid waste management plan was approved.

### **2. County Overview**



Wood County is located in northwest Ohio with Lucas County to the north, Henry County and Putnam County to the west, Hancock County to the south, and Ottawa, Sandusky, and Seneca Counties to the east. Wood County covers approximately 619 square miles, and has 19 townships, 21 villages, and five cities. The county seat is the City of Bowling Green, which is the largest city in the county with a population of 30,808 in 2020. Wood County grew in population between 2010 and 2020 by approximately 5%, one of only a few Ohio counties with an overall increase.

The topography of the District can be described as predominantly flat, with approximately two feet of fall per mile. The District was once part of a vast swamp that extended into the State of Indiana. This swamp was known as the "Great Black Swamp," and served as a deterrent to the settlement of northwestern Ohio. The swamp underwent a massive drainage process in the late 1880s, and today little remains of the original swamp. The soils that emerged after the swamp was drained have turned out to be some of the most fertile in the state, and consequently agriculture is one of the largest industries in Wood County today.

## B. Population

### 1. Reference Year Population

According to 2020 U.S. Census data released in August 2021, Wood County grew by 5.4 percent since the 2010 national headcount, bringing its population to 132,248.<sup>1</sup> Wood County was one of only 33 counties among the state's 88 counties that did not see a decline in population. Reference year population was taken from the ODO, Development Services Agency Office of Statistical Research (OSR).<sup>3</sup> Since the ODO has not yet updated population projections using the 2020 Census data, this plan uses 2019 population projection information provided by ODO.<sup>2</sup>

Ohio law requires the entire population of a municipality located in more than one solid waste management district to be added to the solid waste management district containing the largest portion of the jurisdiction's population. The city of Fostoria straddles Wood, Hancock and Seneca counties, with the majority of the population located in Seneca County.<sup>3</sup> As a result, this plan subtracts the population of the City of Fostoria from Wood County's overall population (see Appendix C).

**Table 2-1 Population of District in the Reference Year (2020), 2010 and 2000**

Name	% of Population in 2020	2020	2010	2000	% Change '10 to '20	% Change '00 to '10
<b>Wood County</b>		132,248	125,488	121,065	5.4%	3.7%
Adjustment - Fostoria city		<b>131,156</b>	<b>124,450</b>	<b>120,223</b>	<b>5.1%</b>	<b>3.4%</b>
<b>Municipalities within the county</b>						
Bairdstown village	0.1%	115	130	130	-11.5%	0.0%
Bloomdale village	0.5%	665	678	724	-1.9%	-6.4%
Bowling Green city	23.3%	30,808	30,028	29,636	2.6%	1.3%
Bradner village	0.7%	971	985	1,171	-1.4%	-15.9%
Custar village	0.1%	178	179	208	-0.6%	-13.9%
Cygnets village	0.4%	543	597	564	-9.0%	5.9%
Fostoria city (part)	0.8%	1,092	1,038	842	5.2%	23.3%
Grand Rapids village	0.7%	925	965	1,002	-4.1%	-3.7%
Haskins village	0.9%	1,245	1,188	638	4.8%	86.2%
Hoytville village	0.2%	220	303	296	-27.4%	2.4%
Jerry City village	0.3%	454	427	453	6.3%	-5.7%
Luckey village	0.8%	1,009	1,012	998	-0.3%	1.4%
Millbury village	0.9%	1,193	1,200	1,161	-0.6%	3.4%
Milton Center village	0.1%	137	144	195	-4.9%	-26.2%
North Baltimore village	2.5%	3,369	3,432	3,361	-1.8%	2.1%
Northwood city	3.9%	5,160	5,265	5,471	-2.0%	-3.8%
Pemberville village	1.0%	1,326	1,371	1,365	-3.3%	0.4%
Perrysburg city	18.9%	25,041	20,623	16,945	21.4%	21.7%
Portage village	0.3%	398	438	428	-9.1%	2.3%
Risingsun village	0.4%	541	606	620	-10.7%	-2.3%
Rossford city	4.8%	6,299	6,293	6,406	0.1%	-1.8%
Tontogany village	0.3%	387	367	364	5.4%	0.8%

<sup>1</sup> U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File; 2020 Census Redistricting Data (Public Law 94-171) Summary File; 2020 county and Core Based Statistical Area (CBSA) gazetteer files; Office of Management and Budget, March 2020, Metropolitan and Micropolitan Statistical Area delineations

<sup>2</sup> Ohio Department of Development, Office of Research (2020). Wood County Profile. <https://devresearch.ohio.gov/files/research/C1088.pdf>

<sup>3</sup> Ohio Department of Development, Office of Research. August 2021. Population Counts for Governmental Units: 2020, 2010, 2000. <https://devresearch.ohio.gov/files/research/P3008.pdf>



Name	% of Population in 2020	2020	2010	2000	% Change '10 to '20	% Change '00 to '10
Walbridge village	2.3%	3,011	3,019	2,546	-0.3%	18.6%
Wayne village	0.6%	841	887	842	-5.2%	5.3%
West Millgrove village	0.1%	131	174	78	-24.7%	123.1%
Weston village	1.1%	1,455	1,590	1,659	-8.5%	-4.2%
Balance of Wood County	33.8%	44,734	42,549	42,962	5.1%	-1.0%

Source: Ohio Department of Development, Office of Research. August 2021. Population Counts for Governmental Units: 2020, 2010, 2000.

<https://devresearch.ohio.gov/files/research/P3008.pdf>

Municipality is partially within Wood County; however, the majority of the population is located within another county

## 2. Population Distribution

As shown in Table 2-1, the City of Bowling Green, the county seat, has the largest municipal population of 30,808. Nearly a quarter of the county's population lives within the City of Bowling Green followed by the City of Perrysburg (19%), the City of Rossford (5%), and the City of Northwood (4%). Thirty-four percent of the population lives in unincorporated areas of the county.

The majority of the population is between 25-64 years old (57%) and the median age is 34.8 years. Of those 25 years and older, over 1/3 are high school graduates, nearly 20% have a bachelor's degree, and 14% have a master's degree or higher.<sup>2</sup>

Of the reported 30,852 family units (including Fostoria), 58% reported they have no children, 31% were married with children, and the remaining 11% reported single parent households. Nearly half of the families reported that both adults were in the labor force.

## 3. Population Change

As shown in Table 2-1, Wood County grew by 5.4% since the 2010 national headcount and is expected to continue to grow over the planning period. This outpaces the average state population increase of 2.3%. The City of Perrysburg experienced the most municipal growth with a 21% increase in population since 2000. Middleton Township population increased 26% and Perrysburg Township grew 8.5% between 2010 and 2020.<sup>4</sup> The villages of Hoytville and West Millgrove experienced the greatest decrease from 2010 to 2020, both with nearly 25% decreases.

Table 2-1 shows that the population of Wood County is dynamic, with some areas experiencing significant growth while others have seen a large decrease in population. These trends should be considered during the planning period relative to recycling access.

## 4. Implications for Solid Waste Management

Wood County is one of the few Ohio counties in which population is expected to increase over the planning period, which has implications for solid waste management. While cities generally provide comprehensive trash and recycling services, many townships do not. As population growth increases, it is expected that there will be an increase in waste

<sup>4</sup> Ohio Department of Development, Office of Research. August 2021. Population Counts for Governmental Units: 2020, 2010, 2000. <https://devresearch.ohio.gov/files/research/P3008.pdf>

disposal (and generation). Additionally, approximately 34% of the population of Wood County resides in rental housing. This is important for solid waste management planning because renters tend to be more mobile than homeowners and more challenging to engage with for purposes of education and outreach.

### **C. Profile of Commercial and Institutional Sector**

"Commercial/Institutional Sector" includes businesses such as shopping centers, retail stores, grocery stores, theaters, gas stations, business offices, hotels, restaurants, and similar service establishments. Institutions include government and non-profit offices, schools, prisons, churches, parks, and similar organizations.

Based on the State of Ohio Office of Research, between 2013 and 2018, education/health services employment in the county increased 10.2%. There was also a large increase in average employment in the information field (101%).

Top commercial/institutional employers include Bowling Green State University, FedEx Ground, Owens Community College, Perrysburg Schools, Wood County Government, and Wood County Hospital Association.

### **D Profile of Industrial Sector**

"Industrial Sector" includes manufacturing or industrial operations and includes, but is not limited to chemical, product and food manufacturing; iron/steel industry; pulp and paper industry; stone, glass, clay and concrete products; textile manufacturing; power generation; automobile manufacturing; and transportation equipment.

Historically, most manufacturing in Wood County has involved either the production of food, automotive parts and sub-assemblies, or machinery. However, Wood County has seen a diversification of its industrial tax base over the last several years. Alternative energy manufacturing has become an important part of Wood County's economy. In 2021, First Solar broke ground on a \$600 million dollar expansion to its solar panel manufacturing facility in Lake Township. A new float-glass production facility owned by NSG North America that makes specialty glass for the solar panel industry went into production in Troy Township. Several large warehousing/distribution facilities were built, including Fed Ex, Walgreens, Home Depot Warehouse, UPS Distribution, and Amazon Fulfillment Center. As the economic climate currently stands, Wood County is poised to see more capital investment and job creation.



**Table 2-2 Top Ten Manufacturing Employers in Wood County (2022)<sup>5</sup>**

<b>Largest Manufacturing Employers</b>	<b>Approximate Employees</b>
Amazon	4,000
Fed Ex	2,300
Magna International	2,200
First Solar	1,500
Home Depot	1,200
Walgreens	1,000
Chrysler	800
O-I Glass	700
NSG	550
Adient	500

Top sectors (by number of establishments) in the county include goods-producing sectors such as construction and manufacturing, as well as service producing sectors such as financial services and trade, transportation, and utilities. Between 2013 and 2018, the largest growth occurred in natural resource and mining (31%) and manufacturing (9.6%). The highest increases in average employment, however, were in construction (80%) and natural resources and mining (26.9%).

**Figure 2-1 Number of Private Establishments from 2010 to 2021**

By the end of 2020, there were an estimated 2,910 establishments within Wood County <sup>6</sup>, defined as “an economic unit, such as a factory, mine, store, or office that produces goods or services. The economic unit is generally at a single location and is engaged predominantly in one type of economic activity. Where a single location encompasses two or more distinct activities, these are treated as separate establishments, if separate payroll records are available, and the various activities are classified under different industry codes.” As shown in Figure 2-1, there has been a steady increase of private establishments since the early 2000s.

<sup>5</sup> Personal Communication with Wade Gottschalk, Wood County Economic Development Office, March 17, 2022.  
Largest Manufacturing Employers, 2022.

<sup>6</sup> U.S. Bureau of Labor Statistics and Federal Reserve Bank of St. Louis, Number of Private Establishments for All Industries in Wood County, OH [ENU3917320510], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/ENU3917320510>, March 7, 2022.

## CHAPTER 3 WASTE GENERATION

This chapter summarizes the SWMD's historical and projected solid waste generation. The policy committee needs to understand the waste the SWMD will generate before it can make decisions regarding how to manage the waste.

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

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

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

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

### A. Solid Waste Generated in Reference Year (2020)

To calculate how much total waste was generated in the Wood County SWMD, the District added the quantities of waste disposed in landfills and the quantities of waste recycled, composted and diverted. Detailed information on waste generation can be found in Appendix G.





In 2020, the Wood County SWMD generated 300,715 tons of material, as shown in Table 3-1.

**Table 3-1 Solid Waste Generated in the Reference Year**

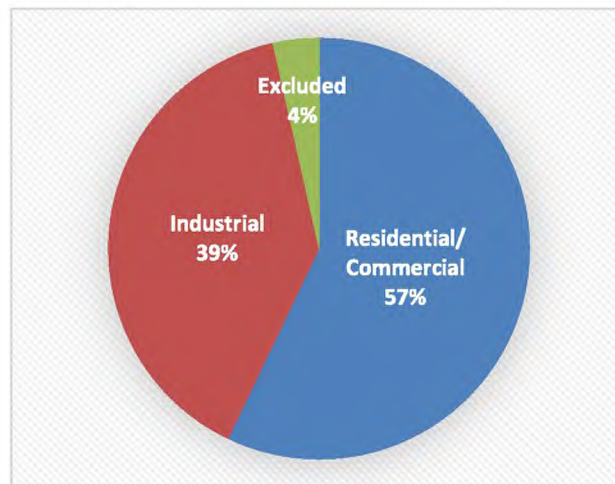
Type of Waste	Quantity Generated (tons)
Residential/ Commercial	172,647
Industrial	117,529
Excluded	10,533
<b>Total</b>	<b>300,709</b>

Source(s) of Information: Tables G-2, K-1, K-2  
 Ppd = (tons \* 2,000 lbs) / 365 days / population

The per capita statewide solid waste generation rate across all sectors in 2020 was 13.02 pounds per person per day (ppd), while the District's rate was 12.56 ppd, which indicates the District is generating less than average.

Figure 3-1 shows the percentage of residential/commercial and industrial waste generated in the District.

**Figure 3-1 Solid Waste Generated in the Reference Year**



### **1. Residential/Commercial Waste Generated in Reference Year**

The residential/commercial sector generated 172,647 tons of waste, comprising 57% of total waste in the District. This is slightly higher than the 2020 statewide average generation percentage from the same sector, which was 52%<sup>7</sup>.

Each person in the District generates approximately 7.21 ppd, slightly higher than the reported statewide average of 6.85 ppd.<sup>8</sup> The District's 2017 Plan projected a rate of 6.3 ppd for 2020, which is slightly less than the actual rate measured.

<sup>7</sup> [https://epa.ohio.gov/static/Portals/34/document/general/recdisgen\\_2020.pdf](https://epa.ohio.gov/static/Portals/34/document/general/recdisgen_2020.pdf)

<sup>8</sup> Ohio EPA Guidance/Fact Sheet 1017, December 2021. Solid Waste Generated in Ohio - 2020



Residential/commercial waste generation increased by 10% in 2020. Based on how the data is reported, the District is unable to determine how much waste is attributable to households and how much is from commercial activity. Some of the upsurge may have been related to the Covid-19 pandemic as residents shifted to on-line purchasing, delivery services and take-out food, generating more cardboard, plastic, and other packaging wastes. Population increase and new commercial activity may also have been factors.

## 2. **Industrial Waste Generated in Reference Year**

The industrial sector generated 117,529 tons of waste, comprising 39% of total waste generated in the District. This equates to a per capita generation rate of 4.91 ppd, which is below the reported statewide average of 5.92.<sup>5</sup> The District's 2017 Plan projected a rate of 4.7 ppd, which is very close to the actual rate measured.

## 3. **Excluded Waste Generated in Reference Year**

Excluded waste includes materials that are excluded from the definition of solid waste in ORC 3734.01 (E). This includes slag, uncontaminated earth, non-toxic fly ash, spent non-toxic foundry sand, and materials from mining operations. Ohio EPA Format 4.1 allows Districts to exempt excluded waste from their calculations if it is less than 10% of total waste generated. Excluded waste for the District in the reference year (10,533 tons) accounted for 4% of the waste generated and is not considered in the analysis of this plan.

## B. **Historical Waste Generated**

**Figure 3-2 Waste Generated from 2016 to 2020 (tons)**



Figure 3-2 shows the amount of waste generated by sector from 2016 to 2020. Overall, the District's waste generation is slightly increasing, with small increases in the residential/commercial sector since 2017. It is important to note the COVID-19 pandemic in 2020 has likely resulted in some anomalous results compared to historical trends.

### 1. **Historical Residential/Commercial Waste Generated**

Residential/commercial waste generation has remained fairly constant despite the increasing population. From 2016-2019 the District's annual average increase in residential/commercial waste generation was 1%. In 2020, the District experienced an upsurge of 10%, which was likely attributable to the COVID-19 pandemic. Overall, the average annual change in waste generation from 2016-2020 was 3%.

Residential/commercial waste per capita generation rates varied from 6.41 ppd in 2016 to 7.21 ppd in 2020. Overall, the amount and rate of residential/commercial waste generated appears to be trending upward, likely due to both an increasing population and increasing volume of waste disposed. Again, the highest waste generated occurred in 2020 during the COVID-19 pandemic where there was a large increase in home deliveries, online ordering, and increased packaging.

**Table 3-1a Residential/ Commercial Solid Waste Generated**

Year	Residential/ Commercial (tons)	Population	Annual Percent Change (tons)	Generation Rate (lbs./person/day)
2016	151,693	129,768	-	6.41
2017	155,736	130,437	3%	6.54
2018	161,281	130,441	4%	6.77
2019	157,352	130,817	-2%	6.59
<b>2020</b>	<b>172,647</b>	<b>131,156</b>	<b>10%</b>	<b>7.21</b>

Source: Table G-1

### 2. **Historical Industrial Waste Generated**

Industrial waste generation also remained fairly constant despite economic growth and increasing population. Annual change varied from a 11% increase in 2019 to a 14% decrease in 2020. This decrease in 2020 was likely related to the COVID-19 pandemic as some businesses were temporarily shut-down or had limited production due to supply chain issues and staffing limitations. At the same time, employees were at home resulting in the increase in residential/commercial waste generation. Overall, the average annual change in waste generation between 2016-2020 was 0.5% decrease in the industrial sector.

Industrial waste per capita generation rates varied from 4.91 ppd in 2020 to 5.74 ppd in 2019. The average industrial generation rate from 2016-2020 was 5.28 ppd.

The quantities of industrial waste generation are impacted by the data collection process. The District obtains these amounts solely from a voluntary industrial survey. As a result, the data is impacted from year-to-year due to survey participation.

**Table 3-1b Industrial Solid Waste Generated**

Year	Industrial (tons)	Population	Annual Percent Change (tons)	Generation Rate (lbs./person/day)
2016	122,389	129,768	-	5.17
2017	128,890	130,437	5%	5.41
2018	123,406	130,441	-4%	5.18
2019	137,083	130,817	11%	5.74
<b>2020</b>	<b>117,529</b>	<b>131,156</b>	<b>14%</b>	<b>4.91</b>

Source: Table G-1

### 3. *Historical Excluded Waste Generated*

Since excluded waste made up less than 10% of the total waste generated in the reference year (2020), the District has chosen not to address excluded waste per Ohio EPA 4.1 Instructions.

## C. Waste Generation Projections

**Table 3-2 Waste Generation Projections**

Year	Residential Commercial Waste (tons)	Industrial Waste (tons)	Total (tons)
2023	166,568	118,651	285,219
2024	168,003	119,064	287,067
2025	169,506	119,496	289,002
2026	171,287	119,951	291,238
2027	173,143	120,428	293,571
2028	175,077	120,929	296,006

Source: Table G-2

Table 3-2 summarizes projected waste generation within the District during the first six years of the planning period.



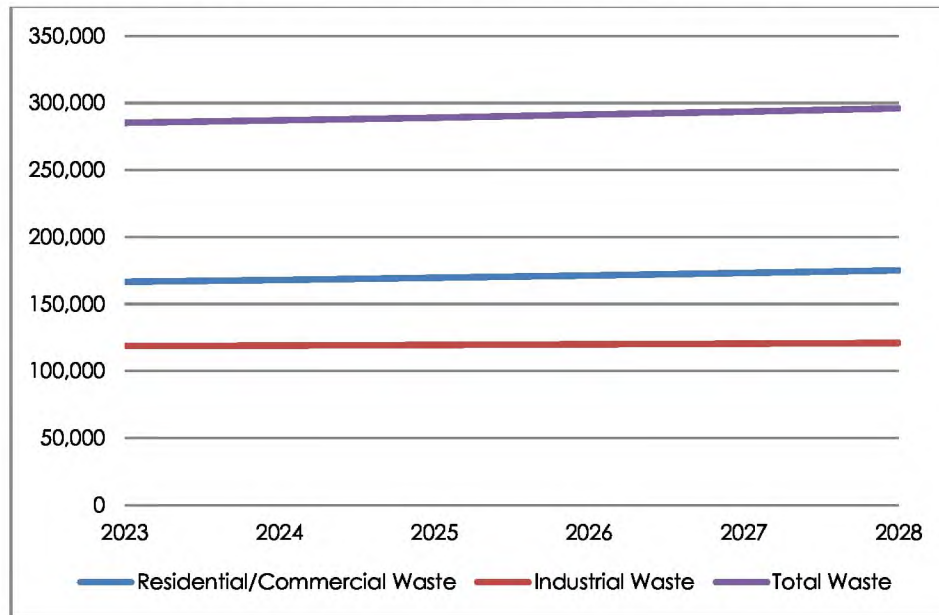
**Figure 3-3 Waste Generation Projections**

Figure 3-3 presents the projected amount of waste to be generated for the first six years of the planning period.

### **1. Residential/Commercial Waste Projections**

Residential and commercial waste generation is expected to increase slightly over the planning period due to an increase in disposal and a small increase in recycling/reduction. To project disposal, the District used the average per capita disposal rate between 2016-2020 (5.14 ppd – see Table D-5) for the first six years of the planning period. To project recycling/reduction, the District used a 5% increase in yard waste/composting quantities and held the remaining recycling categories constant.

These projections were made after completing a historical analysis for disposal (Appendix D) and recycling (Appendix E). Appendix G provides more detailed information regarding waste generation projections for the residential/commercial sector.

### **2. Industrial Waste Projections**

Industrial waste generation is expected to increase slightly (approximately 1% per year) over the first six years of the planning period due mainly to an increase in projected disposal. Recycling/reduction is projected to remain constant over the entire planning period. Historical industrial waste disposal amounts have varied from year to year, making trend analysis difficult. Annual percent changes (based on reported tonnage) seem to alternate between an increase one year and a decrease the next year. As a result, the District projects industrial waste disposal will increase approximately 5% each year over the first six years of the planning period..

These projections were made after completing a historical analysis for disposal (Appendix D) and recycling (Appendix F). Appendix G provides more detailed information regarding waste generation projections for the industrial sector.

### **3. Excluded Waste Projections**

Since excluded waste made up less than 10% of the total waste generated in the reference year (2020), the District has chosen not to address excluded waste per Ohio EPA 4.1 Instructions.



## CHAPTER 4 WASTE MANAGEMENT

### Purpose of Chapter 4

Chapter 4 summarizes the policy committee's strategy for how the SWMD will manage its waste during the planning period.

A SWMD must have access to facilities that can manage the waste the SWMD will generate. This includes landfills, transfer facilities, incinerator/waste-to-energy facilities, compost facilities, and facilities to process recyclable materials.

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

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

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

### A. Waste Management Overview

The District works in cooperation with communities and private sector providers to ensure adequate waste and recycling collection, processing, and disposal services for the residential, commercial and industrial sectors. The District also works to develop innovative strategies to increase diversion and to find creative solutions for materials that are not traditionally recycled or composted.

In 2020, solid waste generated within the District was managed through three major categories: recycling, composting, and landfilling. No waste was delivered to transfer facilities in the reference year. The District anticipates utilizing these same waste management methods throughout the planning period.

The District's waste disposal volume has increased over the last few years. The increase is attributable in part to population growth and more overall materials going to landfills. The Covid-19 pandemic may also have impacted the volume of disposal due to the increase in on-line purchasing, delivery services and take-out food, which generated more cardboard, plastic, and other packaging wastes.

Table 4-1 and Figure 4-1 show the District's methods for managing waste during the reference year and first six years of the planning period and identifies the amount of waste projected for each category.

**Table 4-1 Methods for Managing Waste (tons)**

Year	Total Waste	Recycle	Compost	Transfer	Landfill
<b>2020</b>	<b>290,176</b>	<b>129,503</b>	<b>20,475</b>	<b>0</b>	<b>140,198</b>
2023	285,219	129,928	23,702	0	131,588
2024	287,067	130,092	24,887	0	132,087
2025	289,002	130,263	26,132	0	132,607
2026	291,238	130,443	27,438	0	133,356
2027	293,571	130,633	28,810	0	134,128
2028	296,006	130,831	30,251	0	134,924

Sources: Tables K-3, E-8 (minus compost total), and D-6

Notes:

1 "Generate" represents the total of the other four columns.

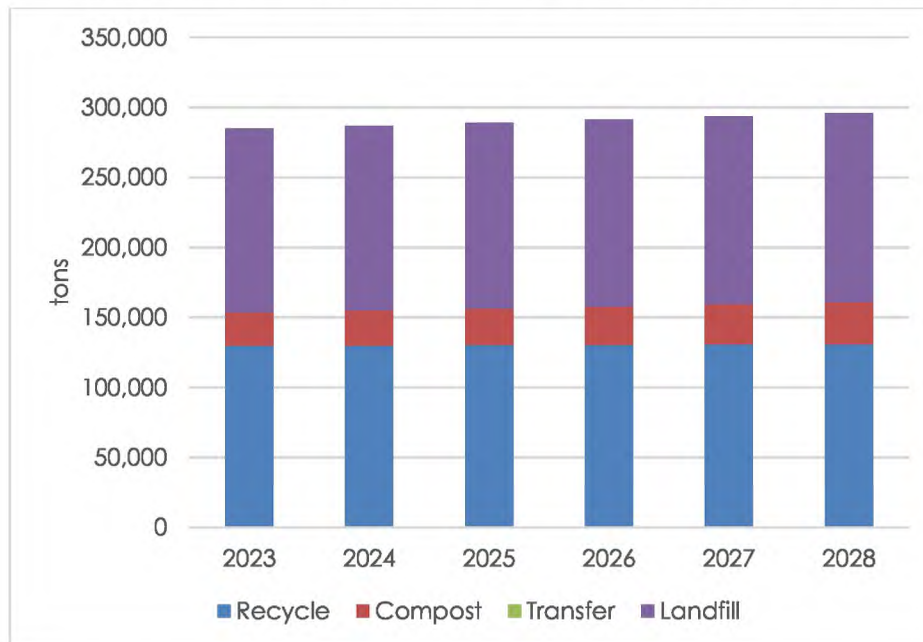
2 "Recycle" is the total amount reduced and recycled minus composting.

3 "Composted" is the amount of yard waste sent to a compost facility.

4 "Transferred" is the amount sent to transfer stations prior to delivery to a landfill.

5 "Landfilled" plus the "Transferred" amount equals the total disposal.

**Figure 4-1 Projected Waste by Management Method**



The District is projecting that overall diversion (recycling and composting) will exceed total waste taken to landfills in Wood County over the next six years.

## B. Profile of Waste Management Infrastructure Used During the Reference Year

### 1. Solid Waste Management Facilities

#### a. Landfills

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

Facility Name	Location		Waste Accepted from SWMD (tons)	Percent of all SWMD Waste Disposed	Remaining Capacity (years)
	County	State			
<b><i>In-District</i></b>					
Evergreen Recycling & Disposal	Wood	OH	60,104	40%	36
Wood County Landfill	Wood	OH	54,094	36%	3*
<b><i>Out-of-District</i></b>					
Hancock County Landfill	Hancock	OH	5,811	4%	28
County Environmental of Wyandot	Wyandot	OH	1,968	1%	135
Defiance County Sanitary Landfill	Defiance	OH	642	0%	54
Sunny Farms Landfill LLC	Seneca	OH	318	0%	7
Port Clinton Landfill Inc	Sandusky	OH	38	0%	5
Pine Grove Regional Facility	Fairfield	OH	1	0%	84
<b><i>Out-of-State</i></b>					
Vienna Junction	Monroe	Michigan	27,755	18%	9
Total			150,730	100%	

Sources: Ohio EPA. 2020 Facility Data Report, Table 13 - Landfill Remaining Capacities and Daily Waste Receipts Amounts - Municipal Solid Waste Landfills

Michigan Department of Environmental Quality. 2020 Report of Solid Waste Landfilled in Michigan, Table 10 Facility Capacity

Waste Accepted from SWMD: Table D-1

\* Current expansion will provide 111 years of capacity

Table 4-2 identifies the landfills which received District waste directly (without first being processed at a transfer station) during the reference year 2020.

There are two active landfills within the District, the Wood County Landfill and Evergreen Recycling & Disposal Facility. The Wood County Landfill is a municipal solid waste (MSW) landfill located at 15320 Tontogany Road, Bowling Green, Ohio and is owned and operated by the Wood County Board of Commissioners. Evergreen Recycling & Disposal Facility is a MSW landfill located at 2625 E. Broadway Street, Northwood, Ohio, and is owned and operated by Waste Management.





The Wood County Landfill accepts waste on a much smaller scale than the privately owned Evergreen Recycling & Disposal Facility. Most of the waste disposed at Wood County is generated in-district while Evergreen receives a large amount of out-of-district and out-of-state waste. As shown in Figure 4-2, over 76% of the District's waste is taken to one of these in-district facilities, both of which have sufficient capacity to provide continued services over the planning period.

The two closest out-of-district facilities that presently accept Wood County generated solid waste also have significant permitted available disposal capacities. These two facilities are the Hancock County Landfill (approximately 28 years disposal capacity), and the County Environmental of Wyandot Landfill (approximately 135 years disposal capacity).

Occasionally, District waste will also be disposed at other nearby facilities such as Port Clinton, Sunny Farms in Seneca County, Erie County, Defiance County, and Williams County as they are within hauling distance of Wood County. In recent years, some District waste has also been taken to facilities in Michigan, such as Vienna Junction. While not all of these facilities are utilized in any given year; they are available should presently utilized facilities be unable to accept Wood County generated solid waste.

**Figure 4-2 Method of Waste Disposed in Reference Year**

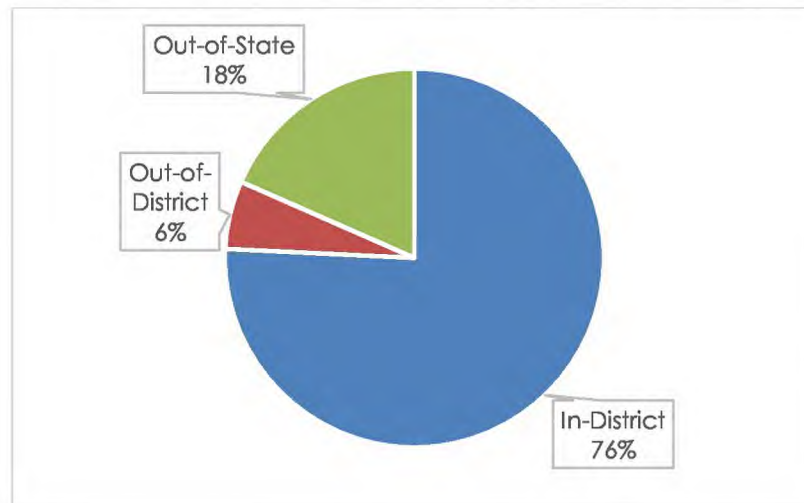


Figure 4-2 shows a breakdown of waste managed in-district, out-of-district, and out-of-state. The majority of waste (76%) is managed in-district, with minor amounts managed outside the district.

b. *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 to be Disposed
	County	State			
<b>In-District</b>					
None		Ohio	0	0%	
<b>Out-of-District</b>					
None		Ohio	0	0%	
<b>Out-of-State</b>					
None			0	0%	
<b>Total</b>			0	0%	0

There were no transfer facilities used by the District in 2020.

c. *Compost Facilities***Table 4-4 Composting Facilities Used by the District in the Reference Year**

Facility Name	County	Material Composted (tons)	Percent of all Material Composted
<b>In-District</b>			
Grand Rapids Composting Facility	Wood	93	0%
Luckey Composting Facility*	Wood	*	0%
Wood County Landfill	Wood	1,471	7%
Henry Landscape	Wood	-	0%
Easily Green Lawn Care	Wood	5,203	26%
Woodville Road Nursery	Wood	700	3%
Hirzel Farms	Wood	9,125	45%
Envirocare Lawn & Landscape	Wood	989	5%
<b>Out-of-District</b>			
City of Fostoria Compost	Seneca	2,489	12%
Floralandscape	Lucas	0	0%
Down 2 Earth	Lucas	18	0%
Number One Landscape	Medina	42	0%
<b>Total</b>		<b>20,130</b>	<b>100%</b>

Source: 2020 ADR; See Table D-1

Notes:

\* 213 tons was taken to Hirzel Farms and is included in that total

- less than one ton was reported

In the reference year 2020, there were 12 composting facilities that accepted residential or commercial yard waste and/or food waste from the District. The Village of Grand Rapids, Village of Luckey, City of Fostoria and the Wood County Landfill are publicly owned facilities, while the other eight facilities are privately owned.

Hirzel Farms operates a Class II composting facility, which accepts yard waste and food waste. Hirzel Farms provided composting services for nearly half of the District's total tonnage.<sup>9</sup>

<sup>9</sup> Hirzel Farms did not report 2020 data; 2019 tonnage was used in this plan.



Most of the composting facilities will accept yard waste from the public. However, Luckey Composting Facility is only available to Luckey residents. Envirocare Lawn and Landscape and Henry Landscape process materials from their operations but are not open to the public. Woodville Road nursery accepts waste from residential collections in addition to materials from its operations. Florallandscape and the City of Fostoria are not located within the District but have accepted yard waste from Wood County residents.

The Wood County Landfill's yard waste facility is open to the public. The landfill grinds brush into mulch to sell to residents. Leaves and grass are composted and used at the facility. The landfill also accepts wood chips from public entities at no charge and regrinds the material for its mulch program.

Most local governments also offer seasonal yard waste collections. Some Wood County communities land-apply yard waste, especially leaves and grass. Brush is chipped and given to residents for mulch. Some of the more urban areas have contracted with haulers to provide pick-up service or host curbside brush and leaf collections. Others have provided a drop-off area for their residents for grass, brush, and leaves.

Composting programs are popular in Wood County as reflected by the above data and divert a significant amount of materials from landfills.

*d. Processing Facilities*

The processing facilities listed in Table 4-5 are those identified for purposes of Ohio Revised Code Section 3734.53(A)(13).

**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		
<b>In-District</b>				
None				0
<b>Out-of-District</b>				
Republic Services - Lorain County Resource Recovery	Lorain	OH	MRF	3,596
Waste Management	Lorain	OH	MRF	466
<b>Total</b>				<b>4,062</b>

During the reference year, recyclables collected from curbside recycling programs in the City of Perrysburg, City of Bowling Green, Lake Township, Village of Walbridge, Village of Millbury, and the District's county-wide 24/7 recycling drop-off program were transported to Republic Service's transfer station in Toledo, Ohio. The materials were then taken by Republic Services to Republic Services Lorain County Resource Recovery material recovery facility (MRF) located in Oberlin, Ohio. The MRF is approximately 87 miles east of Toledo. The MRF has a manual negative sort to remove contamination before moving to an automated multi-stream sorting process.

The City of Northwood, City of Rossford, and Village of Haskins contracted with Waste Management for collection and their recyclables were then taken to the Republic Services' Transfer Station in Toledo, Ohio and eventually processed at the Lorain MRF.

e. *Other Waste Management Facilities*

No other waste management facilities were used during the reference year.

## 2. **Waste Collection**

The collection/hauling system in the District includes both public and private haulers of various sizes.

### C. **Use of Solid Waste Facilities During the Planning Period**

The District anticipates that facilities utilized to manage District-generated waste during the reference year will continue to be available throughout the planning period, and in aggregate will continue to provide adequate capacity for the District's needs. Each landfill which received a substantial percentage of District-generated waste during 2020 is estimated to have a minimum of 25 years remaining capacity. As discussed above, over 76% of District waste was sent to in-district landfills in 2020, both of which have sufficient capacity to provide continued services over the planning period.

Since composting is a well-established program in the District, the volume of materials composted is expected to increase slightly over the planning period. The District anticipates composting facility capacity will be adequate over the planning period due to the large number of public and private facilities currently providing these services.

The District is unaware of any capacity limitations for the Republic Services Lorain County Resource Recovery MRF located in Oberlin, Ohio.

### D. **Siting Strategy**

#### Purpose of the Siting Strategy

If the SWMD will not have access to enough landfills to dispose of all waste the SWMD will need to dispose of then the policy committee must develop a plan for obtaining additional disposal capacity.

Although unlikely, the policy committee can decide that it is in the SWMD's best interest to construct a new solid waste landfill facility to secure disposal capacity. In that situation, Ohio law requires the policy committee to develop a strategy for identifying a suitable location for the facility. That requirement is found in [Ohio Revised Code Section 3734.53\(A\)\(8\)](#). This strategy is referred to as a siting strategy. The policy committee must include its siting strategy in the solid waste management plan. If this solid waste management plan includes a siting strategy, then that strategy is summarized in this chapter and presented in full in Appendix S.



Pursuant to Ohio law and Ohio EPA's 4.1 Format, the District is required to include a siting strategy in the solid waste management plan update if the solid waste district decides to construct a new solid waste facility to ensure disposal capacity.

The District Policy Committee has determined that sufficient disposal capacity exists for the entire planning period. The District does not anticipate constructing any solid waste facilities or contracting with a private entity to do so on behalf of the District. Thus, no siting criteria is necessary for this plan.

## E. Designation

### Purpose of Designation

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

The policy committee decides whether the board of directors has the authority to designate facilities. The policy committee does this in the solid waste management plan.

Even if the policy committee gives the board of directors the authority to designate facilities, the board decides whether to act on that authority. If it chooses to use its authority to designate facilities, then the board of directors must follow the process that is prescribed in [ORC Section 343.014](#). If it chooses not to designate facilities, then the board of directors doesn't act on its authority.

Once the board of directors designates facilities, the SWMD's waste can only go to designated facilities. That means, no one can legally take waste from the SWMD to undesignated facilities, and owners/operators of undesignated facilities cannot legally accept waste from the SWMD. The board of directors can grant a waiver to allow an undesignated facility to take the SWMD's waste.

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

### 1. Description of the SWMD's Designation Process

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

The Solid Waste Management District expressly reserves the right to continue facility designations in accordance with the authority granted by ORC Section 343.014. The



District may also enter into joint use agreements or other contracts beneficial to the District.

The District currently implements a facility designation program; any entity wishing to deliver solid waste generated within the District to an undesignated facility must submit a written request for waiver of designation to the Board of Commissioners that complies with the following waiver process. The waiver request shall include the following:

- The name, address, telephone number and email address of the person requesting the waiver.
- The source and name of the generator of the solid waste.
- The name, address, telephone number, and email address of the undesignated solid waste transfer, disposal, recycling or resource recovery facility where solid waste generated within the District will be delivered if the waiver is approved by the Board of Commissioners.
- The estimated annual tonnage of the solid waste that will be delivered to the undesignated solid waste transfer, disposal, recycling or resource recovery facility covered by the waiver request.
- An explanation describing how approval of the waiver request is not inconsistent with the projections contained in the District's solid waste management plan under divisions(A)(6) and (7) of section 3734.53 of the Revised Code.
- An explanation describing how the approval of the waiver request will not adversely affect implementation and financing of the District's solid waste management plan pursuant to the implementation schedule contained in the District's plan under division(A)(13)(a) of section 3734.53 of the Revised Code.

The Solid Waste Management District office will review the request and may request additional information if necessary. Any waiver granted by the Board of Commissioners shall be in the form of a waiver agreement between the Board and the entity seeking the waiver. The waiver agreement shall contain the terms and conditions upon which the waiver was granted and the payment by the grantee of the waiver fee, if any, assessed on each ton of solid waste covered by the waiver.

## **2. *List of Designated Facilities***

The District implemented a designation contract fee of \$2.00 per ton for municipal solid waste on October 1, 2011. Currently, the District has designated 13 facilities. Agreements were established with designated transfer facilities and landfills for a period of five years. These agreements ensure that all municipal solid waste generated in Wood County, whether disposed within or outside the County, support state-mandated programs and the solid waste management plan. The agreements with existing facilities were renewed

on October 1, 2016, and then again on October 1, 2021 for an additional five-year term. The current agreements may be renewed again for an additional five-year term in 2026.

The District has no plans to change the existing designation fee amount. However, under the current designation agreements, the District has the authority to increase, or decrease, the fee amount.

**Table 4-6 Facilities Currently Designated**

<b>Facility Name</b>	<b>State</b>	<b>County</b>	<b>Facility Type</b>	<b>Year Designated</b>
American Landfill, Inc.	Ohio	Stark	Landfill	2011, 2016, 2021
Carleton Farms Landfill	Michigan	Wayne	Landfill	2011, 2016, 2021
County Environmental Landfill of Wyandot	Ohio	Wyandot	Landfill	2011, 2016, 2021
Defiance County Landfill	Ohio	Defiance	Landfill	2011, 2016, 2021
Erie County Sanitary Landfill	Ohio	Erie	Landfill	2011, 2016, 2021
Evergreen Recycling & Disposal Facility	Ohio	Wood	Landfill	2011, 2016, 2021
Hancock County Landfill	Ohio	Hancock	Landfill	2011, 2016, 2021
Henry County Landfill	Ohio	Henry	Transfer Facility	2011, 2016, 2021
Marion County Transfer Station	Ohio	Marion	Transfer Facility	2011, 2016, 2021
Port Clinton Landfill	Ohio	Ottawa	Landfill	2011, 2016, 2021
Sunny Farms Landfill, LLC	Ohio	Seneca	Landfill	2011, 2016, 2021
Vienna Junction Landfill	Michigan	Monroe	Landfill	2011, 2016, 2021
Wood County Landfill	Ohio	Wood	Landfill	2011, 2016, 2021

## CHAPTER 5 WASTE REDUCTION AND RECYCLING

### Purpose of Chapter 5

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

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

Before deciding upon the programs and services that are necessary and will be provided, the policy committee performed a strategic, in-depth review of the SWMD'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 SWMD by answering questions such as:

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

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

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



## A. Solid Waste Management District's Priorities

The Ohio EPA Plan Format 4.1 required the District to perform a comprehensive evaluation of its programs and services through a series of analyses. The District then drew conclusions and identified findings from each analysis. The findings included successes and areas that could be improved. From the findings, the District developed a list of potential actions that could be performed during the planning period. See Appendix H for more detailed information about the District's analyses and findings.

Next, the District evaluated the potential actions and prioritized them. As a result of this process, the District narrowed down a list of programs the District could reasonably perform, that would demonstrate compliance with the 2020 State Plan goals and reduce waste disposal and increase recycling/reduction in Wood County. See Appendix I for more detailed information about the potential actions and prioritized programs.

The District's first priority is to continue existing programs that are key to meeting the 2020 State Plan goals. This includes maintaining the existing residential recycling infrastructure, economic incentive programs, education/outreach, and technical assistance to residents and the commercial/industrial sectors. The District's next priority involves improvements or expansions to key existing programs and development or exploration of new programs that could help improve access to recycling and/or diversion opportunities. Finally, the District identified some actions involving more permissive areas of programming that the District will not commit to during the planning period but will consider for the future.

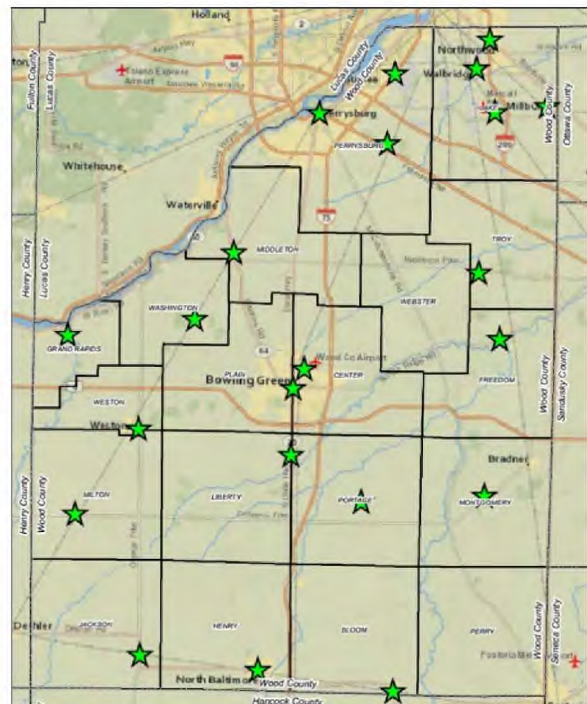
## B. Program Descriptions

A brief summary of the District's programs is below. See Appendix I for complete program descriptions.

### 1. Residential Recycling Infrastructure

The primary residential recycling infrastructure in the District consists of non-subscription curbside recycling services, subscription curbside recycling services, full-time urban drop-off recycling sites, full-time rural drop-off recycling sites, and part-time rural drop-off recycling sites.

The combination of these curbside and drop-off programs provides most residents of the District with convenient opportunities to recycle.



## 2. Curbside Recycling Services

**Table 5-1 Curbside Recycling Services**

ID#	Name of Curbside Service/Community Served	Service Provider	When Service Was/Will be Available
NCS1	City of Bowling Green	Republic Services	Ongoing through planning period
NCS2	City of Perrysburg	Republic Services	Ongoing through planning period
NCS3	Village of Haskins	Waste Management	Ongoing through planning period
NSC4/SC3	City of Northwood	Waste Management	Non-subscription through 2020; Subscription through planning period
NSC5/SC4	City of Rossford	Waste Management	Non-subscription through 2020; Subscription through planning period
NC6	Village of Millbury	Republic Services	Service stopped in 2021
SC1	Lake Township	Republic Services	Ongoing through planning period
SC2	Village of Walbridge	Republic Services	Ongoing through planning period

All District curbside programs are automated, single stream collection. Each community independently procures recycling services. The two primary providers for the area are Republic Services and Waste Management. Some curbside programs also offer free or fee-based pickup of appliances, carpet, and other hard to recycle items (e.g., City of Perrysburg, Bowling Green).

## 3. 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	Bowling Green Recycling Center	Bowling Green Recycling Center	Ongoing through planning period
FTU2	Perrysburg Township	Republic Services	Ongoing through planning period
FTR1	Bloomdale Village	Republic Services	Ongoing through planning period
FTR2	Custar/Milton Township	Republic Services	Ongoing through planning period
FTR3	Grand Rapids Village	Republic Services	Ongoing through planning period
FTR4	Jackson Township/Hoytville Village	Republic Services	Ongoing through planning period
FTR5	Pemberville Village	Republic Services	Ongoing through planning period
FTR6	Portage Village	Republic Services	Ongoing through planning period
FTR7	Portage Township	Republic Services	Ongoing through planning period
FTR8	Troy Township	Republic Services	Ongoing through planning period
FTR9	Tontogany Village	Republic Services	Ongoing through planning period
FTR10	Wayne Village	Republic Services	Ongoing through planning period
FTR11	Weston Village	Republic Services	Ongoing through planning period
PTR1	North Baltimore Village	Bowling Green Recycling Center	Ongoing through planning period



Name	Start Date	End Date	Goal
Bowling Green Recycling Center	Existing	Ongoing	1, 2

The Bowling Green Recycling Center (BGRC) is a non-profit, full-time, urban drop-off site located in the City of Bowling Green. BGRC is open 24 hours per day. Individuals must sort their materials prior to use. The facility is centrally located in the county and capable of accepting large amounts of recyclables. BGRC is a recycling option for those who live in multi-family housing units, and for commercial businesses, offices and other similar organizations. The facility also serves as an additional recycling location for rural residents.

Name	Start Date	End Date	Goal
Wood County 24/7 Residential Recycling Drop-Off Program	Existing	Ongoing	1, 2

In 2018, the Wood County SWMD implemented a countywide 24/7 permanent drop-off residential recycling program for areas not served by curbside programs. The program has 12 sites throughout the county with 51 total bins. The District contracts with Republic Services for collection, transportation and processing. The sites have a varying number of containers based on the population needs of each location. Recyclables do not need to be sorted prior to placement in bins. The District's contract with Republic Services will be expiring in 2023 and the District will be seeking competitive proposals for the service.



Name	Start Date	End Date	Goal
Village of North Baltimore	Existing	Ongoing	1, 2

The Village of North Baltimore offers a part-time rural drop-off program for southern Wood County. The Village collects recycling weekly on Saturday for three hours and the materials are taken to the Bowling Green Recycling Center. The materials must be sorted.

#### **4. Mixed Solid Waste Material Recovery Facility**

There are no mixed solid waste material recovery facilities in the District and none are anticipated through the planning period.

#### **5. Multi-Family Unit Recycling**

The Bowling Green Recycling Center provides residents who dwell in multi-family housing with an opportunity to recycle. Additionally, multi-family housing residents may use the various 24/7 permanent drop-off sites located throughout the county.



## 6. Other Residential Recycling Programs

There are no other residential recycling programs within the District.

## 7. Commercial/Institutional Sector Reduction and Recycling Programs

Due to the commingling of residential and commercial recycling during collection and processing, the District cannot calculate what percent of the material recovered by recycling is from commercial sources. The same problem applies to municipal solid waste that is taken to a landfill.



### A. School Recycling

Name	Start Date	End Date	Goal
Wood Lane Industries Collection Program	Existing	2020	2

For many years the District partnered with Wood Lane Industries (WLI) in making weekly recycling collection available to schools, government offices, churches, apartment complexes, and other organizations throughout Wood County. The materials were delivered to the BGRC. In 2020, WLI terminated the services and informed the District the program was no longer feasible due to Covid-19 and increased costs. Offices and institutions had to find recycling alternatives very quickly. The District provided contact information to several organizations regarding alternative services.

Name	Start Date	End Date	Goal
School District Recycling Program (Pending Evaluation Findings)	2023	Ongoing	2

The District will reach out to local school districts to determine what kind of recycling program each school district has implemented since the termination of WLI services. The District will explore with school officials the possibility of coordinating a school-only weekly drop-off program paid for by the schools. The schools may be able to purchase the services under a single contract provider.

Name	Start Date	End Date	Goal
Bowling Green State University Partnership	Existing	Ongoing	1-4, 6, 7

The District has had various partnerships with Bowling Green State University (BGSU) since the 1980s. The District provides BGSU funding as part of the per capita incentive grant program. Currently, comingled recyclables are collected campus wide. The campus also provides several unique recycling programs for students, faculty and staff. A composting program is also ongoing at one of the larger dining halls. The District works in partnership with BGSU on several education/outreach events.

*B. Collection Services (small businesses, government offices, etc.)*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood County Government Recycling	2021	Ongoing	2

After WLI discontinued collection service in 2020, Wood County government offices formed two programs to manage county recyclables. At the Wood County Courthouse Complex, maintenance assumed the responsibility for collecting and transporting materials to the Bowling Green Recycling Center (BGRC). At the East Gypsy Lane Complex, the county installed two drop-off boxes for the Wood County Sheriff's Office/Wood County Jail and the Wood County Department of Job and Family Services, which are serviced weekly by Republic Services. Several other government agencies contracted separately with Republic to have a drop-off box at their facilities.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood Lane Industries Collection Program	Existing	2020	2

See "School Recycling" section above for description of Wood Lane Industries program.

*C. Special Event Recycling*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
ClearStream Lending Program	Existing	Ongoing	1, 2, 4

The District currently owns 85 ClearStream recycling containers, which have been used at the Wood County Fair, Pemberville Free Fair, The Black Swamp Arts Festival, road races, and other events upon request. The design of these containers with their specially designed lids and clear bags encourages recycling of aluminum cans and plastic bottles with minimal contamination. Groups will pick up the containers from the Solid Waste District office, return them after use and deliver the bags of recyclables to the Bowling Green Recycling Center.

*D. Waste Assessments/Waste Audits*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Waste Audits	Existing	Ongoing	2, 5

Upon request, the District will provide free waste audits or waste assessments to commercial businesses located in the District. The audits or assessments will be performed by District staff. The audit will include a site visit and follow-up summary report. The District will also provide information on securing a hauler, broker, or processor that accepts the waste streams not currently being recycled (when available).



*E. Contracting Assistance*

The District does not provide contracting assistance to the commercial/institutional sector.

*F. Workgroup/Roundtable*

The District does not participate in any workgroups/roundtables. This program may be considered in the future.

*G. Award/Recognition*

The District does not provide an award/recognition program. This program may be considered in the future.

*H. Other Programs*

There are no other programs specific to the commercial/institutional sector.

**8. Industrial Sector Reduction and Recycling Programs***A. Waste Assessments/Waste Audits*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Waste Audits	Existing	Ongoing	2, 5

Upon request, the District will provide free waste audits or waste assessments to industrial businesses located in the District. The audits or assessments will be performed by District staff. The audit will include a site visit and follow-up summary report. The District will also provide information on securing a hauler, broker, or processor that accepts the waste streams not currently being recycled (when available).

*B. Collection Services*

The District does not participate in any collection services for industry.

*C. Contracting Assistance*

The District does not provide contracting assistance to industrial sector.

*D. Workgroup/Roundtable*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Economic Development Monthly Luncheons	2023	Ongoing	2, 5



District staff will attend monthly economic development business roundtable luncheons to network with local businesses and provide updates on District programs and services. The luncheons are sponsored by the Wood County Economic Development Office and are held throughout the county. The events are well-attended by businesses and community leaders. In the future, the District may consider forming a roundtable for industry to discuss solid waste management issues.

#### *E. Award/Recognition*

The District does not provide an award/recognition program. This program may be considered in the future.

#### *F. Other Programs*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Ohio Materials Marketplace	Existing	Existing	2, 5

The District will promote and increase awareness of the Ohio Materials Marketplace (OMM) to the industrial sector. Ohio EPA implemented this tool to assist businesses with their waste recovery and reuse efforts. The OMM is a free, online platform for participants to trade usable wastes. To date, OMM users have diverted a cumulative 3.7 million pounds of material from Ohio's landfills and realized more than \$208,000 in savings. The District will provide information about OMM on the District's website, in electronic newsletters and through other industry-related outreach opportunities.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Recycle Ohio Market Development Grants	Existing	Ongoing	2, 5

The District will continue to promote and sponsor eligible industrial facilities for Recycle Ohio Market Development Grants. The District will provide information about grant opportunities on the District's website, in electronic newsletters and through other industry-related outreach opportunities.

### **9. Restricted/Difficult to Manage Wastes**

#### *A. Yard Waste*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Yard Waste/Composting	Ongoing	Ongoing	1, 2, 6



There are ten Class IV composting facilities and two Class II composting facilities utilized by Wood County. The Wood County Landfill composting site also provides yard waste disposal for county residents and commercial businesses. Many of the cities, villages and townships within the county also offer composting services to their residents. The names and locations of the composting facilities are posted on the District's website. The District encourages residents to compost yard waste

and food waste at home in compost bins, piles, or tumblers. The District provides "how to" guides and troubleshooting guides for composting.

Name	Start Date	End Date	Goal
Christmas Tree Recycling	Ongoing	Ongoing	1, 2, 6

The District promotes Christmas tree recycling during the months of December and January through its "Treecycle" advertisements, displays, and on the District website. Villages, cities, townships, and parks within the county are contacted to gather current locations and a schedule for tree collection. An advertisement/display is then updated and designed including a map to encourage residents to recycle their Christmas tree after the holidays. Residents may also dispose of one Christmas tree at no charge at the Wood County Landfill during the month of January. Collected trees are then chipped and recycled into mulch or used as temporary wildlife habitat by the local parks.

*B. Household Hazardous Waste, Batteries, Appliances, Electronics, etc.*

Name	Start Date	End Date	Goal
Household Recycling Directory	Ongoing	Ongoing	1, 2, 6

The strategy of the District concerning household hazardous waste is to educate the public on alternative materials and best disposal practices. The District has identified businesses and recycling programs for the majority of materials residents inquire about including electronics, batteries, tires, chemicals, unused prescriptions, paint and similar difficult to recycle materials. The District maintains and distributes a comprehensive household recycling directory to assist residents with finding solutions for their hard to recycle wastes. In some cases, the business charges a fee. However, residents are provided with an immediate solution, which minimizes the risk associated with storing these types of materials. Residents and recyclers are also encouraged to contact the District with new recycling opportunities.

Name	Start Date	End Date	Goal
Electronics Collection Events	Ongoing	Ongoing	1, 2, 6

The City of Perrysburg partners with AIM Ecycling for recycling of electronics collected from the city's curbside program. This is a free service offered to all residents of Perrysburg.



Perrysburg Township has partnered with Recycle I.T. USA and maintains a free drop-off site for electronics. Both services accept almost anything with a cord, including computers, printers, stereo equipment, microwaves, and small appliances. Televisions are not accepted at the site and must be taken to the Lucas County location for a fee. Several other private companies provide electronic recycling services, which are listed on the District's website.

Bowling Green State University and Way Library in Perrysburg, Ohio also recently sponsored electronics collection events.

The District does not currently sponsor any collection events for electronics. However, given the increase of electronics in daily life, it may be an event or program the District should consider for the future.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood County Landfill	Existing	Ongoing	1, 2, 6

The Wood County Landfill accepts several difficult wastes for recycling including scrap tires, lead acid batteries, appliances (including refrigerated units), and yard waste. The landfill is open to both residents and businesses. There are fees associated with disposal of all these items, except lead acid batteries and scrap metal. The landfill is open Monday - Friday and half a day on Saturday. The landfill and OEPA provide the district with annual statistics of items collected for recycling.

### *C. Scrap Tires*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood County Landfill	Existing	Ongoing	1, 2, 6

The Wood County Landfill accepts several difficult wastes for recycling including scrap tires, lead acid batteries, appliances (including refrigerated units), and yard waste. The landfill is open to both residents and businesses. There are fees associated with disposal of all of these items, except lead acid batteries and scrap metal.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Scrap Tire Program	Existing	Ongoing	1, 2, 6

The District's strategy concerning scrap tires is to focus on proper disposal. The District is committed to having a legal location for individuals to take scrap tires. At this time, several tire dealers and both landfills in the District accept scrap tires for recycling. The District occasionally hosts special tire collection events for residents. The District will continue educating the public on proper tire disposal through brochures and the District website.



D. *Pharmaceuticals*

Name	Start Date	End Date	Goal
Pharmaceuticals	Ongoing	Ongoing	1, 2, 6

Currently, eight local law enforcement agencies in the District have permanent drop-off locations for pharmaceuticals. Additionally, many private pharmacies (e.g., CVS) will accept pharmaceuticals. The District provides information to residents on available locations to properly dispose of pharmaceuticals and promotes non-District collections on the District website.

10. **Other Material Specific Programs**A. *Food Waste*

Name	Start Date	End Date	Goal
Food Waste	Ongoing	Ongoing	1, 2, 6

Hirzel Farms operates a Class II composting facility in the District. It accepts food waste materials from outside sources in addition to materials derived from the Hirzel Canning operations. This facility also accepts waste from the residential organics curbside collection recycling program in the Village of Luckey operated by N.A.T. Transportation. Bowling Green State University diverts postconsumer food waste to Hirzel Farms along with several other businesses and organizations within Wood County.

In 2021, the City of Bowling Green established a residential Food Waste Drop-Off. The city contracted with GoZero on the project. All collected food waste is taken to Andre Farms



in Wauseon, Ohio to be composted. The following food items are accepted: baked goods and pasta, beans and eggs, fats and sugars, fruits and vegetables, greasy pizza boxes, paper towels and napkins (unlined paper items), and raw/cooked meat, bones and dairy. The program is limited to residential participation, but the city encourages businesses to contact GoZero directly for commercial services. The District will be working with the city to obtain data and information about this new program.

B. *Glass*

Name	Start Date	End Date	Goal
Bowling Green Recycling Center Glass Subsidy	Existing	Ongoing	1, 2

The District pays the Bowling Green Recycling Center \$30/ton to offset the cost of glass recycling at its facility.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
O-I Glass/City of Perrysburg Glass Drop-Offs	May 2021	Ongoing	1, 2

In 2021, the City of Perrysburg partnered with O-I Glass Inc. to create a glass drop-off recycling opportunity for residents and businesses. O-I Glass Inc. is an American Fortune 500 company that specializes in container glass products with its world headquarters located in Wood County. The glass will be used by O-I Glass in its manufacturing process. There are three drop-off locations in the Perrysburg area.

### *C. Fiber/Paper*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Personal Shredding Events	Existing	Ongoing	1, 2, 4

From 2018 to 2020, the District partnered with the Wood County Department of Jobs and Family Services (JFS) to host an annual Personal Shredding Event for Wood County residents. Residents could bring up to five boxes of material to be shredded securely onsite and then recycled. In return, residents were asked to donate a toy or gift card to support children involved in the JFS system during the holidays. The District paid for the cost of the shredding contract and provided staffing and promotional assistance. The event is popular, and the District is working with JFS to host two shredding events annually in the future.

## **11. Funding/Grants**

### *A. Incentive Based Grants*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Per Capita Incentive Grant Program	1993	Ongoing	1, 2

The District provides incentive funding to each local government that participates in a residential recycling program. The amount of funding is subject to availability of funds. Currently, the allocation is \$1.00 per person for providing a drop-off or participating in the county's drop-off program and \$1.50 per person for providing a curbside program. The local governments are paid annually, and the population is based upon the most recent federal census. In return for receiving these funds, each local government must annually report on the volumes of materials recycled and diverted from the landfill.

### *B. Improvement Grants*

The District does not offer any improvement grants.



## 12. Economic Incentives

### A. Volume-Based Billing/Pay-As-You-Throw Trash Collection Services

The District does not have any Volume-Based Billing/Pay-As-You-Throw Trash Collection Services.

### B. Financial Award Programs (e.g., RecycleBank, "Get Caught Recycling")

The District does not have any financial award programs. The District may consider this type of program as part of its Social Marketing Strategy to reduce contamination in recycling. See Appendix L.

### C. Other Economic Incentive Programs

The District does not have any other economic incentive programs.

## 13. Market Development Programs

The District does not have any market development programs.

## 14. Feasibility Studies

The District does not have feasibility studies ongoing or planned.

## 15. Facilities

### A. Materials Recovery Facilities/Recycling Centers

The District does not have any materials recovery facilities/recycling centers.

### B. Landfills

Name	Start Date	End Date	Goal
Wood County Landfill	Existing	Ongoing	1, 2

The Wood County Landfill is owned and operated by the Wood County Board of Commissioners. It is a municipal solid waste landfill permitted by Ohio EPA. The landfill currently has 3.4 years of remaining capacity but has a pending permit-to-install for an expansion project that would increase capacity for up to 111 years based on current tonnage.

Name	Start Date	End Date	Goal
Evergreen Recycling & Disposal Facility	Existing	Ongoing	1, 2



Evergreen Recycling & Disposal Facility is a municipal solid waste landfill owned by Waste Management. It accepts municipal and industrial waste. According to the 2020 Ohio Solid Waste Facility Data Tables, the landfill has 36 years of remaining landfill capacity assuming the current rate of use.

#### *C. Closed Facility Maintenance (Closure/Post-Closure Care)*

There are no closed facilities located in the District.

#### *D. Transfer Facilities*

There are no transfer facilities located in the District.

#### *E. Composting Facilities*

See "Yard Waste/Composting" above.

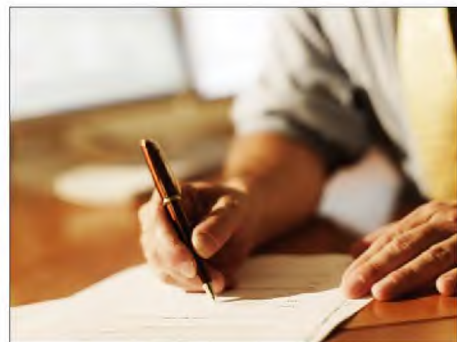
### **16. Data Collection**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Residential Recycling Survey	Existing	Ongoing	1, 2
Commercial and Industrial Business Surveys	Existing	Ongoing	1, 2

The District collects survey information annually from local governments regarding their recycling programs for use in the District's annual district report. The survey is one page long and requests the following information: disposal landfill used, service provider, tons of waste collected, curbside recycling provider, the pounds of materials recycled, tons of yard waste diverted (leaves, grass, brush) and where the material is taken, and number of tires collected. The local governments obtain their data from their service provider.

If the community participates in the District's drop-off program, it does not report any pounds of recyclable as that information is provided directly to the District from Republic Services.

The District also collects survey information from commercial and industrial generators. The District uses an Ohio EPA survey template, and the mailing list is developed from the prior year's commercial sources list. The District sometimes has difficulty obtaining responses.



### **17. Outreach, Education, Awareness, and Technical Assistance**

Under Goal 3 of the 2020 State Plan, the District must provide the following required programs:

- A website;
- A comprehensive resource guide;
- An inventory of available infrastructure; and
- A speaker or presenter.

The District must also have an outreach and marketing plan in accordance with Goal 4.

#### A. *Web Page*

The District's website [www.recyclewoodcounty.org](http://www.recyclewoodcounty.org) is updated regularly. The homepage provides a wide variety of helpful recycling information for residents and includes contact information and a link to the District's Solid Waste Management Plan. The website also includes links with information about the Landfill, Recycling, Events, Recycling Outreach and About Us. Each of these links provide additional categories of information. Residents can also sign up for the quarterly e-newsletter "WOOD You Recycle?" on the website and view several recycling tutorial videos.



#### B. *Resource Guide*

The District has a comprehensive resource guide on its website which helps users find appropriate places to recycle and/or dispose of various materials. Information is also provided about composting and yard waste disposal opportunities. The recycling guide information can be accessed electronically on the District website. Printed copies can also be provided, upon request. The District periodically reviews this information to ensure it is complete, accurate and user-friendly.

#### C. *Infrastructure Inventory*

The District's infrastructure inventory is posted on the District website and a hard copy is available for distribution at outreach events.

#### D. *Education Provider*

The District employs a Recycling Outreach Coordinator to perform education and outreach activities. This position is responsible for creating and providing waste-related educational programming for youth and adults, providing landfill tours, providing technical assistance, and participating in outreach events. Presentations are tailored to the target audience.

#### D. *Outreach and Marketing Plan*

The 2020 State Plan requires the District to provide education, outreach, marketing, and technical assistance regarding reduction and reuse through an outreach and marketing plan. The outreach and marketing plan will be the District's comprehensive strategy for providing education, technical assistance, and outreach to all of its constituents. The



outreach and marketing plan will also contain the strategy for evolving the District's environmental education programs away from traditional awareness education towards changing peoples' behaviors.

The District must incorporate the following three components into its outreach and marketing plan.

- The District must address five target audiences (residents, schools, commercial/institutional, industrial, and communities/elected officials);
- The District must follow basic best practices when developing and selecting outreach programs; and
- The District must select an outreach priority and provide education and outreach programs to all appropriate audiences in the context of the priority using social marketing principles and tools. The District's strategy for addressing the outreach priority will be a portion of the overall outreach and marketing plan.

See Appendix L for more information about outreach & marketing plan requirements.

**Table 5-D. Summary of Outreach Programs and Targeted Audience**

Outreach Program	Start Date	End Date	Goal	Target Audience				
				Residents	Schools	Industrial	Institutions/ Commercial	Elected Officials
Website*	Existing	Ongoing	3, 4	X	X	X	X	X
Comprehensive Resource Guide*	Existing	Ongoing	3, 4	X			X	X
Infrastructure Inventory*	Existing	Ongoing	3, 4	X			X	X
Campaign to Reduce Drop-Off Recycling Contamination	2023/2024	Ongoing – based on evaluation	4	X			X	X
Speaker/Presentations	Existing	Ongoing	3, 4	X	X	X	X	X
Advertising/Media/Social media	Existing	Ongoing	4	X	X	X	X	X
Electronic Newsletter	Existing	Ongoing	4	X	X	X	X	X
Wood County Government Recycling	Existing	Ongoing	4				X	
Commercial Survey Outreach	2023	Ongoing	4				X	
Environmental Education Loan Box Program	Existing	Ongoing	4		X			
Special Events	Existing	Ongoing	4	X	X			X
Curriculum-based Presentations for Schools	Existing	Ongoing	4		X			
Economic Development Roundtable Luncheons	2023	Ongoing	4			X		
Annual Township Meeting/Community Outreach	Existing	Ongoing	4					X

Note: \* website, comprehensive resource guide, recycling infrastructure were discussed above.



## 1. Residential Sector

Name	Start Date	End Date	Goal
Campaign to Reduce Drop-Off Recycling Contamination	Research to start 2023/2024	Ongoing	1, 2

The District will be developing a marketing campaign directed at two neighboring 24/7 drop-off recycling locations with the goal of reducing contamination at the sites. The initial steps will involve performing waste audits and resident surveys at the drop-off locations over several weeks. The District will then document the findings and this information will serve as a baseline for the campaign. The District will work directly with the mayors of each community to get a better understanding of the local site issues and will seek their support in marketing the program on Facebook and other local social media outlets.

After obtaining local support and compiling audit/survey responses, the District will provide outreach to the communities by a combination of targeted efforts, such as mailers, billboards, presentations, fair booth, direct contact with residents and other similar outreach. The District may try to incorporate a reward or recognition for those residents found to be "recycling right" at the site.

Several months later, District staff will perform a follow-up waste audit and resident survey at the drop-off locations and compare the results. If contamination has been reduced and/or survey information supports changed behavior, the strategy may be extended to other communities.

Name	Start Date	End Date	Goal
Advertising/Media	Ongoing	Ongoing	1, 2, 4

The District relies heavily on its website as a means of promoting events, describing services, identifying recycling and waste disposal opportunities, and educating the public on available services and infrastructure. When necessary, the District will also purchase advertisement space in local publications.

Prior to the Covid-19 pandemic, the District purchased at least one billboard advertisement per year as part of the annual billboard artwork contest. The contest is open to all kindergarten – 7<sup>th</sup> grade students residing in Wood County. Each year, the District selects a theme and the students are asked to design their artwork promoting this message. One winner is selected, honored during a school assembly and then the child's entry is posted on a local billboard for one month.



The Recycling Outreach Coordinator is a guest on a local radio station in Bowling Green, Ohio at least quarterly. This



provides the District with an opportunity to promote recycling, upcoming events, and communicate program challenges/successes with a large audience. Occasionally, the local newspapers will cover a recycling related story, which also provides program exposure. The District has not utilized television advertisements due to the cost.

The District has a large collection of brochures and pamphlets describing various programs. These brochures are distributed at community events, presentations and other locations throughout the County. The District attempts to direct residents to the website rather than print large number of brochures and pamphlets that frequently need updated.

Currently, the District does not have an official presence on social media. On occasion, the Recycling Outreach Coordinator will provide information to a community leader to share on the community's Facebook page or other social media outlet. This has been an effective tool to reach a specific audience.

Name	Start Date	End Date	Goal
Speaker/Presentations	Ongoing	Ongoing	1,2,3,4

Historically, the District's primary focus for presentations has been education and public awareness about solid waste management and recycling. Some of the programs provided by the Outreach Recycling Coordinator include:

- Recycle Right – education on proper recycling;
- Compost 101 – basics of backyard composting;
- Home Safe Home – safe alternatives to household chemicals; and
- Recycled arts and crafts – upcycle common items into crafts.

The District's new strategy will be to incorporate social marketing principles into these outreach efforts and focus on changing behavior rather than just creating awareness. Presentations will be tailored to the target audience.

#### Earth Day

The District partners with over twenty (20) community organizations and businesses to coordinate events, volunteer opportunities and educational presentations throughout the month of April. Each partner is responsible for organizing opportunities for community involvement throughout the month, which are advertised/promoted by all involved.



#### Wood County Fair

In 2020, the Wood County Fair was canceled due to the Covid-19 pandemic but returned for the 2021 season. The District utilizes its education trailer to set up a display at the fair. The display includes several brochures on recycling and proper waste disposal, and a staff member is available to answer questions about solid waste management practices in Wood County.



The District disperses the largest quantity of brochures, household recycling guides and promotional materials during this event. The District also provides ClearStream containers and works with the Fair Board to implement additional recycling and waste reduction strategies.

#### Tours

The District provides tours of the Wood County Landfill. Groups are taken to the working face where garbage is being compacted. The District explains the landfill construction process and the technology required to dispose of garbage safely.

#### Shredding Event

In 2018 - 2020, the District partnered with the Wood County Department of Jobs and Family Services (JFS) to host an annual Personal Shredding Event for Wood County residents. Residents could bring up to five boxes of material to be shredded securely onsite and then recycled. In return, residents were asked to donate a toy or gift card to support children involved in the JFS system during the holidays. The District paid for the cost of the shredding contract and provided staffing and promotional assistance. The event is popular, and the District is working with JFS to host two shredding events annually in the future.



#### Other Special Events

The District generally participates in 15-20 events per year. These events provide an opportunity to interact with residents within the community. Brochures, Household Recycling Guides, and promotional items are provided at all events.

Name	Start Date	End Date	Goal
Electronic Newsletter	Ongoing	Ongoing	1, 2

The District issues a quarterly electronic newsletter called "WOOD you recycle?" that contains updates about recycling programs and upcoming events. The e-newsletter also provides staff updates and information about the landfill, composting, ocean pollution, littering, electronics recycling, recycling right and other similar topics.

## **2. Commercial/Institutional Sector**

Name	Start Date	End Date	Goal
Wood County Government Recycling	Ongoing	Ongoing	1, 2

The District will contact each agency annually to identify the person responsible for the recycling program. District staff will check on participation, offer help as necessary and verify the infrastructure and/or containers are sufficient. Some of the Wood County recycling is taken to the Bowling Green Recycling Center and some is collected by Republic Services. It is difficult to determine agency volumes given the method of collection.



<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Commercial Survey Outreach	2023	Ongoing	1, 2

The amount of commercial recycling surveys received by the District continues to decrease. The District does not believe a marketing strategy will be effective due to the voluntary nature of the survey. The District will attempt to reach more commercial businesses by direct contact, emails to businesses, attendance at Chamber of Commerce functions and networking. The District will try to assist small businesses to find recycling solutions at the Bowling Green Recycling Center or with a private provider. The District will also check-in with some of the agencies that were previously served by WLI to make sure that they have found an alternative recycling program.

### **3. Industrial Sector**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Economic Development Roundtable Luncheons	Ongoing	Ongoing	1, 2

District staff will attend the monthly economic development roundtable luncheons to network with local industry and provide technical assistance and/or grant opportunities when available.

### **4. Political Leaders**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Annual Township Meeting/Community Outreach	Ongoing	Ongoing	1, 2

The District provides a booth at the annual Township Trustee Winter Meeting. The event is attended by county agencies, township trustees, county elected officials and some state officials. The District did not attend in 2020 due to the pandemic but expects to provide a booth in the future. This event is an excellent opportunity to network with elected officials. The District is given an opportunity to provide an update on the county's 24/7 drop-off recycling program at the meeting.

The District also has direct communication with mayors, trustees, and other officials from the host communities of the 24/7 drop-off program. The District has found that when issues arise at the sites, it is best to deal directly with local officials to understand their concerns and find solutions. The District will quarterly check-in with the 24/7 drop-off program host community leaders.

## 5. Schools

Name	Start Date	End Date	Goal
Environmental Education Loan Box Program	Ongoing	Ongoing	1,2,3,4

Educators are always looking for new activities to introduce to their classroom. In response, several loan boxes were designed and contain material for some of the District's most popular youth presentations. Examples include Edible Landfill, Newspaper Pot Making, Litter Playground, and several others. Educators, 4-H clubs, scout groups and other organizations are also encouraged to borrow these kits to help supplement environmental lessons. The District may also consider creating some adult education and outreach loan boxes.

Name	Start Date	End Date	Goal
Curriculum-based Presentations for Schools	Ongoing	Ongoing	1,2,3,4

The District provides a wide variety of curriculum-based presentations and activities for k-12 schools. Some of the presentations provided are listed below:

- Happy Recyclables – pre-K and K presentation.
- Litter Playground - pre-K and K presentation.
- Michael Recycle - pre-K and K presentation.
- The 3 R's - explanation and what happens to recycled materials.
- Green Shopping – how to be an eco-conscious consumer.
- Recycle Right Relay - interactive game in which students sort materials and determine if they belong in the trash, curbside/drop-off recycling, or special recycling program.
- Watershed and Biomes - impact of pollution and litter on watershed systems.
- Edible Landfills - participants build their own landfill based on liner system using food.
- Virtual presentations – available on YouTube that can be sent directly to educators.



## 6. Outreach Priority

The District's outreach priority for this planning period will be a campaign to decrease contamination in county recycling programs. The program will be initiated in two drop-off site communities. If measured results show a decrease in contamination, the program may be extended to other communities. See description of social marketing strategy above.

The overall theme of reducing contamination will also be incorporated into many of the existing outreach activities, including presentations, advertisements, website, electronic newsletter, and some school activities.

Most of the marketing ideas listed above include some sort of evaluation, but the most important indicator of success will be an increase in measured recycling and a decrease in contamination.

## 18. Other Programs

### A. Health Department Support

The District does not receive support from the Health Department.

### B. County Assistance

The District does not receive any supplemental support from the County.

### C. Open Dumping/Litter Enforcement and open dump/tire dump cleanup

Name	Start Date	End Date	Goal
Township/Engineer Road Cleanup Program	Ongoing	Ongoing	1, 2

During the spring of each year, the District hosts a cleanup event where township trustees and the County Engineer's Office can collect roadside litter, scrap tires and other waste materials and dispose of them at the Wood County Landfill free of charge. The cleanup time period is generally 4-6 weeks. Recyclables are taken to the Bowling Green Recycling Center.

Other Cleanup Projects - Funds for cleanup projects, such as improper disposal, are allowable under the plan but dependent on availability of funds.

### D. Municipal Corporation/Township Assistance

See technical assistance programs above.



**E. Disaster Debris Assistance**

Funds for cleanup projects, such as disaster clean up, are part of the plan but dependent on sufficient funds being available.

**F. Closed Facility Maintenance/Post-Closure Care**

Funds are authorized for closure/post-closure of the Wood County Landfill including accumulation of funds and payment for leachate handling facilities and treatment.

**G. Facility Ownership/Operations**

No current programs.

**C. Waste Reduction and Recycling Rates (WR-R)****1. Residential/Commercial Recycling in the District**

Goal 2 challenges SWMDs to reduce and recycle 25 percent of the solid waste generated by the residential/commercial sector. Waste from the residential and commercial sector is essentially municipal solid waste. Ohio measures diversion from landfills, not just recycling. Thus, composted yard waste contributes to achieving Goal 2 as does volume reduction achieved through incinerating solid waste. See Appendix K for more detailed information on the District's progress toward achieving the residential/commercial reduction and recycling rate (Goal 2 of the 2020 State Plan).

The District strives to increase participation of residents, businesses, and institutions in existing recycling opportunities, to decrease the amount of contamination in drop-off and curbside recycling containers, and to improve data collection, particularly data from the commercial and institutional sectors.

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

Year	Projected Quantity Collected (tons)	Residential/ Commercial WR-R (%)
2023	43,224	26%
2024	44,572	27%
2025	45,988	27%
2026	47,475	28%
2027	49,036	28%
2028	50,676	29%

Source: Table K-1

In the reference year, the District's residential/commercial sector achieved a 23% waste reduction and recycling rate, slightly below the 25% requirement to achieve Goal 2. In Table 5-3, the District projects modest increases in waste diversion to attain a recycling rate of 26% by 2023. See Appendix K for more detailed information on the waste reduction and recycling rate for the residential/commercial sector.

## 2. Industrial Recycling in the District

The Ohio EPA eliminated the industrial recycling rate percentage goal in the 2020 State Plan. However, the District typically has a very high industrial recycling rate (94% for reference year 2020).

Table 5-4 shows that the industrial recycling rate in the district is projected to exceed 90%.

**Table 5-4 Industrial Waste Reduction and Recycling Rate**

Year	Projected Quantity Collected (tons)	Industrial WR-R (%)
2023	110,407	93%
2024	110,407	93%
2025	110,407	92%
2026	110,407	92%
2027	110,407	92%
2028	110,407	91%

Source: Table K-2

These projections are based on a slight increase in the amount disposed over the planning period based on historical trends. The District anticipates consistent rates of recycling in the industrial sector; therefore, the tons of recovered material (projected quantity collected) were held constant for the entire planning period.

Industries in the District are well established and have done an excellent job in reducing waste and in diverting materials from disposal through recycling programs. The amount of recycling has decrease over the years, but the percentage of total industrial waste recycled continues to be high.

## CHAPTER 6 BUDGET

### Purpose of Chapter 6

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

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

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

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

### **A. Overview of the SWMD's Budget**

The District is committed to implementing planned strategies, programs and activities in a cost-effective manner. The budget tables prepared for this plan update demonstrate that the District will have adequate funding through the planning period to implement the solid waste management plan.

Budget projections are not a binding commitment by the District to expend a specific amount of funding on a particular strategy, facility, program and/or activity. The District will review and revise the budget as needed, with input from the Wood County Board of Commissioners and Policy Committee, to ensure effective implementation of the plan. The District will expend solid waste district funds in accordance with the ten allowable uses prescribed in ORC 3734.57(G).



## 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.

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

Disposal fees are collected on each ton of solid waste that is disposed at landfills in the levying SWMD. There are three components, or tiers, to the fee. The tiers correspond to where waste originated – from within the SWMD (in-district), from other SWMDs (out-of-district), or from other states.

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

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

#### Generation fees (see Ohio Revised Code Section 3734.573)

Generation Fees are collected on each ton of solid waste that is generated within the SWMD and accepted at transfer facilities or landfills in Ohio. There are no minimum or maximum limits on the per ton amount for generation fees.

#### Rates and Charges (see Ohio Revised Code Section 343.08)

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

#### Contracts (see Ohio Revised Code Sections 343.02 and 343.03)

The board of directors can contract 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

Other sources SWMDs use to earn revenue include:

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

Funding mechanisms used by the District include a three-tier disposal fee charged at landfills located in Wood County, a designation or contract fee charged at landfills and transfer stations who are designated to accept solid waste generated in Wood County, and other sources such as receipts from the County's on-line auction of departmental surplus items and salary reimbursements.

### **1. Disposal Fees**

The largest source of revenue for the District is disposal fees. Disposal fees are collected on each ton of solid waste disposed at landfills in the District. Wood County Landfill and Evergreen Recycling & Disposal Facility are the only in-district landfills. The District's disposal fees are currently \$2.00 per ton for in-district waste, \$4.00 per ton for out-of-district waste and \$2.00 per ton for out-of-state waste. In 2020, the District received \$471,529 in disposal fees.

The Wood County Landfill has experienced a steady increase of in-district tonnage disposal over the past three years, while Evergreen Recycling & Disposal Facility has experienced a significant decrease of out-of-district and out-of-state tonnage over that same time period. Since Evergreen is a much larger facility than the Wood County Landfill, its decreasing tonnage has a greater impact on overall disposal fees. As a result, the District's annual disposal fee revenue decreased by 21% between 2016-2020. In 2021, the District experienced a small increase of 3.5%, attributable to an increase in in-district tonnage.

Due to decreasing disposal fees and fluctuating tonnage, the District's revenue estimates are conservative. For 2023, the District projects a 3% increase in in-district disposal fees, 7% decrease in out-of-districts disposal fees, and a 9% decrease for out-of-state disposal fees. The District applied the increase/decrease over each fee category for the first six years of the planning period and held the amounts constant for the remaining years. The percentage increase/decrease was based on the average percent change in each category over 2016-2021.

The District anticipates the \$2.00/\$4.00/\$2.00 waste disposal fee structure will provide sufficient revenue to implement plan activities through the planning period. Although the District has no plans to adjust the disposal fee schedule during the planning period, it reserves the right to do so if necessary.

### **2. Generation Fees**

The District does not currently have a generation fee. However, the District reserves the right to do so during the planning period if needed.

### **3. Fees Collected via Designation Agreements**

In accordance with Ohio Revised Code 343.014, a solid waste management district may adopt designation fees to assure adequate financing to implement the approved solid waste district management plan. The District implemented a designation contract fee of

\$2.00 per ton for municipal solid waste on October 1, 2011. Agreements were established with designated transfer facilities and landfills for a period of five years. These agreements ensure that all municipal solid waste generated in Wood County, whether disposed within or outside the County, support state-mandated programs and the solid waste management plan. The agreements with existing facilities were renewed on October 1, 2016, and then again on October 1, 2021 for an additional five-year term.

The District projects a 2% increase in designation fee revenue annually for the first six years of the planning period with the remaining years held constant. The percentage increase was calculated based on the average percent change over 2016-2021.

The District believes the \$2.00 per ton fee is sufficient to supplement disposal fee revenue and maintain programming costs throughout the planning period. Thus, the District plans to maintain the \$2.00 per ton designation fee through the planning period. However, under the current designation agreements, the District has the authority to increase, or decrease, the fee amount. The current agreements also have an option to be renewed for an additional five-year term.

#### 4. Other Funding Mechanisms

In addition to disposal and designation fees, the District receives revenue from items sold on the Wood County Internet Auctions and salary reimbursement. The auction includes revenue from the sale of obsolete and/or surplus items and equipment and generates minimal revenue. Salary reimbursement from the Wood County Landfill is an amount equal to 25% of the District Office Manager's salary and benefits for administrative/fiscal work provided throughout the year to the Wood County Landfill.

#### 5. Summary of Revenue

**Table 6-1 Summary of Revenue**

Year	Disposal Fees	Generation Fees	Designation Fees	Other Revenue			Total Revenue
				Auction Revenue	Salary Reimbursement	Miscellaneous	
Reference Year							
2020	\$471,529	\$0	\$71,100	\$0	\$16,116	\$7,860	\$566,605
Planning Period							
2023	\$463,088	\$0	\$78,163	\$1,066	\$17,029	\$0	\$559,346
2024	\$452,837	\$0	\$79,726	\$1,066	\$17,370	\$0	\$550,999
2025	\$443,984	\$0	\$81,320	\$1,066	\$17,717	\$0	\$544,088
2026	\$436,449	\$0	\$82,947	\$1,066	\$18,071	\$0	\$538,534
2027	\$430,160	\$0	\$84,606	\$1,066	\$18,433	\$0	\$534,265
2028	\$425,050	\$0	\$86,298	\$1,066	\$18,801	\$0	\$531,216

Source: Tables O-1 through O-6

Table 6-1 shows historic revenues, reference year revenue (2020), and the projected revenues for the planning period.



## 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 Summary of Expenses**

Expense Category	Year						
	Reference 2020	Planning Period					
		2023	2024	2025	2026	2027	2028
Plan Monitoring and Preparation	\$0	\$10,000	\$5,000	\$5,000	\$5,000	\$15,000	\$10,000
District Administration	\$126,068	\$132,916	\$135,521	\$138,177	\$140,885	\$143,646	\$146,462
Landfill Closure/Post-Closure	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Curbside Recycling	\$111,554	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000
Drop-off Recycling	\$175,559	\$185,000	\$188,000	\$191,000	\$194,000	\$197,000	\$200,000
Special Collections	\$390	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Education/Awareness	\$76,100	\$89,612	\$91,394	\$93,211	\$95,065	\$96,956	\$98,884
Service Contracts	\$5,658	\$0	\$0	\$0	\$0	\$0	\$0
Dump Cleanup	\$1,409	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
<b>Total Expenses</b>	<b>\$526,738</b>	<b>\$531,527</b>	<b>\$533,914</b>	<b>\$541,388</b>	<b>\$548,950</b>	<b>\$566,602</b>	<b>\$569,346</b>

Source: Table O-8

Table 6-2 summarizes the types of expenses the District had for the reference year, and the projections for the planning period.

The District has estimated the costs to implement the programs and activities identified in the plan. Projections were made for 2022 through 2039. Slight bumps in expenses over the planning period are attributed to three-year periods during which a plan update is assumed. A large portion of the budget is dedicated to the District's per capita payment program to support curbside and drop-off residential recycling programming. Another major expense is the cost of a private hauling contract with Republic Services, which provides transportation and processing of recyclables collected at the 12 full-time rural residential drop-off recycling sites. The current contract expires June 2023 and a request for proposals process will occur in late 2022 or early 2023.

The District reviewed historical data, anticipated changes to program, and inflation to project the budget over the planning period. The District does not expect programming and activities to change significantly, therefore projected expenses for 2022 through 2039 remain fairly consistent. The District will budget additional funds for Advertisement/Promotion to support the marketing strategy discussed in Appendix L. An inflationary increase of 1.9%<sup>10</sup> was applied to some expenditures to reflect future costs. The District calculated the inflation rate using the average inflation rate over 2017-2020. Detailed information regarding projected expenses can be found in Appendix O.

<sup>10</sup> US Inflation; Annual Rate, the Bureau of Labor Statistics CPI. (2017-2020)

## D. Budget Summary

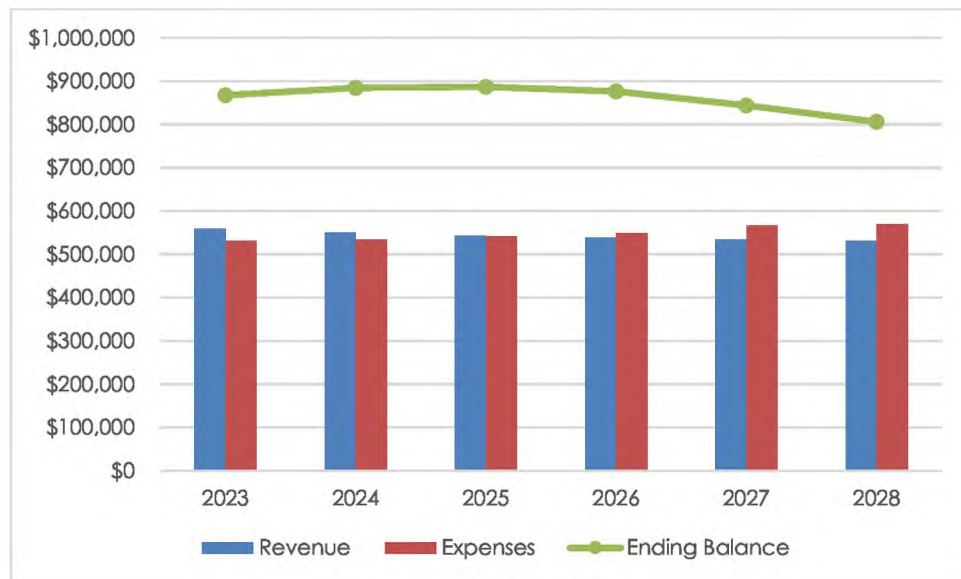
The District strives to maintain at least one year's budget in reserve to cover any unforeseen expenses or sudden loss of revenue. In 2020, the District had a year-end balance of \$746,334. Starting in the planning period year 2023, the estimated balance will be \$867,110, with the ending balance in the sixth year of the planning period projected to be \$806,010. While it is anticipated that expenses will continue to increase and revenues decrease, the projected ending balance is expected to be sufficient throughout the planning period.

**Table 6-3 Budget Summary**

Year	Revenue	Expenses	Net Difference	Ending Balance
<b>Reference Year</b>				
2020	\$566,605	\$526,738	\$39,867	\$746,334
<b>Planning Period</b>				
2023	\$559,346	\$531,527	\$27,819	\$867,110
2024	\$550,999	\$533,914	\$17,085	\$884,194
2025	\$544,088	\$541,388	\$2,700	\$886,894
2026	\$538,534	\$548,950	(\$10,417)	\$876,477
2027	\$534,265	\$566,602	(\$32,337)	\$844,140
2028	\$531,216	\$569,346	(\$38,130)	\$806,010

Source: Table O-8

**Figure 6-1 Projected Budget Summary**





## **APPENDIX A MISCELLANEOUS INFORMATION**

### **A. Reference Year**

The reference year for this solid waste management plan is 2020.

### **B. Planning Period (first and last years)**

The planning period for this solid waste management plan is: 2023 to 2039

Since the planned approval deadline is November 17, 2023, an extra year was added to the 15-year planning period. This will maintain the minimum 15-year planning period in the event the plan is not approved until 2024.

### **C. Goal Statement**

The SWMD will achieve the following Goal:

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

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

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

- Industrial
  - "Total Industrial Recovery" in 2020 was listed as 122,998.70 tons in the 2020 ADR and Table F-6 shows a total of 110,407 tons (difference of 12,592 tons). Industrial ferrous data for the 2020 ADR was incorrect due to a data entry error and has been adjusted in Table F-1, F-4, F-5, and F-6.

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

- None.

### **E. Material Change in Circumstances/Contingencies**

Pursuant to ORC 3734.56(D), when the Board of Commissioners of a single-county district "determines that circumstances materially changed from those addressed in the approved initial or amended plan of the district," the Board shall request the solid waste management policy committee to prepare a draft amended plan.

To make this determination, the Board shall consider the following factors:

1. Significant change(s) in waste generation, including the increase or decrease of industrial waste generation, commercial waste generation and/or residential waste generation.
2. Significant change in the availability of capacity, that could cause a capacity shortfall prior to the next planned five-year update.
3. Significant change regarding waste reduction and/or recycling strategies that could limit the ability of the District to comply with state plan goals.
4. Significant reduction in revenue for plan implementation.
5. Significant change in the procedures to be followed for plan implementation that could affect plan implementation and compliance with state goals.
6. Significant change in the timetable for implementation of programs and/or activities that could limit the District's ability to comply with state goals.

The Solid Waste Management District Office will monitor for significant changes that could cause a material change in circumstances. This monitoring will be ongoing during the planning period. The District shall review the Annual Ohio Facility Data Report to analyze remaining capacity at landfills located in the district and those receiving Wood County waste outside of the district.

Within 60 days of recognizing a probable material change of circumstance, District staff shall present the information and provide recommendations to the Board of County Commissioners. The Policy Committee may also make recommendations to the Board of Commissioners concerning material changes that could require plan update or revision. Recommendations from the Policy Committee shall be in writing and approved by a vote of the committee.

If the Board of Commissioners determines that there has been a material change in circumstances requiring a plan amendment, the Board will request the Policy Committee to prepare a draft amended plan for completion within a time period prescribed by the Board.

# APPENDIX B      RECYCLING INFRASTRUCTURE INVENTORY

Appendix B provides an inventory of the recycling infrastructure that existed in the reference year. This inventory includes residential curbside collection, drop-off recycling, mixed waste materials recovery facilities, waste companies providing recycling collection and trash collection, and composting facilities and yard waste 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 (NSC) 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)	Tons of Materials Collected from SWMD	Service will Continue Throughout Planning Period (Y/N)
NSC1	City of Bowling Green	Republic Services	Wood	City of Bowling Green Public Works	weekly	M, C, SC, G, P, N, OF, OCC	single-stream, automated	N	1,000	Y
NSC2	City of Perrysburg	Republic Services	Wood	City of Perrysburg Public Service	weekly	M, C, SC, G, P, N, OF, OCC	single-stream, automated	N	1,347	Y
NSC3	Village of Haskins	Waste Management	Wood	private hauler	bi-weekly	M, C, SC, G, P, N, OF, OCC	single-stream, automated	N	73	Y
NSC4	City of Northwood	Waste Management	Wood	private hauler	weekly	M, C, SC, G, P, N, OF, OCC	single-stream, automated	N	137	Y-SC
NSC5	City of Rossford	Waste Management	Wood	private hauler	weekly	M, C, SC, G, P, N, OF, OCC	single-stream, automated	N	256	Y-SC
NSC6	Village of Millbury	Republic Services	Wood	private hauler	weekly	M, C, SC, G, P, N, OF, OCC	single-stream, automated	N	45	N
<b>Total</b>									<b>2,858</b>	

Notes:

M = magazines, C = aluminum and bi-metal cans, SC = steel containers, G = Glass, P = plastic, N = newspaper, OF = office paper, OCC = corrugated cardboard  
PAYT = Pay-As-You-Throw



**Table B-1b Inventory of Subscription Curbside (SC) 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 Planning Period (Y/N)
SC1	Lake Township	Wood	contract between City and private hauler	bi-weekly	M, C, SC, G, P, N, OF, OCC	single-stream, automated	N	293	Y
SC2	Village of Walbridge	Wood	contract between City and private hauler	bi-weekly	M, C, SC, G, P, N, OF, OCC	single-stream, automated	N	151	Y
<b>Total</b>								<b>444</b>	

Notes:

M = magazines, C = aluminum and bi-metal cans, SC = steel containers, G = Glass, P = plastic, N = newspaper, OF = office paper, OCC = corrugated cardboard  
PAYT = Pay-As-You-Throw

In reference year 2020, six communities offered non-subscription curbside recycling services and two communities offered subscription programs. In May 2020, the Village of Millbury discontinued its recycling program entirely. In September 2020, the City of Rossford (NCS5) transitioned from non-subscription to a subscription program. For this section, Rossford is listed only as non-subscription since this was the predominant service type for most of 2020. In 2021, the City of Northwood moved from a non-subscription to subscription service; therefore, Northwood is listed as "not continuing as non-subscription" in the reference year. The communities cited increasing costs as the reason for their program changes.

All of the curbside programs are automated, single stream collection. Each community independently procures recycling services. The two primary providers for the District are Republic Services and Waste Management. The District provides a per capita incentive payment to communities that offer curbside recycling services in the amount of \$1.50 per person.

## 2. Drop-Off Recycling Locations

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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected <sup>(1)</sup>	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
FTU1	Bowling Green Recycling Center	Bowling Green Recycling Center	Wood	non-profit organization	24/7	M, C, SC, G, P, N, Of, O	Y	867	Y
FTU2	Perrysburg Township	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Y	NA	Y
<b>Total</b>								<b>867</b>	

Notes:

M = magazines, C = aluminum and bi-metal cans, SC = steel containers, G = Glass, P = plastic, N = newspaper, OF = office paper, OCC = corrugated cardboard  
NA - individual totals for this site is not available

The Bowling Green Recycling Center (BGRC) is a non-profit, full-time, urban drop-off site located in the City of Bowling Green. The BGRC is opened 24 hours per day and supplements the recycling programs offered throughout the District. It is centrally located in the county and capable of accepting large amounts of recyclables.

In January 2020, the City of Bowling Green ended their curbside recycling contract with the BGRC and it is now a drop-off facility with no processing center. The facility is a multi-stream operation and residents are required to sort materials before recycling.

The facility serves as an additional recycling location for rural residents. It also provides a recycling option for those who live in multi-family housing units and off-campus BGSU housing, schools, businesses and government offices. The BGRC also accepts recyclables from the Village of North Baltimore's part-time rural drop-off program.

The Perrysburg Township site is part of the District's 24/7 residential recycling drop-off program and is considered urban due to the population size it serves.

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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected <sup>(1)</sup>	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU1	None								
<b>Total</b>									

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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
FTR1	Bloomdale Village	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes	760 (combined total)	Y
FTR2	Custar/ Milton Township	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
FTR3	Grand Rapids Village	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
FTR4	Jackson Township/ Hoytville Village	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y

## Appendix B Recycling Infrastructure Inventory

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
FTR5	Pemberville Village	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
FTR6	Portage Village	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
FTR7	Portage Township	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
FTR8	Troy Township	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
FTR9	Tontogany Village	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
FTR10	Wayne Village	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
FTR11	Weston Village	Republic Services	Wood	Contract between SWMD and private hauler	24/7	M, C, SC, G, P, N, OF, OCC	Yes		Y
<b>Total</b>								<b>760</b>	

**Notes:**

FTR = Full-Time Rural, DNR = Did Not Report

NS = Non-Subscription, S = Subscription

M = magazines, C = aluminum and bi-metal cans, SC = steel containers, G = Glass, P = plastic, N = newspaper, OF = office paper, OCC = corrugated cardboard

The Wood County SWMD operates a 24/7 residential recycling drop-off program. This full-time rural drop-off replaced the District's former part-time rural drop-off, which operated monthly. Twelve permanent sites (one urban and eleven rural) are located throughout the county and include a total of 51 bins. The Perrysburg Township location is considered an urban drop-off due to its population. The bins are serviced weekly, and the materials are collected and processed by Republic Services. Each site is maintained by a community group or host community. The District provides a per capita incentive payment of \$1.00 per person for communities that participate in the residential drop-off program.

The District's contract with Republic Services will be expiring in 2023 and the District will be seeking competitive proposals for the service.



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

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTR1	North Baltimore Village	Bowling Green Recycling Center	Wood	Contract between Village and non-profit	Saturdays 9:00am-12:00pm	M, C, SC, P, N, Of, O	Yes	26	Yes
<b>Total</b>								<b>26</b>	

Notes:

M = magazines, C = aluminum and bi-metal cans, SC = steel containers, G = Glass, P = plastic, N = newspaper, OF = office paper, OCC = corrugated cardboard

The Village of North Baltimore operates a part-time, rural recycling drop-off program in the southern part of the county. The Village retained their original part-time drop-off program rather than join the District's 24/7 full-time drop-off program. The drop-off is open once/week and materials are pre-sorted and transported to the Bowling Green Recycling Center. The District provides a per capita incentive payment of \$1.00 per person for this program.

### 3. Mixed Solid Waste Material Recovery Facilities

There are currently no mixed solid waste material recovery facilities within the Wood County SWMD and none are anticipated through the planning period.

## B. Curbside Recycling and Trash Collection Service Providers

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

Provider Name	County Served	Trash Collection Services				Curbside Recycling Services		
		PAYT (Y/N)	Residential	Commercial	Industrial	Residential	Commercial	Industrial
Archbold Refuse Service Inc.	Wood	N	Y	Y	Y	Y	Y	Y
Berhman Rolloffs LLC	Wood	N	Y	Y	Y	N	N	N
Black Swamp Disposal LLC	Wood	N	Y	N	N	N	N	N
Blanchard Riverview Ent	Wood	N	Y	N	N	N	N	N
City of Bowling Green	Wood	N	Y	N	N	Y	N	N
City of Perrysburg	Wood	N	Y	N	N	Y	N	N
Cruz's Junk Removal LLC	Wood	N	Y	Y	N	N	N	N
Elliott Scrapping LLC	Wood	N	N	Y	Y	N	N	N
Heartland Disposal	Wood	N	Y	Y	N	N	N	N
Hoops Bros Trash Removal LLC	Wood	N	Y	Y	N	N	N	N
Jdog Junk Removal	Wood	N	Y	Y	N	N	N	N
Jehm Enterprises	Wood	N	Y	Y	Y	N	N	N
Kleen Sweep	Wood	N	Y	Y	N	N	N	N
N.A.T. Transportation	Wood	N	Y	Y	Y	Y - compost in Luckey	N	N

Provider Name	County Served	Trash Collection Services				Curbside Recycling Services		
		PAYT (Y/N)	Residential	Commercial	Industrial	Residential	Commercial	Industrial
Patterson Sanitation	Wood	N	Y	Y	Y	N	N	N
Paul's Refuse	Wood	N	Y	N	N	N	N	N
Republic Services	Wood	N	Y	Y	Y	Y	Y	Y
Select Sanitation	Wood	N	Y	Y	N	N	N	N
Waste Management	Wood	N	Y	Y	Y	Y	Y	Y
Zacks Recycling LLC	Wood	N	Y	Y	Y	N	N	N

Wood County SWMD relies on private haulers to collect and transport solid waste generated by residents and businesses in Wood County. The Wood County Health Department no longer licenses solid waste haulers. Provider information was obtained from the district's previous plan and from hauler accounts with the Wood County Landfill.

### 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
City of Fostoria Compost	IV	Y	1240 South Union Street, Fostoria	0	2,489	2,489
Grand Rapids Composting Facility	IV	Y	17460 Sycamore Road, Grand Rapids	0	93	93
Luckey Composting Facility	II	Y	Krotzer Ave and Basic Street, Luckey	0	213 – included in Hirzel Farms	213 – included in Hirzel Farms
Floralandscape	IV	Y	130 Elmdale Road, Toledo	0	0	0
Down 2 Earth	IV	Y	4901 Wynnscape Drive, Oregon	0	18	18
Number One Landscape	IV	Y	3775 Ridge Rd, Medina	0	42	42
Wood County Landfill	IV	Y	15320 Tontogany Road, Bowling Green	0	1,471	1,471
Henry Landscape	IV	Y	10101 Roachton Road, Perrysburg	0	0	0
Easily Green Lawn Care	IV	Y	23691 North Dixie Highway, Perrysburg	0	5,203	5,203
Woodville Road Nursery	IV	Y	5819 Woodville Road, Northwood	0	700	700
Hirzel Farms (2019)	II	Y	2422 State Route 105, Pemberville	7,802	1,323	9,125
Envirocare Lawn & Landscape	IV	Y	24112 Lime City Road, Perrysburg	0	989	989
<b>Total</b>				<b>7,802</b>	<b>12,328</b>	<b>20,130</b>

In 2020, there were ten Class IV composting facilities and two Class II composting facilities utilized by Wood County residents, businesses, and local governments. Since Hirzel Farms did not provide reference year data, food and yard waste totals from 2019 were used for 2020, as allowed in the Ohio EPA Format 4.1 instructions. Luckey Composting Facility is a service provided by N.A.T. Transportation that takes yard waste to Hirzel Farms. The

Luckey Composting Facility totals were not included in the overall sum to prevent double-counting.

## D. Other Food Waste and Yard Waste Management Programs

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

Facility or Activity Name	Activity Type	Location	Food Waste (tons)	Yard Waste (tons)	Included in Total? (To avoid double-counting)
Village of Bloomdale	Mulching Operation	S. Main Street, Bloomdale	0	70	
City of Bowling Green	Community Curbside Collection	City of Bowling Green	0	1,328	N
Bowling Green State University	Mulching Operation	816 E. Poe Road, Bowling Green	0	0	N
Village of Bradner	Land Application	130 N. Main Street, Box 559, Bradner	0	39	
Village of Custar	Land Application	19441 Mermill Road, Rudolph	0	3	
Village of Cygnet	unknown	unknown	0	26	
Village of Grand Rapids	Community Yard Waste Drop-off	17460 Sycamore Rd., Grand Rapids	0	93	N
Village of Haskins	Community Yard Waste Drop-off	405 N. Findlay, Haskins	0	10	N
Henry Township	Land Application	14690 Quarry Rd, North Baltimor	0	8	
Jackson Township	Land Application	4235 Weston Road, Custar	0	2	
Village of Jerry City	Land Application		0	3	
Lake Township	Mulching Operation	27975 Cummings Road, Milbury	0	459	
Liberty Township	Land Application	10194 Rudolph Road, Rudolph	0	4	
Village of Luckey	Community Yard Waste Drop-off	unknown	0	215	N
Village of Millbury	Community Yard Waste Drop-off	PO Box 155, Millbury	0	246	N
Milton Township	Land Application	19441 Mermill Road, Rudolph	0	7	
Montgomery Township	Land Application	PO Box 462, Bradner	0	55	
North Baltimore	Land Application - 34 T, Mulching Operation - 29 T	205 N. Main Street, North Baltimore	0	63	Adjusted (-29)
Northwood City	Community Yard Waste Drop-off	6000 Wales Road, Northwood	0	80	N
Village of Pemberville	Land Application - 68 T, Community Yard Waste Drop-off - 160 T	5755 N. River Road, Pemberville	0	228	Adjusted (-160)
City of Perrysburg	Community Curbside Collection	201 W. Indiana Avenue, Perrysburg	0	6,798	N
Perrysburg Township	Community Yard Waste Drop-off	26609 Lime City Road, Perrysburg	0	4,640	N
Village of Risingsun	Land Application	420 Main Street, PO Box 37, Risingsun	0	15	
City of Rossford	Community Curbside Collection	133 Osborn Street, Rossford	0	1,221	N
Village of Tontogany	Community Yard Waste Drop-off (13.29 T) and Land Application (2.45 T)	PO Box 238, Tontogany	0	16	Adjusted (-13.29)
Village of Walbridge	Community Yard Waste Drop-off	705 N. Main Street, Walbridge	0	216	N
Washington Township	Community Yard Waste Drop-off	unknown	0	Included in Wood County Landfill	N
Village of Wayne	Land Application	125 Schoolhouse Street, Wayne	0	405	



## Appendix B Recycling Infrastructure Inventory

Facility or Activity Name	Activity Type	Location	Food Waste (tons)	Yard Waste (tons)	Included in Total? (To avoid double-counting)
Village of Weston	Land Application	PO Box 354	0	38	
Wood County Park District	Land Application	Slippery Elm Trail, W.W. Knight Preserve, Park Headquarters, Harrison Park, Otsego Park	0	2	
Wood County Engineers	Land Application	unknown	0	0	
		<b>Total</b>	<b>0</b>	<b>1,241</b>	

The Wood County SWMD collects information about city, township, village, and government agency composting programs in the annual district report. Data from local communities that used other composting facilities (e.g., Wood County Landfill, Woodville Road Nursery) were not included in the overall total to avoid double-counting (as shown in the "Included in Total" column). A few facilities had portions of their total adjusted in the sum to avoid double-counting (e.g., North Baltimore – 29 tons was not included in total).

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

There are no material handling facilities utilized within the Wood County SWMD and none are anticipated through the planning period.

# APPENDIX C POPULATION DATA

## A. Reference Year Population

**Table C-1a Reference Year Population Adjustments**

	<b>Wood</b>
Before Adjustment	132,248
Additions	None
Subtractions - Fostoria	1,092
<b>After Adjustment</b>	<b>131,156</b>

Source: Ohio Department of Development, Office of Research. August 2021. Population Counts for Governmental Units: 2020, 2010, 2000

**Table C-1b Total Reference Year Population**

<b>Unadjusted Population</b>	<b>Adjusted Population</b>
132,248	131,156

Source: Ohio Department of Development, Office of Research. August 2021. Population Counts for Governmental Units: 2020, 2010, 2000

According to 2020 U.S. Census data released in August 2021, Wood County grew by 5.4 percent since the 2010 national headcount, bringing its population to 132,248.<sup>11</sup> Wood County was one of only 33 counties among the state's 88 counties that did not see a decline in population. Reference year population was taken from the ODOD, Development Services Agency Office of Statistical Research (OSR). Since the ODOD has not yet updated population projections using the 2020 Census data, this plan uses the 2019 population projections provided by the ODOD.<sup>12</sup>

Ohio law requires the entire population of a municipality located in more than one solid waste management district to be added to the solid waste management district containing the largest portion of the jurisdiction's population. The City of Fostoria is partially located within Seneca, Hancock, and Wood County with the largest portion of Fostoria's population located in Seneca County. Thus, Wood County's population has been adjusted to remove the portion of Fostoria's population located in Wood County.

<sup>11</sup> U.S. Census Bureau, 2010 Census Redistricting Data (Public Law 94-171) Summary File; 2020 Census Redistricting Data (Public Law 94-171) Summary File; 2020 county and Core Based Statistical Area (CBSA) gazetteer files; Office of Management and Budget, March 2020, Metropolitan and Micropolitan Statistical Area delineations

<sup>12</sup> Ohio Department of Development Office of Research (2020). Wood County Profile.

<https://devresearch.ohio.gov/files/research/C1088.pdf>

## B. Population Projections

**Table C-2 Population Projections**

Year	Wood	Total District Population
2020	131,156	131,156
2021	131,248	131,248
2022	131,341	131,341
2023	131,433	131,433
2024	131,526	131,526
2025	131,618	131,618
2026	131,932	131,932
2027	132,246	132,246
2028	132,560	132,560
2029	132,874	132,874
2030	133,188	133,188
2031	133,292	133,292
2032	133,396	133,396
2033	133,500	133,500
2034	133,604	133,604
2035	133,708	133,708
2036	134,824	134,824
2037	134,848	134,848
2038	134,872	134,872
2039	134,896	134,896

Notes: Reference year (2020) and first year of planning period (2023) are highlighted

Source(s) of Information: 2019 Ohio County Population Estimates" prepared by Ohio Development Services Agency, Office of Research and Ohio Department of Development, Office of Research. August 2021. Population Counts for Governmental Units: 2020, 2010, 2000

The planning year population projections were taken from the Ohio Development Services Agency Office of Statistical Research (ODSA, OSR), which was published in April 2018 and not yet updated with the 2020 Census results. However, as this was the best available information at the time of this draft, projections of the annual change in persons per year were used along with the baseline 2020 population to project the population from 2021-2039. For example, from 2021-2024 it was projected that the annual change in persons per year would be +92. These estimates serve as a guide only in estimating the District's population through the planning period.



# APPENDIX D DISPOSAL DATA

## A. Reference Year Waste Disposed

**Table D-1a Waste Disposed in Reference Year – Publicly-Available Landfills (Direct Haul)<sup>1</sup>**

Facility Name	Location		Waste Accepted from the SWMD			
	County	State	Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Evergreen Recycling & Disposal	Wood	OH	45,634	4,538	9,932	60,104
Wood County Landfill	Wood	OH	53,884		210	54,094
Hancock County Landfill	Hancock	OH	4,747	718	346	5,811
County Environmental of Wyandot	Wyandot	OH	98	1,867	3	1,968
Defiance County Sanitary Landfill	Defiance	OH	639		3	642
Sunny Farms Landfill LLC	Seneca	OH	318			318
Port Clinton Landfill Inc	Sandusky	OH	1		37	38
Pine Grove Regional Facility	Fairfield	OH			1	1
Vienna Junction	Monroe	MI	27,755	0	0	27,755
<b>Total</b>			<b>133,076</b>	<b>7,122</b>	<b>10,533</b>	<b>150,730</b>

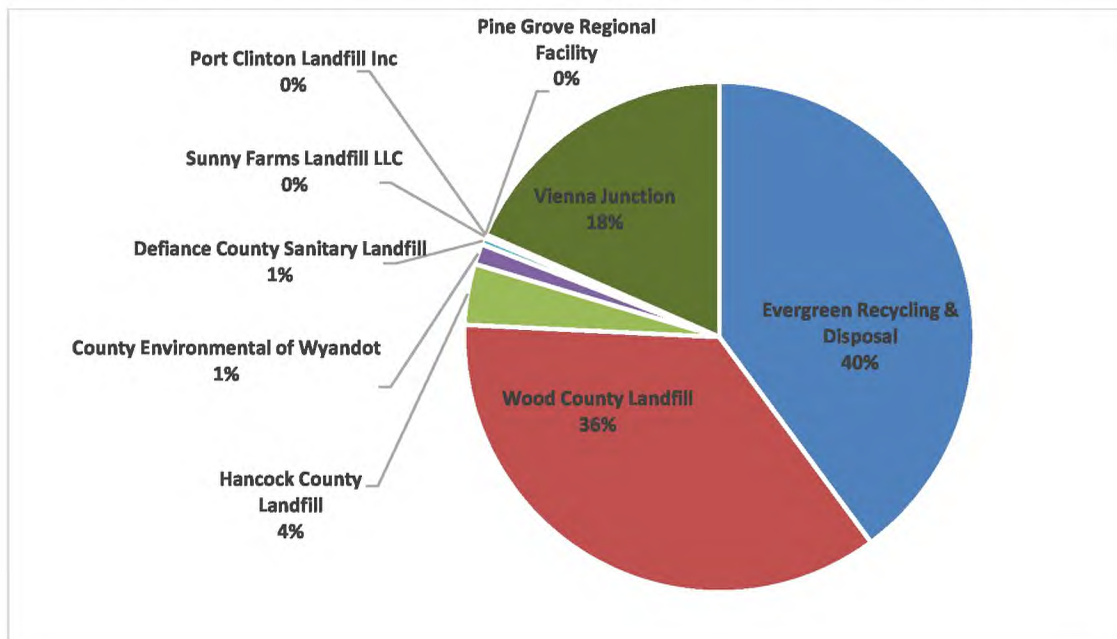
<sup>1</sup> The facilities listed in Table D-1a and identified as able to accept waste from the SWMD (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a). The amount of waste has been rounded to the nearest ton.

Source(s) of Information: Ohio EPA 2020 Wood County Waste Flow (2020 Facility Data Report)

Calculations: Residential/Commercial + Industrial + Excluded = Total

In 2020, there were eight disposal facilities that accepted direct haul waste generated in Wood County (see Table D-1a). The two in-county landfills (Wood County Landfill and Evergreen Recycling & Disposal) accepted most of the waste. Residential/Commercial waste makes up 85% of the direct hauled waste. Excluded wastes are classified as slag, uncontaminated earth, non-toxic fly ash, spend non-toxic foundry sand and material from mining, construction, or demolition operations.

The Wood County Landfill is publicly owned and operated and accepts waste on a much smaller scale than the privately owned Evergreen Recycling & Disposal Landfill. The majority of waste disposed at the Wood County Landfill is generated in the District while Evergreen receives a large amount of out-of-county and out-of-state waste.

**Figure D-1 Breakdown of Publicly Available Landfill Total Tons in 2020****Table D-1b Waste Disposed in Reference Year – Captive Landfills - Omitted**

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

A captive waste landfill refers to privately owned industrial or residual solid waste landfills that are used to dispose of solid waste generated exclusively by the owner of that landfill facility. There are no captive landfills within the District and none are anticipated in the planning period.

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

Residential/Commercial (tons)	Industrial (tons)	Excluded (tons)	Total
133,076	7,122	10,533	150,730

Source(s) of Information: Ohio EPA 2020 Wood County Waste Flow (2020 Facility Data Report)  
 Calculations: Residential/Commercial + Industrial + Excluded = Total

**Table D-2 Waste Transferred in Reference Year<sup>1</sup>**

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

<sup>1</sup> The facilities listed in Table D-2 constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).  
 Source(s) of Information: Ohio Environmental Protection Agency, Annual District Review (ADR) Form for 2020, Wood County.

There are no transfer facilities located in the District and no waste from Wood County was sent to a transfer facility during the reference year.

**Table D-3 Waste Incinerated/Burned for Energy Recovery in Reference Year - Omitted**

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

There are no incinerators or waste-to-energy facilities in Wood County and no waste from Wood County was sent to an incinerator during the reference year.

**Table D-4 Total Waste Disposed in Reference Year**

	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)	% of Total Waste Disposed
Direct Hauled	133,076	7,122	0	140,198	100%
Transferred	0	0	0	0	0%
Incinerated	0	0	0	0	0%
Total	133,076	7,122	0	140,198	100%
<b>Percent of Total</b>	<b>95%</b>	<b>5%</b>	<b>0%</b>	<b>100%</b>	

**Supplement to Table D-4 Incinerated and Excluded Wastes as Percentages of Total Waste Disposed**

	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)	% of Total Waste Disposed
Direct Hauled	133,076	7,122	10,533	150,730	100%
Transferred	0	0	0	0	0%
Incinerated	0	0	0	0	0%
Total	133,076	7,122	10,533	150,730	100%
<b>Percent of Total</b>	<b>88%</b>	<b>5%</b>	<b>7%</b>	<b>100%</b>	

Source(s) of Information: Ohio Environmental Protection Agency, Annual District Review (ADR) Form for 2020 Waste Flow, Wood County.

Most of the excluded waste was disposed of at Evergreen Recycling & Disposal Facility. The Wood County Landfill accepted 210.1 tons of construction, demolition, and debris (CD&D) material that fell into the "excluded" category.

Since excluded waste comprised less than 10% of the total waste disposed in publicly available landfills, the District is not required to include excluded waste in the projections, per Ohio EPA guidance.



## 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)
2016	129,768	5.06	119,944	5,982	6,876	132,802
2017	130,437	5.02	119,382	5,608	7,151	132,141
2018	130,441	5.04	119,866	13,873	6,856	140,595
2019	130,817	5.04	120,241	9,389	7,732	137,362
2020	131,156	5.56	133,076	7,122	10,533	150,730

a. Reference year is highlighted

Source(s) of Information: Ohio Environmental Protection Agency, Annual District Review (ADR) Forms - Waste Flow, Wood County.

Sample Calculations: Residential/commercial + industrial + excluded = total waste

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

Assumptions: Note that the population values used vary from what is reported in the ReTrac system/ADRs.

**Table D-5A**

Annual Percentage Change				
	Residential/Commercial	Industrial	Excluded	Total
2016				
2017	-0.5%	-6%	4%	0%
2018	0.4%	147%	-4%	6%
2019	0.3%	-32%	13%	2%
2020	11%	-24%	36%	10%

**Table D-5B**

Annual Change in Tons Disposed				
	Residential/Commercial	Industrial	Excluded	Total
2016				
2017	-562	-374	275	-661
2018	484	8,265	-295	8,454
2019	375	-4,484	876	-3,233
2020	12,835	-2,267	2,801	13,368

**Table D-5C**

Average Annual Percentage Change	
Residential/Commercial	2.73%
Industrial	21.16%
Excluded	12.22%

**Table D-5D**

Average Annual Change in Tons Disposed	
Residential/Commercial	3,283
Industrial	285
Excluded	914

**Table D-5E**

Average Per Capita Over Time (5 Years)	
Residential/Commercial	5.14

## 1. Residential/Commercial Waste

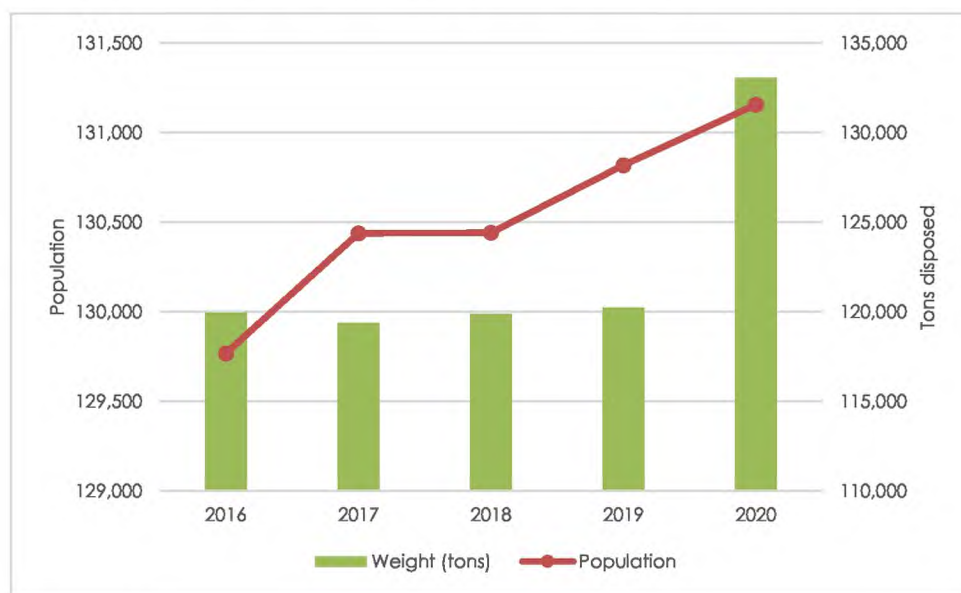
**Table D-5F Comparison of Previous Plan Residential/Commercial Waste Projections**

Year	Historical Data		2017 SWMD Plan Projection		% Change from Projected	
	Rate (ppd)	Weight (tons)	Rate (ppd)	Weight (tons)	Rate (ppd)	Weight (tons)
2016	5.06	119,944				
2017	5.02	119,382	6.28	125,748	-20%	-5%
2018	5.04	119,866	6.28	126,012	-20%	-5%
2019	5.04	120,241	6.28	126,276	-20%	-5%
2020 <sup>a</sup>	5.56	133,076	6.28	126,540	-11%	-5%

a. Reference year is highlighted

Calculation: Percent change = (new value – old value) / old value

**Figure D-1 Historical Residential/Commercial Disposal and Population**



The amount of residential/commercial waste remained fairly consistent from 2016 to 2019 and then jumped in 2020 by 12,835 tons. The per capita disposal rate increased by nearly half of a pound per person per day in 2020. The population during this period increased an average of 1% annually.

Based on how the data is reported, the District is unable to determine how much of the increase is attributable to households and how much is from commercial activity.

The increase in waste in 2020 may be linked to population increase, new commercial activity, the Covid-19 pandemic, or a combination of all these factors. New studies have shown that the pandemic greatly impacted the amount of residential waste generated in the United States<sup>13</sup>. The Solid Waste Association of North America (SWANA) reported potential changes in volume and source of solid waste generated because of the stay-

<sup>13</sup> ACS Environ. Au 2021, 1, 1, 32–45 Publication Date: August 20, 2021  
<https://doi.org/10.1021/acsenvironau.1c00005>

at-home orders<sup>14</sup>. SWANA estimated in late April that domestic residential waste in the US peaked at about 20% higher than normal, with an increase of more than 30% in some regions.<sup>13</sup>

In 2020, Wood County had a nearly 11% increase in residential and commercial waste. During the pandemic, more packaging was generated from on-line buying and grocery pick-ups/deliveries. Personal protective equipment (PPE) use was widespread creating waste from disposable masks, gloves, gowns, disinfectant wipes, cleaning product containers and hand sanitizers. The stay-at-home order increased residential use of restaurant delivery and take-out services with more plastic utensils, containers, packaging, and food waste. Residents were also performing home improvement, cleaning, and downsizing projects during their time at home.

The District is aware that many businesses were temporarily closed or operating with fewer employees for a period during the pandemic; thus, producing less waste. Most schools, including Bowling Green State University, did not meet in-person for many months. However, essential businesses remained operational, such as grocery stores, warehouses, manufacturing facilities, and hospitals, and likely generated a large amount of waste from PPE, cleaning, and packaging materials.

In 2021, the Wood County Landfill, which primarily receives in-district waste, had a decrease in tonnage of 7.47% compared to 2020. Evergreen Recycling & Disposal Landfill, who receives around double the waste of Wood County, with more than half being out-of-district waste, had an increase in tonnage of 9.09% in 2021. Overall, the Wood County Landfill and Evergreen Recycling & Disposal Landfill had a 2.83% increase of in-district tonnage in 2021 compared to 2020.

The District's 2017 Plan projected a residential/commercial waste per capita disposal rate of 6.28 ppd for 2017-2020. The actual rate was about 20% less in 2017-2019, and 11% less in 2020. The actual tonnage for residential and commercial waste disposal was about 5% less than projected.

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<sup>14</sup> <https://swana.org/news/swana-news/article/2020/03/19/swana-reminds-all-state-and-local-governments-that-solid-waste-management-is-an-essential-public-service>



**Table D-5G Comparison of Various Counties Adjusted Residential/Commercial Disposal Rates**

	County	2020 Adjusted Population (1)	Ohio EPA ADR 2020 Population (2)	Percent Difference in Population Estimate	2020 ADR Residential/Commercial Disposal Rate (ppd) (2)
Similar Population	Miami	108,774	106,987	1.6%	4.79
	Richland	124,936	121,488	2.8%	11.65
	Belmont-Jefferson	131,746	132,331	-0.4%	7.74
	Clark	136,001	134,083	1.4%	4.07
	Defiance-Fulton-Paulding-Williams	136,907	135,577	1.0%	4.3
	Carroll-Columbiana-Harrison	143,081	147,210	-2.9%	5.97
Average PPD				6.42	
Similar Geography	Henry	27,662	26,921	2.7%	4.78
	Hancock	74,920	72,301	3.5%	6.96
	Ottawa-Sandusky-Seneca	154,329	161,223	-4.5%	4.46
	Lucas	431,279	427,088	1.0%	2.59
	Average PPD				4.70
Statewide		11,799,448	11,699,626	0.8%	4.79

PPD = pounds per person per day

1. Ohio Department of Development, Office of Research, August 2021. Population Counts for Governmental Units: 2020, 2010, 2000.

<https://devresearch.ohio.gov/files/research/P3008.pdf>

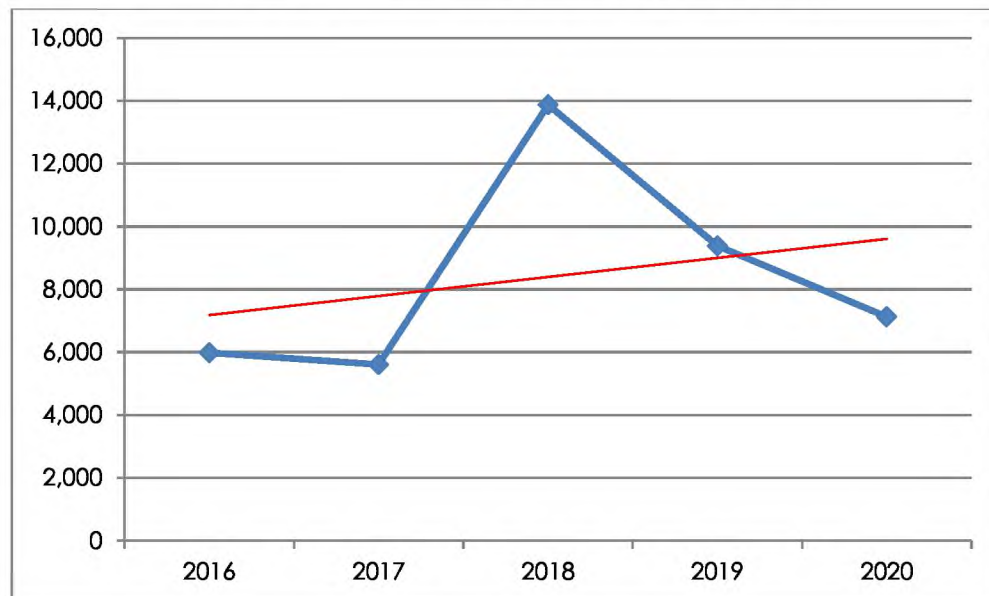
2. Values reported in the Disposal Recycling and Generation Summary for 2020. Ohio EPA, September 16, 2021.

Table 5-1G compares the District's ppd disposal rate in 2020 with other districts of similar population and geography. Compared to other districts, the 5.56 ppd disposal rate is slightly above the statewide average and nearby districts, but below districts with comparable population.

## 2. Industrial Waste

As shown in Table D-1a, three facilities reported accepting industrial solid waste originating in the District in 2020. These facilities included Evergreen Recycling & Disposal, Hancock County Landfill and County Environmental of Wyandot. A total of 7,122 tons of industrial waste was disposed in 2020, all of which was direct haul. Between 2016 and 2020, industrial waste accounted for between 4% and 10% of the total waste disposed. As shown in Table D-5, historical industrial waste disposal amounts have varied from year to year, making trend analysis difficult. Annual percent changes (based on reported tonnage) seem to alternate between an increase one year and a decrease the next year.

While Wood County has experienced significant economic growth since the 2017 Plan, including several new warehousing and manufacturing facilities and the expansion of several existing industries, most of these businesses are not disposing large amounts of industrial solid waste. Many of the new industrial facilities have sophisticated in-house recycling and source reduction programs.

**Figure D-2 Industrial Waste Disposal (tons)**

### 3. **Excluded Waste**

Excluded waste includes all exempt waste disposed in publicly available solid waste landfills, which is not characterized as solid waste. For example, construction and demolition debris is not solid waste, but is frequently disposed in solid waste landfills. In addition, non-toxic foundry sand is not characterized as solid waste but is also frequently disposed in a publicly available solid waste landfill.

The amount of excluded waste originating in Wood County and disposed of in publicly available solid waste landfills for the reference year was 10,533 tons. Excluded waste made up 5% to 7% of the total waste disposed in years 2016-2020. Historically, excluded waste has been less than 10% of the total waste disposal from the District. Ohio EPA allows the District to omit excluded waste calculations from projections if the amount is less than 10% of total waste generation.

### C. **Disposal Projections**

Ohio EPA allows for several different methods to project waste disposal through the planning period, including historical per capita, historical averages, and historical trends. After considering the historical analysis and other factors that could change disposal trends, the District has projected the following waste disposal rates for the planning period.



**Table D-6 Projections for Waste to be Disposed and Transferred**

Year	Residential/ Commercial Solid Waste	Industrial Solid Waste	Excluded Waste	Total Waste	Waste Transferred (as part of Total Disposal)
	Weight	Weight	Weight	Weight	Weight
	(tons)	(tons)	(tons)	(tons)	(tons)
2020	133,076	7,122	0	140,198	0
2021	123,170	7,478	0	130,651	0
2022	123,257	7,852	0	131,115	0
2023	123,344	8,245	0	131,588	0
2024	123,431	8,657	0	132,087	0
2025	123,517	9,090	0	132,607	0
2026	123,812	9,544	0	133,356	0
2027	124,107	10,021	0	134,128	0
2028	124,401	10,522	0	134,924	0
2029	124,401	10,522	0	134,924	0
2030	124,401	10,522	0	134,924	0
2031	124,401	10,522	0	134,924	0
2032	124,401	10,522	0	134,924	0
2033	124,401	10,522	0	134,924	0
2034	124,401	10,522	0	134,924	0
2035	124,401	10,522	0	134,924	0
2036	124,401	10,522	0	134,924	0
2037	124,401	10,522	0	134,924	0
2038	124,401	10,522	0	134,924	0

**Notes:**Reference year is noted in green, 1<sup>st</sup> year of Planning Period in blue*Italics* indicates the planning period

Source(s) of Information: Ohio EPA 2020 ADR Review Form

Sample Calculations:

Residential/Commercial Waste Total = (Population x 5.14 PPD x 365 days) / 2,000 lbs./ton

Industrial Waste Total = Previous Year total + (Previous Year Total x 5% increase)

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

A summary of how each waste category projection was determined is below. Since it is difficult to project waste generation or disposal over long time periods, the District has elected to keep the amount of industrial disposal constant after the first six years of the planning period.

Residential/Commercial Waste Projections

Residential and commercial waste disposal ranged from 119,382 tons in 2017 to 133,076 tons in 2020. The District's per capita ppd ranged from 5.02 in 2017 to 5.56 in 2020. As discussed previously, the higher tonnage and increased ppd in 2020 may be attributable to the Covid-19 pandemic. However, in-district waste for Wood County Landfill and Evergreen Recycling Disposal Landfill collectively increased by 2.83% in 2021 compared to 2020. Thus, it is not clear whether the effects of the pandemic continued in 2021 or if there are other factors, such as new business growth, contributing to the increased tonnage. Since the District has updated census information, the per capita method may produce a more accurate projection. For the first six years, the District projects a waste disposal rate using a per capita rate of 5.14 ppd (Table D-5e) based on the average ppd for 2016-2020. The remaining years were held constant.

Industrial Waste Projections

Industrial waste disposal has trended upward over 2016-2020, with 7,122 tons disposed in 2020. Again, the Covid-19 pandemic may have impacted the tonnage in 2020.



However, Wood County has experienced significant economic development over the last several years, including new manufacturing and warehousing facilities and thousands of new jobs. Wood County expects continued growth in this sector. As shown in Table D-5, historical industrial waste disposal amounts have varied from year to year, making trend analysis difficult. Annual percent changes (based on reported tonnage) seem to alternate between an increase one year and a decrease the next year. While the historic annual percent change was 21.16%, the District is using a modest annual percentage increase of 5% (Table D-5c) for the first six years of the planning period, with the remaining years held constant.

#### Excluded Waste Projections

Since the District is not required to include excluded waste, projections were not included in Table D-6.

#### Transferred Waste

The District had no transferred waste in 2020 (Table D-4) and no transferred waste was projected for the planning period.

**Table D-7      Waste Imports**

Year	Wood County Landfill	Evergreen Disposal & Recycling	Total Imported
2016	9,675	112,272	121,947
2017	9,601	100,763	110,364
2018	9,958	100,689	110,647
2019	11,125	92,320	103,445
2020	11,453	75,559	87,012
2021	11,911	67,248	79,159
2022	12,388	61,195	73,583
2023	12,883	55,688	68,571
2024	13,398	50,676	64,074
2025	13,934	46,115	60,049
2026	14,492	41,965	56,456
2027	15,071	38,188	53,259
2028	15,674	34,751	50,425
2029	15,674	34,751	50,425
2030	15,674	34,751	50,425
2031	15,674	34,751	50,425
2032	15,674	34,751	50,425
2033	15,674	34,751	50,425
2034	15,674	34,751	50,425
2035	15,674	34,751	50,425
2036	15,674	34,751	50,425
2037	15,674	34,751	50,425
2038	15,674	34,751	50,425
2039	15,674	34,751	50,425

Source(s) of Information: 2020 ADR

The District used a 4% increase to project the Wood County Landfill imports for the first six years of the planning period based on the average rate from 2016-2020. Projections were held constant for the remaining years in the planning period. A 9% decrease was used to project the Evergreen Landfill for the first six years of the planning period based on the

average rate from 2016-2020. Projections were held constant for the remaining years in the planning period.

## APPENDIX E      RESIDENTIAL/COMMERCIAL REDUCTION AND RECYCLING DATA

The purpose of Appendix E is to:

- Inventory quantities of materials recovered from the residential/commercial sector in the reference year;
- Adjust reported quantities for potential double counting;
- Calculate adjusted quantities of material recovered in the reference year;
- Analyze historical quantities recovered; and
- Project quantities to be recovered.

### A.      Reference Year Recovery Data

Tables E-1 through E-4 account for all material credited to the waste reduction and recycling rate for the residential/commercial sector.

Table E-1 presents a summary of the commercial survey results for 2020. The District issued a recycling survey in February 2020 to capture commercial sector recycling data. Based on a review of the results, no adjustments were needed to the reported amounts. Data was aggregated from 14 businesses that responded to the survey, across ten industries categorized by North American Industry Classification System (NAICS) code.

There were no other recycling facilities (e.g., scrap yards, brokers, buybacks, processors) in 2020 (Table E-2).

Table E-3 presents data reported to Ohio EPA by commercial businesses (e.g., big box stores). As shown in Table E-3, cardboard is the largest stream of recyclable material generated by retailers within Wood County.

Table E-4 presents data associated with services and programs such as recycling programs and other sources of data (e.g., drop-off locations, commercial/government office collection routes). Table E-4 reports residential and commercial recycling data that is not included in the previous three tables. The data is collected from a variety of sources. Each category will be expanded upon in the following explanations:

- **Curbside Recycling Services:** Subscription and non-subscription curbside recycling tonnage is reported annually by communities providing these services. Reporting tonnage is mandatory for local governments to receive per capita funding from the District. Tonnage is provided to local governments through private hauler reporting.



- **Drop-off Recycling Services:** The SWMD sponsors 12 drop-off recycling sites that are collected and processed by Republic Services. Republic Services sends monthly tonnage reports with their invoices to the District. The Bowling Green Recycling Center and Village of North Baltimore also provide drop-off recycling data.
- **Composting Facilities:** This data is collected and published by Ohio EPA in the "Compost Facility Report Data." This includes all registered composting facilities that accepted food and/or yard waste generated in Wood County during reference year 2020.
- **Other Food and Yard Waste Management Activities:** This data is collected during the ADR surveys for all townships, villages, and other local agencies that have yard waste collection programs. Any local government that sends collected yard waste to a facility that was included in the Ohio EPA "Compost Facility Report Data" was not included in this section to avoid double-counting.
- **Ohio EPA Scrap Tire Data:** This tonnage is from the 2020 Ohio EPA Scrap Tire Data report. Tires collected at the Wood County Landfill were not included in this number to avoid double-counting.
- **Wood County Landfill:** Materials disposed of at the Wood County Landfill are recorded daily. This number includes appliances and "white goods." Tires, lead-acid batteries, scrap metal, and yard waste collected at the Landfill are not included in this table to avoid double-counting.
- **BGSU School Recycling** – Bowling Green State University has special recycling programs available for students. These programs were suspended in 2020 due to Covid-19, but commingled recyclables were still collected for a total of 56 tons of material.
- **Other Programs:** This category includes other programs that do not fit into one of the above categories for various reasons (e.g., reporting methods, material accepted).

Double counting occurs when the same material is reported by more than one survey respondent. This could happen if a community reported the quantity of a material collected through curbside and the processor also accounts for the material. The District took special effort to ensure materials were not double counted.

The North American Industry Classification System (NAICS) classifies establishments to collect, analyze, and publish statistical data related to the business economy. It is designed to allow for a high level of comparability in business statistics among the North American countries.

Below is a summary of the sectors represented by their NAICS code:

- 22: Utilities
- 31-33: Manufacturing
- 42: Wholesale Trade
- 44-45: Retail Trade
- 48-49: Transportation and Warehousing
- 51: Information
- 52: Finance and Insurance
- 53: Real Estate and Rental and Leasing
- 54: Professional, Scientific, and Technical Services
- 55: Management of Companies and Enterprises
- 56: Administrative and Support and Waste Management and Remediation Services
- 61: Educational Services
- 62: Health Care and Social Assistance
- 71: Arts, Entertainment, and Recreation
- 72: Accommodation and Food Services
- 81: Other Services (except Public Administration)
- 92: Public Administration

# Appendix E Residential/Commercial Waste Reduction and Recycling Data

**Table E-1 Commercial Survey Results (tons)**

NAICS	Appliances/ "White Goods"	Electronics	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Yard Waste	Other: Scrap Metal Unspecified	Other: Unspecified	Other: Motor Oil	
42			0.15				1	35	1041	12		3							
44			1.05	2		11		1.38	0.05	0.05			0.19						5.26
45		0.84	35.46	45.59				449.4	0.79	14.97			76.99			0.72	0.66		
48																			
49																			
51			0.01			6.34	18.31	17.8	147.15	0.48	1.15					0.01	10.12		
52																			
53																			
54						0.9	1.89	23.64	92.8	3.22							0.04		
55																			
56																			
61																			
62																			
71																			
72																			
81								12				53.84							
92																			
32					192	11.34		64.7	218.83							7.5	30		
33			792			2.5	0.08												
22				0.5	0.5	1		2	0.5	0.5									
31								110.24											
<b>Unadjusted Total</b>	0	1	829	48	193	33	21	716	1,501	31	1	57	77	0	0	8	41	5	3,562
<b>Adjustments</b>																			0
<b>Adjusted Total</b>	<b>0</b>	<b>1</b>	<b>829</b>	<b>48</b>	<b>193</b>	<b>33</b>	<b>21</b>	<b>716</b>	<b>1,501</b>	<b>31</b>	<b>1</b>	<b>57</b>	<b>77</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>41</b>	<b>5</b>	<b>3,562</b>

Source(s) of Information: 2020 Wood County ADR data

Additional NAICS Explanations:

NAICS 32 (Manufacturing: Pulp, Paper, Printing, and Commercial Printing);

NAICS 33 (Manufacturing: Storage Battery Manufacturing);

NCAIS 22 (Utilities: Water, Sewage, and Other Systems); and

NCAIS 31 (Manufacturing: Textile Product Mills)

"Other" Materials Explanations:

"Scrap Metal" that was not identified as ferrous or non-ferrous; "Electronics"; "Batteries"; "Motor Oil"; and "Miscellaneous" that was either not categorized or was a very specialized material for a singular commercial facility.

In 2020, "All Other Paper" made up the largest portion of recycled materials. There are several printing manufacturers and commercial facilities within Wood County that contribute to this category of recyclables.



**Table E-2 Data from Other Recycling Facilities**

Program and/or Source of Materials/Data	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	
<b>Buybacks</b>								
None								
<b>Scrap Yards</b>								
None								
<b>Brokers</b>								
None								
<b>Processors/MRF's</b>								
None								
<b>Unadjusted Totals</b>								<b>0</b>
<b>Adjustments</b>								<b>0</b>
<b>Adjusted Totals</b>								<b>0</b>

**Table E-3 Data Reported to Ohio EPA by Commercial Businesses (tons)**

Ohio EPA Data Source	Plastic	Newspaper	Cardboard	Mixed Paper	Nonferrous	Ferrous	Wood	Food: Compost	Food: Other	Commingled	Other	
Walmart Recycling in Ohio	31		986	3							22	
Home Depot Corporation	1		161				253				25	
Meijer Corporation	93		1,560	1								
Target Corporation	6		251	1	7					2		
Dollar General Corporation	2		306	2								
Aldi Inc Hinckley Division	4		299						26			
Kohls Corporate Office & Headquarters	6		93							6		
Kroger	43		1,430								45	
CVS			4									
Lowe's (2019)					3						25	
Big Lots (2018)			18									
<b>Unadjusted Total</b>	<b>186</b>	<b>0</b>	<b>5,108</b>	<b>7</b>	<b>10</b>	<b>0</b>	<b>253</b>	<b>0</b>	<b>26</b>	<b>8</b>	<b>117</b>	<b>5,715</b>
<b>Adjustments</b>	<b>2</b>											<b>2</b>
<b>Adjusted Total</b>	<b>184</b>	<b>0</b>	<b>5,108</b>	<b>7</b>	<b>10</b>	<b>0</b>	<b>253</b>	<b>0</b>	<b>26</b>	<b>8</b>	<b>117</b>	<b>5,713</b>

Source(s) of Information: 2020 Ohio Material Recovery Facilities and Commercial Recycling

**Table: E-4 Other Recycling Programs/Other Sources of Data (tons)**

Other Programs or Sources of Data	Appliances/ "White Goods"	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	Commingled Recyclables (Mixed)	Yard Waste	Other: Scrap Metal	Unadjusted Total	Adjustments	Adjusted Total
Curbside Recycling Services																3,329			3,329		<b>3,329</b>
Drop-off Recycling Locations									87	158	11	367	169	68	7	760			1,627		<b>1,627</b>
Composting Facilities								7,802									12,673		20,475		<b>20,475</b>
Other Food and Yard Waste Management Activities								649									2,175		2,824		<b>2,824</b>
Ohio EPA Scrap Tire Data					1,856														1,856		<b>1,856</b>
Wood County Landfill	50																	86	136		<b>136</b>
School Recycling - BGSU																56			56		<b>56</b>
Other Programs																			0		<b>0</b>
<b>Unadjusted Total</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,856</b>	<b>0</b>	<b>0</b>	<b>8,451</b>	<b>87</b>	<b>158</b>	<b>11</b>	<b>367</b>	<b>169</b>	<b>68</b>	<b>7</b>	<b>4,119</b>	<b>14,848</b>	<b>86</b>	<b>30,297</b>		<b>30,297</b>
<b>Adjustments</b>																			0		
<b>Adjusted Total</b>	<b>50</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,856</b>	<b>0</b>	<b>0</b>	<b>8,451</b>	<b>87</b>	<b>158</b>	<b>11</b>	<b>367</b>	<b>169</b>	<b>0</b>	<b>7</b>	<b>4,119</b>	<b>14,848</b>	<b>86</b>	<b>30,297</b>		

Source(s) of Information: 2020 Wood County ADR, 2020 Ohio EPA Scrap Tire Report; 2020 Ohio EPA Compost Report; 2020 Residential Surveys

Sample Calculations: Adjusted Total = Unadjusted total - adjustments

Assumptions: The material tonnage from BGRC was adjusted to avoid double-counting in the drop-off recycling locations total.

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

<b>Material</b>	<b>Quantity (tons)</b>
Appliances/ "White Goods"	50
Household Hazardous Waste	0
Used Motor Oil	5
Electronics	0
Scrap Tires	1,856
Dry Cell Batteries	0
Lead-Acid Batteries	829
Food	8,525
Glass	280
Ferrous Metals	191
Non-Ferrous Metals	42
Corrugated Cardboard	6,191
All Other Paper	1,677
Plastics	283
Textiles	8
Wood	310
Rubber	77
Commingled Recyclables (Mixed)	4,147
Yard Waste	14,848
Other (Aggregated)	252
<b>Total</b>	<b>39,571</b>

Source(s) of Information: Totals from Table E-1 through E-4

Table E-5 provides a comprehensive total of all residential/commercial recycling programs within the District during the reference year. These totals are divided into categories based on material. The "other" category is combined with materials that are not specified in the ADR surveys. Overall, the District diverted 39,571 tons of material from the residential/commercial sector. The largest category of recycled material in 2020 was yard waste at 14,848 tons. Some programs such as BGSU School Recycling program were negatively affected by Covid-19, which impacted the ability to safely perform recycling programs.

**Table E-6 Quantities Recovered by Program/Source**

<b>Program/Source of R/C Recycling Data</b>	<b>Quantities (Tons)</b>
Commercial Survey	3,562
Data from Other Recycling Facilities	0
Ohio EPA Commercial Retail Data	5,713
Curbside Recycling Services	3,323
Drop-off Recycling Locations	1,627
Composting Facilities	20,475
Other Food and Yard Waste Management Activities	2,824
Ohio EPA Scrap Tire Data	1,856
Wood County Landfill	136
School Recycling - BGSU	56
Other Programs	0
<b>Total</b>	<b>39,571</b>

Source(s) of Information: 2020 ADR, Tables E-1, E-2, E-3, and E-4.



Table E-6 reports the quantities diverted for each program/source in 2020 and represents the summation of tonnages shown in Tables E-1A through E-4A. Composting facilities made up over half the total material recovered.

**B. Historical Recovery**

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# Appendix E Residential/Commercial Waste Reduction and Recycling Data

**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 Locations	Composting Facilities	Other Food and Yard Waste Management Activities	Ohio EPA Scrap Tire Data	Wood County Landfill	BGSU School Recycling	Other Programs	Totals
2016	3,352	2,425	3,242	4,283	228	6,446	8,474	2,724	46	96	433	31,749
2017	3,718	2,226	3,955	3,997	188	12,248	2,477	2,575	38	562	4,370	36,354
2018	2,405	2,122	4,333	4,381	370	18,411	2,641	6,247	53	375	78	41,415
2019	3,161	1,183	4,470	3,981	748	18,349	1,104	2,293	55	23	1,744	37,111
<b>2020</b>	<b>3,562</b>	<b>0</b>	<b>5,713</b>	<b>3,323</b>	<b>1,627</b>	<b>20,475</b>	<b>2,824</b>	<b>1,856</b>	<b>136</b>	<b>56</b>	<b>0</b>	<b>39,571</b>

**Table E-7a1 Annual Percent Change in Tons Recovered**

2016												
2017	11%	-8%	22%	-7%	-17%	90%	-71%	-5%	-17%	484%	909%	15%
2018	-35%	-5%	10%	10%	97%	50%	7%	143%	39%	-33%	-98%	14%
2019	31%	-44%	3%	-9%	102%	0%	-58%	-63%	4%	-94%	2136%	-10%
<b>2020</b>	<b>13%</b>	<b>-100%</b>	<b>28%</b>	<b>-17%</b>	<b>118%</b>	<b>12%</b>	<b>156%</b>	<b>-19%</b>	<b>146%</b>	<b>143%</b>	<b>-100%</b>	<b>7%</b>

**Table E-7a2 Average Percentage Change in Tons Recovered**

	5%	-39%	16%	-6%	75%	38%	8%	14%	43%	125%	712%	6%
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**Table E-7a3 Annual Change in Tons Recovered**

2016												
2017	366	-199	713	-286	-40	5,802	-5,997	-149	-8	466	3,937	4,605
2018	-1,314	-104	378	384	182	6,163	163	3,672	15	-187	-4,292	5,061
2019	757	-939	137	-400	378	-62	-1,537	-3,954	2	-352	1,666	-4,304
<b>2020</b>	<b>401</b>	<b>-1,183</b>	<b>1,243</b>	<b>-658</b>	<b>879</b>	<b>2,126</b>	<b>1,720</b>	<b>-437</b>	<b>81</b>	<b>33</b>	<b>-1,744</b>	<b>2,460</b>

# Appendix E Residential/Commercial Waste Reduction and Recycling Data

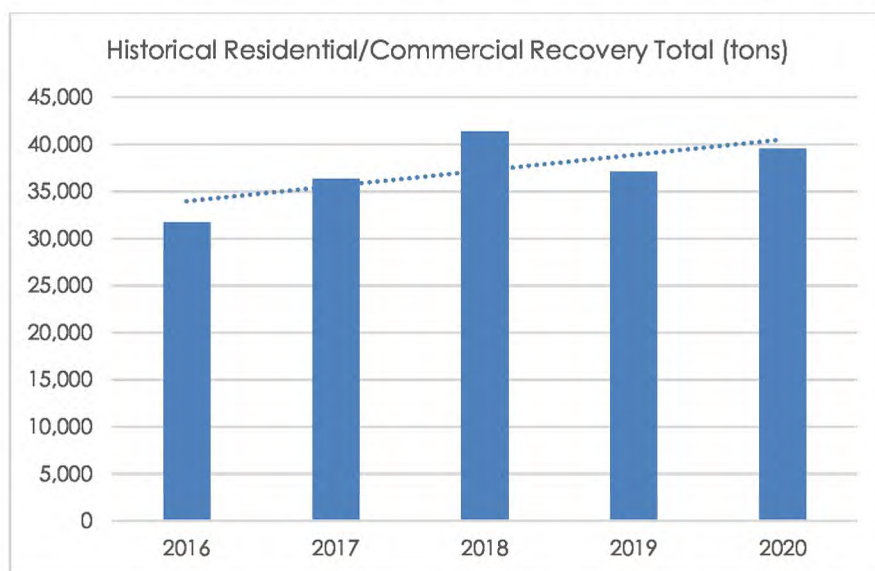
Population	Table E-7a4 Annual Per Capita Recovery Rate (pounds/person/day)												
129,768	2016	0.14	0.10	0.14	0.18	0.01	0.27	0.36	0.12	0.00	0.00	0.02	1.34
130,437	2017	0.16	0.09	0.17	0.17	0.01	0.51	0.10	0.11	0.00	0.02	0.18	1.53
130,441	2018	0.10	0.09	0.18	0.18	0.02	0.77	0.11	0.26	0.00	0.02	0.00	1.74
130,817	2019	0.13	0.05	0.19	0.17	0.03	0.77	0.05	0.10	0.00	0.00	0.07	1.55
131,156	<b>2020</b>	<b>0.15</b>	<b>0.00</b>	<b>0.24</b>	<b>0.14</b>	<b>0.07</b>	<b>0.86</b>	<b>0.12</b>	<b>0.08</b>	<b>0.01</b>	<b>0.00</b>	<b>0.04</b>	<b>1.65</b>

Table E-7a5 Average Per Capita Recovery Rate												
0.14	0.07	0.18	0.17	0.03	0.64	0.15	0.13	0.00	0.01	0.06	1.56	

Table E-7a6 Average Tons of Material Recovered												
3,239	1,591	4,343	3,993	632	15,186	3,504	3,139	66	223	1,503	37,240	

Source(s) of Information: 2016 – 2020 ADRs, commercial survey results, data from other recycling facilities from Ohio EPA MRF report



**Figure E-1 Historical Residential/Commercial Recovery Total (tons)**

The District relies mainly on commercial surveys, Ohio EPA commercial retail data, and Ohio EPA recycling processors data to evaluate historical recovery. Additional information comes from District programs such as drop-off recycling, scrap tire, Christmas tree recycling, and other events. Tables E-7 through E-7a6 show historical residential/commercial recovery from 2016-2020. Overall, the total weight of material recovered has steadily increased. Figure E-1 provides a graphical summary of the historical residential/commercial recovery from 2016-2020.

#### Explanation of Historical Recovery Analysis

**Commercial Survey** – The District sends an emailed survey to targeted commercial sector generators to obtain recycling data. The businesses include commercial facilities but exclude “box stores”. Unfortunately, even when follow-up emails are sent, the responses from businesses have been inconsistent. The number and types of responding businesses vary from year to year. However, the reported amount of recycling has remained fairly constant from 2016-2019. In 2020, tonnage increased, likely because of the Covid-19 pandemic and increases in on-line purchasing. As a result of additional shipping and packaging, businesses were able to recycle more cardboard.

**Other Facilities** – The District no longer has any facilities in this classification. The Bowling Green Recycling Center (BGRC) formally operated a processing center for the City of Bowling Green’s curbside recycling program. However, BGRC discontinued this operation in January 2020 and now operates as a multi-stream drop-off facility. As a result, this category is now reported as having zero tonnage in 2020 compared to 2016-2019. This change resulted in a 26% average decrease since 2016. Excluding 2020, the average percent change was a decrease of 1% from 2016-2019.

**Ohio EPA Commercial Retail Data** – The “box store” retail data has increased by an average of 15% annually from 2016-2020. This increase appears to be in part from an

increase in the number of reporting facilities. In 2020, the Ohio EPA Commercial Retail Data tonnage increased by 27%. Again, the increase may be attributable to Covid-19 and increased use and recycling of cardboard.

**Curbside Recycling** - Curbside recycling has decreased an average of 8% annually from 2016-2020. In 2020, the Village of Millbury discontinued its recycling program and the City of Rossford transitioned to a subscription program. The City of Perrysburg also decided to no longer accept glass in their curbside program. Perrysburg Township discontinued its subscription curbside program in 2018 and transitioned to a 24/7 drop-off site. Due to the cost of non-subscription curbside programs, the District does not expect this volume to increase much over the next planning period.

**Drop-Off Recycling** – The drop-off recycling statistics have increased dramatically since the District implemented its new 24/7 permanent drop-off recycling program. The site includes 12 sites with 51 bins throughout the county. Since 2018, the program has had an 800% increase in annual recycling compared to the former mobile satellite program. The District does not expect a significant volume increase with its drop-off program due to the limited number of containers and sites available. The Village of North Baltimore also operates a small part-time weekly drop-off program. The materials are taken to BGRC and included in the BGRC tonnage. BGRC is now considered an urban, full-time drop-off.

**Composting Facilities** - New composting facilities have contributed to an increased recovery in brush and yard waste. For example, Renewed Outdoors opened a new facility in 2017 and had a contract to accept all yard waste and leaves for the City of Perrysburg<sup>15</sup>. Additionally, the COVID-19 pandemic resulted in residents staying home and performing more yard/landscaping projects. This category increased by 12% in 2020 and had an average percent increase of 27% from 2016-2020. Due to the number of facilities, new housing developments and the popularity of landscaping projects, the District expects tonnage in this area to increase.

**Scrap Tires** - Scrap tire tonnage decreased by 19% in 2020. The District averages around 2,300 tons annually, excluding 2018. The District collected 6,247 tons in 2018 because of a one-time tire amnesty event. The District expects this tonnage to remain constant.

**Wood County Landfill** – The Wood County Landfill averaged 66 tons of annual recycling over 2016-2020. The landfill accepts brush/yard waste, appliances, tires and scrap metal. The District expects similar tonnage over the planning period.

**School Recycling - Bowling Green State University** – BGSU had an outlier event in 2018 due to an Asset 360 program where furniture and classroom materials were recycled during a one-time event. Even with no students on campus for a portion of 2020, BGSU still recycled 56 tons of materials. The university has a long history of recycling, and the District expects collections to continue in the future.

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<sup>15</sup> [https://www.sent-trib.com/community/perrysburg-sees-more-green-with-renewed-outdoors/article\\_98235063-a838-549d-b64f-f1c6cabf580c.html](https://www.sent-trib.com/community/perrysburg-sees-more-green-with-renewed-outdoors/article_98235063-a838-549d-b64f-f1c6cabf580c.html)



**Other Programs** – This category captures remaining recycled materials that do not adequately fit into a category above.

### Comparison to Other Districts

Table E-7a6 compares the District's per capita recovery rate to other districts similar in population or geography. The District's per capita recovery rate was 1.65 ppd in 2020, which is higher than most districts of comparable population (average of 1.54 ppd) but below those in similar geography (average of 2.40 ppd) and the statewide average of 2.05 ppd.

**Table E-7a6 Comparison of Various Counties Residential/Commercial Recovery**

County	Ohio EPA ADR 2020 Population (1)	2020 ADR Residential/ Commercial Recycling (tons) (1)	2020 ADR Residential/ Commercial Recycling (%) (1)	2020 ADR Residential/ Commercial Recovery Rate (ppd) (1)
<b>Similar Population</b>				
Miami	106,987	30,583	24.64	1.57
Richland	121,488	32,940	11.31	1.49
Belmont-Jefferson	132,331	21,443	10.29	0.89
Clark	134,083	77,483	43.73	3.17
Defiance-Fulton- Paulding-Williams	135,577	47,733	30.98	1.93
Carroll-Columbiana- Harrison	147,210	5,753	3.46	0.21
<b>Similar Population Average</b>				<b>1.54</b>
<b>Similar Geography</b>				
Henry	26,921	13,284	36.13	2.70
Hancock	72,301	28,648	23.79	2.17
Ottawa-Sandusky- Seneca	161,223	44,405	25.28	1.51
Lucas	427,088	249,454	55.26	3.20
<b>Similar Geography Average</b>				<b>2.40</b>
<b>Statewide Average</b>	<b>11,699,626</b>	<b>4,386,564</b>	<b>30</b>	<b>2.05</b>

PPD = pounds per person per day

1. Values reported in the Disposal Recycling and Generation Summary for 2020. Ohio EPA, September 16, 2021.



## C. Residential/Commercial Recovery Projections

**Table E-8 Residential/Commercial Recovery Projections by Program/Source (tons)**

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Curbside Recycling Services	Drop-off Recycling Locations	Composting Facilities	Other Food and Yard Waste Management Activities	Ohio EPA Scrap Tire Data	Wood County Landfill	School Recycling - BGSU	Other Programs	Totals
<b>2020</b>	<b>3,562</b>	<b>0</b>	<b>5,713</b>	<b>3,303</b>	<b>1,627</b>	<b>20,475</b>	<b>2,824</b>	<b>1,856</b>	<b>136</b>	<b>56</b>	<b>0</b>	<b>39,571</b>
2021	3,562	0	5,713	3,303	1,627	21,499	2,965	1,856	136	56	0	40,716
2022	3,562	0	5,713	3,303	1,627	22,574	3,113	1,856	136	56	0	41,939
2023	3,562	0	5,713	3,303	1,627	23,702	3,269	1,856	136	56	0	43,224
2024	3,562	0	5,713	3,303	1,627	24,887	3,433	1,856	136	56	0	44,572
2025	3,562	0	5,713	3,303	1,627	26,132	3,604	1,856	136	56	0	45,988
2026	3,562	0	5,713	3,303	1,627	27,438	3,784	1,856	136	56	0	47,475
2027	3,562	0	5,713	3,303	1,627	28,810	3,974	1,856	136	56	0	49,036
2028	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2029	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2030	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2031	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2032	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2033	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2034	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2035	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2036	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2037	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2038	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676
2039	3,562	0	5,713	3,303	1,627	30,251	4,172	1,856	136	56	0	50,676

This section discusses projecting the residential/commercial recovery quantities from 2023-2039 by using the historical information combined with anticipated changes to programs/services. Two years (2021 and 2022) required interpolation as the data was not available at the time this plan was drafted. Ohio EPA recommends using one of the following methods to make projections during the planning period:

1. Average percent change in tons recovered (from Table E-7a);
2. Average per capita recovery rate (from Table E7a5);
3. Holding values steady if there is a lack of historical data; or
4. Other methodology developed by the SWMD.

For the years 2021-2028, the following assumptions used to project the tonnage by program/source are provided below. The years 2029-2039 were held constant.

Commercial Survey – neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

Data from Other Recycling Facilities – neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

Ohio EPA Commercial Retail Data - neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

Curbside Recycling Services - neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

Drop-off Recycling Locations – since this program was recently instituted, neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

Composting Facilities – while the historical data suggest over 25% average annual increases, a more modest rate of 5% was used for the first six years of the planning period.

Other Food and Yard Waste Management Activities - while the historical data suggest over 25% average annual increases, a more modest rate of 5% was used for the first six years of the planning period.

Ohio EPA Scrap Tire Data - neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

Wood County Landfill - neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

School Recycling – BGSU - neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

Other Programs - neither the average percent change in tons recovered (from Table E-7a) or average per capita recovery rate (from Table E7a5) appeared to be representative, so this value was held constant.

# APPENDIX F INDUSTRIAL WASTE REDUCTION AND RECYCLING DATA

The purpose of Appendix F is to:

- Inventory the quantities of materials recovered from the SWMD's industrial sector in the reference year;
- Adjust reported quantities for double counting;
- Calculate total adjusted quantities of material recovered in the reference year;
- Analyze historical quantities recovered; and
- Project quantities to be recovered.

This data will no longer be required under the new 2020 State Plan Goals. However, due to high response and recycling rates in the industrial sector, the District may choose to continue collecting this information.

## A. Reference Year Recovery Data

This data has been compiled from the information obtained through the annual district report (ADR) survey. Annually, the SWMD sends ADR surveys to over 80 industrial facilities that generate waste within the District. In the reference year, 33% of the industries provided recycling information to the District.

For the industrial waste reduction and recycling historical analysis, recycling data was gathered during the ADR process during years 2016 through 2020. Per Ohio EPA instructions, if an industrial business did not respond to the survey in the reference year, but did respond to a previous survey, it may be acceptable to use data from the earlier survey, if the following verifications are made:

- The survey is not more than three years old. Note: Ohio EPA allowed Districts to use four-year old data, if necessary, as a result of the COVID-19 pandemic;
- The industrial facility was in operation in the reference year;
- The owner did not significantly change the nature of the business including the hours of operation, the number of employees, or its sales/level of service; and
- The facility still produces the types of recyclables as were reported in the earlier survey.

The District made efforts to identify possible double counting. As noted in Appendix A, a portion of Phoenix Technologies tonnage from 2016-2019 was double counted. Phoenix Technologies reported tonnage for materials that it used in its manufacturing process that originated from the Bowling Green Recycling Center. The error was explained, and adjustments were made in the 2020 ADR.



**Table F-1 Industrial Survey Results (tons)**

NAICS	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Ash	Non-Excluded Foundry Sand	Flue Gas Desulfurization	Other: Motor Oil	Other: Batteries	Other: Electronics	Other: Lightbulbs	Other: Misc.	Other: Scrap Metal Unspecified	
22																					
31	5,510	15,609	42	1,339	189	37	24		276											271	
32	0	6,269	1,154	80	296	2,365	753	0	835	2	3					15	9	1	30		
33		0	67,621	4,952	8,905	73	2,711	1	972		4				605	1	4	4	12	746	
54		0	674	38	0	0	0			56											
11			48	5	14	39		1,054												2	
48			132		36	2	44														
42				52	12	108			13												
44			15	1	482	8	1,320		16												
56					110																
Unadjusted Total	5,510	6,284	69,685	6,467	10,044	2,632	4,851	1,055	2,112	58	7	0	0	0	605	16	14	5	42	1,018	110,407
Adjustments																				0	
Adjusted Total	5,510	6,284	69,685	6,467	10,044	2,632	4,851	1,055	2,112	58	7	0	0	0	605	16	14	5	42	1,018	110,407

Source(s) of Information: 2020 ADR; 2017 – 2019 for ADR reporting purposes where no 2020 data was available

Sample Calculations: The amounts shown in the NAICS code categories are the total of material reported by one or more industries that are in the code category.

Assumptions: blank cells indicate there was zero data reported; "0" cells indicate recycling tonnage less than 0.5 so that the rounded result is 0.

North American Industry Classification System (NAICS) codes for industries providing the data reported in Table F-1

- 31 – Food Manufacturing
- 32 – Wood product manufacturing, printing, chemical manufacturing, plastic resins, plastic products, tire retreading, machine shops
- 33 – Appliance manufacturing, motor vehicle parts, farm machinery manufacturing, dental and hospital equipment
- 54 – Professional, scientific, and technical services
- 11 – Agriculture, forestry, fishing, and hunting
- 48 – Transportation and Warehousing
- 42 – Wholesale Trade
- 44 – Retail Trade
- 56 – Administrative and Support and Waste Management and Remediation Services

"Other Categories"

- motor oil
- batteries
- electronics
- lightbulbs
- miscellaneous
- scrap metal unspecified

Note: The 2020 Industrial ferrous recycling tonnage was incorrectly reported in the ADR. The correct tonnage is 69,685 tons; 82,284 tons were reported.

**Table F-2 Data from Other Recycling Facilities**

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

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

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

No other programs or information sources were responsible for measurable industrial waste recycling or reduction.

**Table F-4 Industrial Material Recovered in Reference Year**

<b>Material</b>	<b>Quantity (tons)</b>
Food	5,510
Glass	6,284
Ferrous Metals	69,685
Non-Ferrous Metals	6,467
Corrugated Cardboard	10,044
All Other Paper	2,632
Plastics	4,851
Textiles	1,055
Wood	2,112
Rubber	58
Commingled Recyclables (Mixed)	7
Ash	0
Non-Excluded Foundry Sand	0
Flue Gas Desulfurization	0
Other (Aggregated)	1,700
<b>Total</b>	<b>110,407</b>

Source(s) of Information: 2020 Survey data and 2020 ADR

The industrial sector diverted 110,407 tons, as shown in Table F-4. Since there were no data from Tables F4b and F4c, data in Table F-4 are attributable to the data reported in Table F-1. There was an addition error in the 2020 ADR for corrugated cardboard and all other paper, which has been corrected in this table. Additionally, the ferrous metal tonnage was corrected from the 2020 ADR for double counting. As a result, the total (110,407 tons) differs from the 2020 ADR (122,999 tons) by 12,592 tons.

**Table F-5 Quantities Recovered by Program/Source**

<b>Program/Source of Industrial Recycling Data</b>	<b>Quantity (Tons)</b>
Industrial survey	110,407
Data from other recycling facilities	0
<b>Total</b>	<b>110,407</b>

Table F-5 shows the total tons diverted for each source/program. No District programs were responsible for measurable industrial waste recycling or reduction. Although the District has assisted industries seeking markets for certain materials, no specific action or program is directly connected to an exact amount of recovered material. All the reported recycling data was provided by industries in survey responses.

## **B. Historical Recovery**

Total recovery includes recycling, composting, and waste reduction from incineration. The District's historical recovery for the industrial sector over a five-year period spanning from 2016 to 2020 is presented in the following tables.



**Table F-6 Historical Industrial Recovery by Program/Source (tons)**

Year	Industrial survey	Data from other recycling facilities	Totals
2016	116,407	0	116,407
2017	123,282	0	123,282
2018	109,533	0	109,533
2019	127,694	0	127,694
2020	110,407	0	110,407

The information in Table F-6 Historical Industrial Recovery by Program/Source is from the data collected for the District's annual district reports. As noted above, the amount reported above for 2020 varies from the amount reported in the 2020 ADR that was previously submitted to OEPA. The District reviewed the data and discovered one error in the ferrous reporting that has been corrected in Table F-1.

The 2017 Plan projected an industrial recovery of 96,510 tons each year from 2017 to 2020. Actual tonnage recovered each year varied between 13 – 32% higher than the projected tonnage.

Tables F-6a1 to F-6a5 are all derived from Table F-6 and demonstrate several tools that can be used to analyze the historical data.

**Table F-6a1 Annual Percentage Change in Tons Recovered**

2016	
2017	6%
2018	-11%
2019	17%
2020	-14%

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

-1%
-----

**Table F-6a3 Annual Change in Tons Recovered**

2016	
2017	+6,875
2018	-13,749
2019	+18,161
2020	-17,287

**Table F-6a4 Average Annual Change in Tons Recovered**

-1,500
--------

**Table F-6a5 Average Tons of Material Recovered**

117,464
---------

Source(s): District Industrial Surveys for 2016 – 2012, "Material Recovery Facility and Commercial Recycling Data" for 2016-2020

Data from the industrial sector is obtained from surveys, as shown in Table F-6. Average industrial recovery from 2016 to 2020 was 117,464 tons. Over the five-year period, quantities recovered decreased by an average of 1,500 tons, or 1%, annually.

Overall, the District was unable to identify a clear trend in the recovered quantities during 2016-2020. Until the District obtains more consistent data from the industrial sector, it will be very difficult to identify trends and draw conclusions for the industrial sector. However,

despite the variability, industrial reduction and recycling rates continues to exceed 2017 Plan projections and the former State Plan goal for industrial waste reduction.

### C. Industrial Recovery Projections

**Table F-7 Industrial Recovery Projections by Program/Source (tons)**

Year	Industrial survey	Data from other recycling facilities	Totals
2020	110,407	0	110,407
2021	110,407	0	110,407
2022	110,407	0	110,407
2023	110,407	0	110,407
2024	110,407	0	110,407
2025	110,407	0	110,407
2026	110,407	0	110,407
2027	110,407	0	110,407
2028	110,407	0	110,407
2029	110,407	0	110,407
2030	110,407	0	110,407
2031	110,407	0	110,407
2032	110,407	0	110,407
2033	110,407	0	110,407
2034	110,407	0	110,407
2035	110,407	0	110,407
2036	110,407	0	110,407
2037	110,407	0	110,407
2038	110,407	0	110,407
2039	110,407	0	110,407

Source(s) of Information: Data for 2020 was pulled from Table F-6.

Because some of the data presented in Table F-6a do not appear to have clear trends, projecting the industrial recovery over the planning period is difficult. For this reason, the tonnage reported for 2020 was used for the entire planning period.

## APPENDIX G WASTE GENERATION

### A. Historical Year Waste Generated

Depending upon the method used to estimate waste generation, it is very possible that the actual amounts of disposal and waste reduction (as reported by solid waste facilities, recycling facilities, and recycling brokers) will not be consistent with the amount of waste generation. In many cases, calculating waste generation based upon national averages and/or industrial surveys results in higher amounts than the actual reported quantities according to solid waste facilities and recyclers. (The reverse may be true, also.) Many factors contribute to this differential, including the following:

- Inaccurate or inappropriate conversion factors (cubic yards to tons);
- Inaccurate or inappropriate compaction factors for hauling vehicles and landfill waste placement;
- Illegal or open dumping;
- Reporting errors on surveys conducted by the District;
- Average generation rates used are not appropriate for local circumstances;
- Mischaracterization of the type of waste at solid waste facilities;
- Non-response by some entities surveyed by the District; and
- Difficulty in accurately tracking all District waste flows, especially those to adjacent states, or those which are processed through an out-of-district transfer station in route to a landfill.

For Table G-1, information was pulled from Appendix D, E, and F to populate the data. Data in these appendices were based on the residential/commercial and industrial tons disposed from the Ohio EPA Annual District Reports, "Disposal, Recycling, and Generation Summary" for years 2016 to 2020. Corrections were made where needed as explained in previous appendices.

This approach can be reasonably accurate, except when the SWMD does not get good cooperation from entities that are surveyed, such as out-of-state landfills, or recyclers.

**Table G-1 Reference Year and Historical Waste Generated**

Year	Population	Residential/ Commercial				Industrial			Excluded (tons)	Total (tons)
		Disposed (tons)	Recycled (tons)	Generated (tons)	Per Capita Generated (ppd)	Disposed (tons)	Recycled (tons)	Generated (tons)		
2016	129,768	119,944	31,749	151,693	6.41	5,982	116,407	122,389	6,876	280,958
2017	130,437	119,382	36,354	155,736	6.54	5,608	123,282	128,890	7,151	291,777
2018	130,441	119,866	41,415	161,281	6.77	13,873	109,533	123,406	6,856	291,543
2019	130,817	120,241	37,111	157,352	6.59	9,389	127,694	137,083	7,732	302,167
<b>2020</b>	<b>131,156</b>	<b>133,076</b>	<b>39,571</b>	<b>172,647</b>	<b>7.21</b>	<b>7,122</b>	<b>110,407</b>	<b>117,529</b>	<b>10,533</b>	<b>300,709</b>

Sources: Tables E-5 to E-8, Table D-1a, Table F-1



**Table G-1a Reference Year and Historical Waste Generated**

Year	Annual % Change (tons)		
	Residential/ Commercial	Industrial	Excluded
2016	-	-	-
2017	3%	5%	4%
2018	4%	-4%	-4%
2019	-2%	11%	13%
<b>2020</b>	<b>10%</b>	<b>-14%</b>	<b>36%</b>
<b>Average Annual % Change</b>			
	<b>3%</b>	<b>-0.5%</b>	<b>12.2%</b>

Source(s) of Information: 2020 ADR data from Appendix D, E, and F

Sample Calculations:

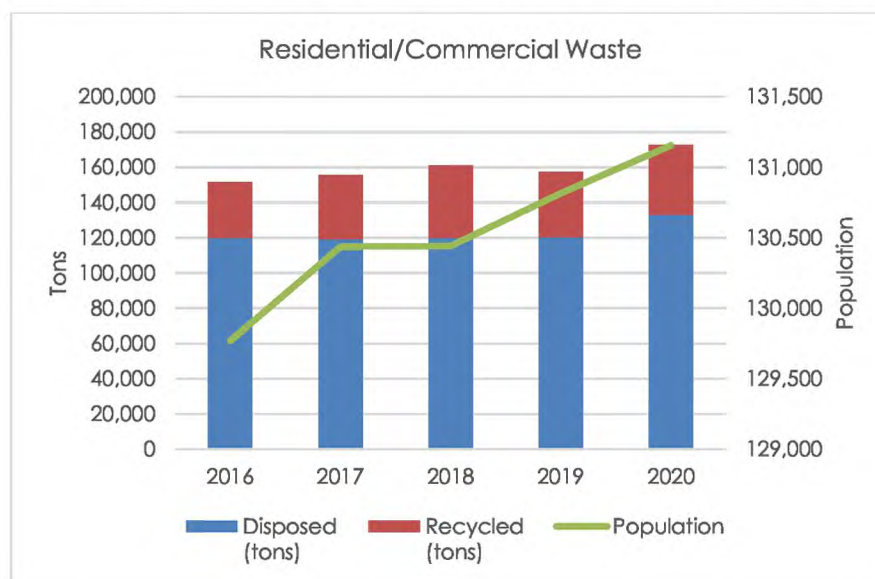
Per capita generation rate = ((tons generated x 2000) ÷ 365) ÷ population)

Annual percentage change = ((New year – old year) ÷ old year) x 100

Waste Generated = Waste Disposed + Waste Recycled

**1. Residential/Commercial Waste**

Residential/commercial waste generation remained fairly constant from 2016 – 2020 despite the increasing population. Annual change varied from 2% decrease in 2019 to 10% increase in 2020, which could partially be explained by the COVID-19 pandemic as discussed in previous appendices. Overall, the average annual change in waste generation from 2016 - 2020 was a 3% increase in the residential/commercial sector.

**Figure G-1 Historical Residential/Commercial Waste Generation**

Residential/commercial per capita generation rates ranged from 6.41 ppd in 2016 to 7.21 ppd in 2020, with an average per capita generation rate of 6.71 ppd. The 2020 per capita rate of 7.21 ppd is slightly lower than the average of other districts with similar population and slightly higher than nearby counties and the statewide average, as shown in Table G-1a.

**Table G-1a Comparison of 2020 Waste Generation Rates to Other Districts**

	County	2020 Census Population (1)	Ohio EPA ADR 2020 Population (2)	Percent Difference in Population Estimate	2020 ADR Residential/Commercial Generation (2)
Similar Population	Miami	108,774	106,987	1.6%	6.36
	Richland	124,936	121,488	2.8%	13.14
	Belmont-Jefferson	131,746	132,331	-0.4%	8.63
	Clark	136,001	134,083	1.4%	7.24
	Defiance-Fulton-Paulding-Williams	136,907	135,577	1.0%	6.23
	Carroll-Columbiana-Harrison	143,081	147,210	-2.9%	6.19
	<b>Average P/P/P/D</b>				<b>7.97</b>
Similar Geography	Henry	27,662	26,921	2.7%	7.48
	Hancock	74,920	72,301	3.5%	9.13
	Ottawa-Sandusky-Seneca	154,329	161,223	-4.5%	5.97
	Lucas	431,279	427,088	1.0%	5.79
	<b>Average P/P/P/D</b>				<b>7.09</b>
	Statewide	11,799,448	11,699,626	0.8%	<b>6.85</b>

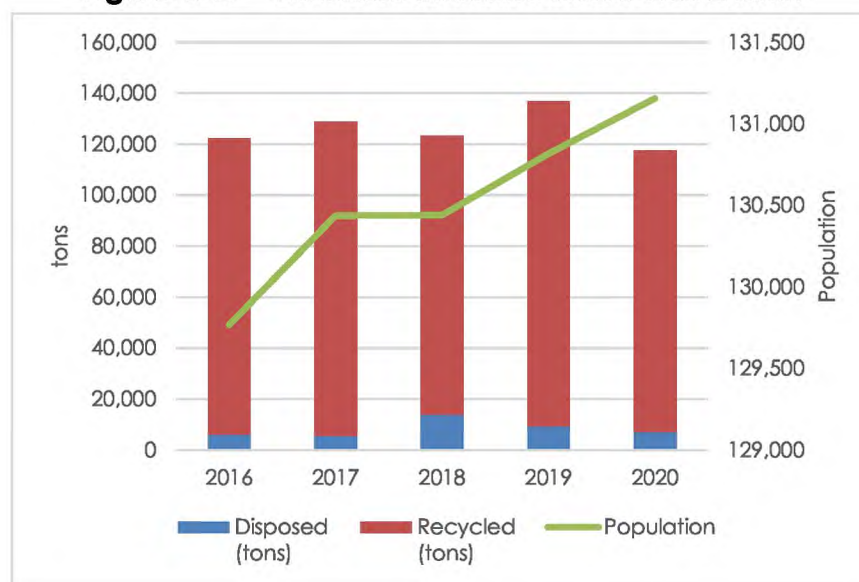
PPD = pounds per person per day

1. Ohio Department of Development, Office of Research. August 2021. Population Counts for Governmental Units: 2020, 2010, 2000. <https://devresearch.ohio.gov/files/research/P3008.pdf>

2. Values reported in the Disposal Recycling and Generation Summary for 2020. Ohio EPA, September 16, 2021

## 2. Industrial Waste

Industrial waste generation also remained fairly constant despite the increasing population. Annual change varied from 14% decrease in 2020 to 11% increase in 2019, which is the opposite trend compared to residential/commercial. This decrease could also be partially explained by the COVID-19 pandemic as discussed in other sections. Many businesses were closed during part of 2020, reducing the industrial generation. At the same time, employees were at home resulting in the increase in residential/commercial waste generation. Overall, the average annual change in generation from 2016 -2020 was -0.5% in the industrial sector.

**Figure G-2 Historical Industrial Waste Generation**

### 3. **Excluded Waste**

Since excluded waste made up less than 10% of the total waste generated in the reference year (2020), the District has chosen not to address excluded waste per the Ohio EPA 4.1 Instruction.



## B. Generation Projections

**Table G-2 Generation Projections**

Year	Population	Residential/ Commercial				Industrial			Excluded Waste (tons)	Total (tons)	Annual Percentage Change			
		Disposal (tons)	Recycle (tons)	Generation (tons)	Per Capita Generation (ppd)	Disposal (tons)	Recycle (tons)	Generation (tons)			Residential/ Commercial	Industrial	Excluded	Total
<b>2020</b>	<b>131,156</b>	<b>133,076</b>	<b>39,571</b>	<b>172,647</b>	<b>7.21</b>	<b>7,122</b>	<b>110,407</b>	<b>117,529</b>	<b>0</b>	<b>290,176</b>	-----	-----	-----	-----
2021	131,248	123,170	40,716	163,887	6.84	7,478	110,407	117,885	0	281,772	-5.1%	0.3%	0%	-2.9%
2022	131,341	123,257	41,939	165,197	6.89	7,852	110,407	118,259	0	283,455	0.8%	0.3%	0%	0.6%
2023	131,433	123,344	43,224	166,568	6.94	8,245	110,407	118,651	0	285,219	0.8%	0.3%	0%	0.6%
2024	131,526	123,431	44,572	168,003	7.00	8,657	110,407	119,064	0	287,067	0.9%	0.4%	0%	0.6%
2025	131,618	123,517	45,988	169,506	7.06	9,090	110,407	119,496	0	289,002	0.9%	0.4%	0%	0.7%
2026	131,932	123,812	47,475	171,287	7.11	9,544	110,407	119,951	0	291,238	1.1%	0.4%	0%	0.8%
2027	132,246	124,107	49,036	173,143	7.17	10,021	110,407	120,428	0	293,571	1.1%	0.4%	0%	0.8%
2028	132,560	124,401	50,676	175,077	7.24	10,522	110,407	120,929	0	296,006	1.1%	0.4%	0%	0.8%
2029	132,874	124,401	50,676	175,077	7.22	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2030	133,188	124,401	50,676	175,077	7.20	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2031	133,292	124,401	50,676	175,077	7.20	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2032	133,396	124,401	50,676	175,077	7.19	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2033	133,500	124,401	50,676	175,077	7.19	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2034	133,604	124,401	50,676	175,077	7.18	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2035	133,708	124,401	50,676	175,077	7.17	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2036	134,824	124,401	50,676	175,077	7.12	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2037	134,848	124,401	50,676	175,077	7.11	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%
2038	134,872	124,401	50,676	175,077	7.11	10,522	110,407	120,929	0	296,006	0.0%	0.0%	0%	0.0%

Note: See Appendix D, E and F for sources, assumptions and calculations used for each sector.

The generation projections for the District are explained in Appendices D, E, and F. Table G-2 is a composite of the projections. Residential/commercial waste generation is expected to increase slowly during the planning period, mainly due to the expected continued population growth and increased waste disposal. Recycling is also expected to increase slightly. Residential/commercial generation is predicted to increase about 1% per year over the first six years of the planning period, with the remaining years held constant.

Industrial generation is expected to increase 0.4% per year over the first six years of the planning period, with the remaining years held constant. This is due to projected recycling being held constant while disposal is expected to increase slightly.

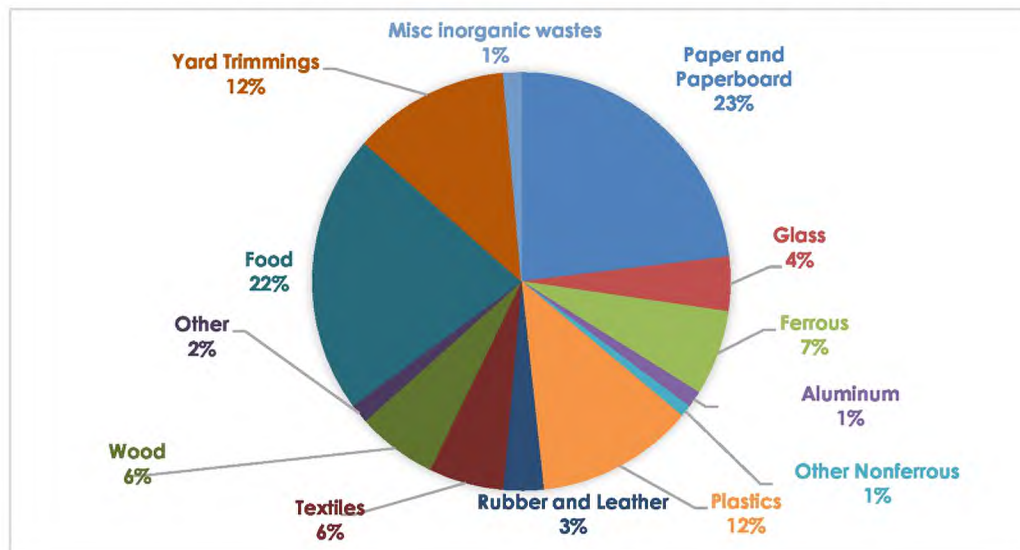
## C. Waste Composition

**Table G-3 Composition of Residential/Commercial Waste for First Six Years of Planning Period (tons)**

Material	Percent of Total Generation <sup>1</sup>	2020	2021	2022	2023	2024	2025	2026	2027	2028
Paper and Paperboard	23.1%	30,741	28,452	28,472	28,492	28,512	28,532	28,601	28,669	28,737
Glass	4.2%	5,589	5,173	5,177	5,180	5,184	5,188	5,200	5,212	5,225
Ferrous	6.6%	8,783	8,129	8,135	8,141	8,146	8,152	8,172	8,191	8,210
Aluminum	1.3%	1,730	1,601	1,602	1,603	1,605	1,606	1,610	1,613	1,617
Other Nonferrous	0.9%	1,198	1,109	1,109	1,110	1,111	1,112	1,114	1,117	1,120
Plastics	12.2%	16,235	15,027	15,037	15,048	15,059	15,069	15,105	15,141	15,177
Rubber and Leather	3.1%	4,125	3,818	3,821	3,824	3,826	3,829	3,838	3,847	3,856
Textiles	5.8%	7,718	7,144	7,149	7,154	7,159	7,164	7,181	7,198	7,215
Wood	6.2%	8,251	7,637	7,642	7,647	7,653	7,658	7,676	7,695	7,713
Other	1.5%	1,996	1,848	1,849	1,850	1,851	1,853	1,857	1,862	1,866
Food	21.6%	28,744	26,605	26,624	26,642	26,661	26,680	26,743	26,807	26,871
Yard Trimmings	12.1%	16,102	14,904	14,914	14,925	14,935	14,946	14,981	15,017	15,053
Misc. inorganic wastes	1.4%	1,863	1,724	1,726	1,727	1,728	1,729	1,733	1,737	1,742
<b>R/C waste generated</b>		<b>133,076</b>	<b>123,170</b>	<b>123,257</b>	<b>123,344</b>	<b>123,431</b>	<b>123,517</b>	<b>123,812</b>	<b>124,107</b>	<b>124,401</b>

<sup>1</sup> From Advancing Sustainable Materials Management: 2018 Tables and Figures Assessing Trends in Materials Generation and Management in the United States December 2020

**Figure G-3 Percent of Total Generation by Waste Stream<sup>16</sup>**



<sup>16</sup> From Advancing Sustainable Materials Management: 2018 Tables and Figures Assessing Trends in Materials Generation and Management in the United States December 2020

Understanding the content of the waste is important for estimating the quantity of materials available for recovery or recycling, and for designing the appropriate size of any processing, recycling, or recovery facilities in the District. Table G-3 estimates the composition of residential/commercial waste from 2020 to 2039 using the U.S. EPA's 2018 percent of total generation by material for the municipal waste stream shown in Figure G-3. Based on U.S. EPA data, most of the waste generated in the municipal stream is projected to be paper/paperboard, food, plastics, and yard trimmings.



## **APPENDIX H            STRATEGIC EVALUATION**

Appendix H includes a strategic process of evaluating reduction and recycling efforts. To do this, the District evaluated its programs and services in the context of factors that need to be considered when developing recycling and waste reduction programs.

The District evaluated the status of its reduction and recycling efforts against these factors through a series of analyses. These analyses are intended to result in a holistic review of the SWMD. The District completed the following thirteen analyses:

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

The combined results of the analyses helped answer questions such as:

- Is the SWMD adequately serving all waste generating sectors?
- Is the SWMD recovering high volume wastes such as yard waste and cardboard?
- How well is the SWMD's recycling infrastructure being used/how well is it performing/being used?
- What is the SWMD's financial situation and ability to fund programs?
- How effective is the SWMD's data collection system?
- How did the SWMD's situation in the reference year compare to where the current plan anticipated the SWMD would be?

### **1.     Residential Recycling Infrastructure Analysis**

The residential recycling infrastructure analysis evaluates whether the needs of the residential sector are being met and if the infrastructure is adequately performing. The District's residential recycling infrastructure consists of curbside recycling programs and drop-off programs. In early 2020, there were six non-subscription curbside recycling programs and two subscription programs in the District. In late 2020 and early 2021, two communities shifted to non-subscription and one community discontinued recycling altogether. Currently, the District has three non-subscription curbside programs and four subscription curbside programs. The District also has two full-time urban drop-off recycling sites, eleven full-time rural drop-off recycling sites and one part-time rural drop-off

recycling site. See Appendix B Recycling Infrastructure Inventory for a complete listing of District residential recycling infrastructure for reference year 2020.

## **A. Residential Recycling Infrastructure Analysis Overview**

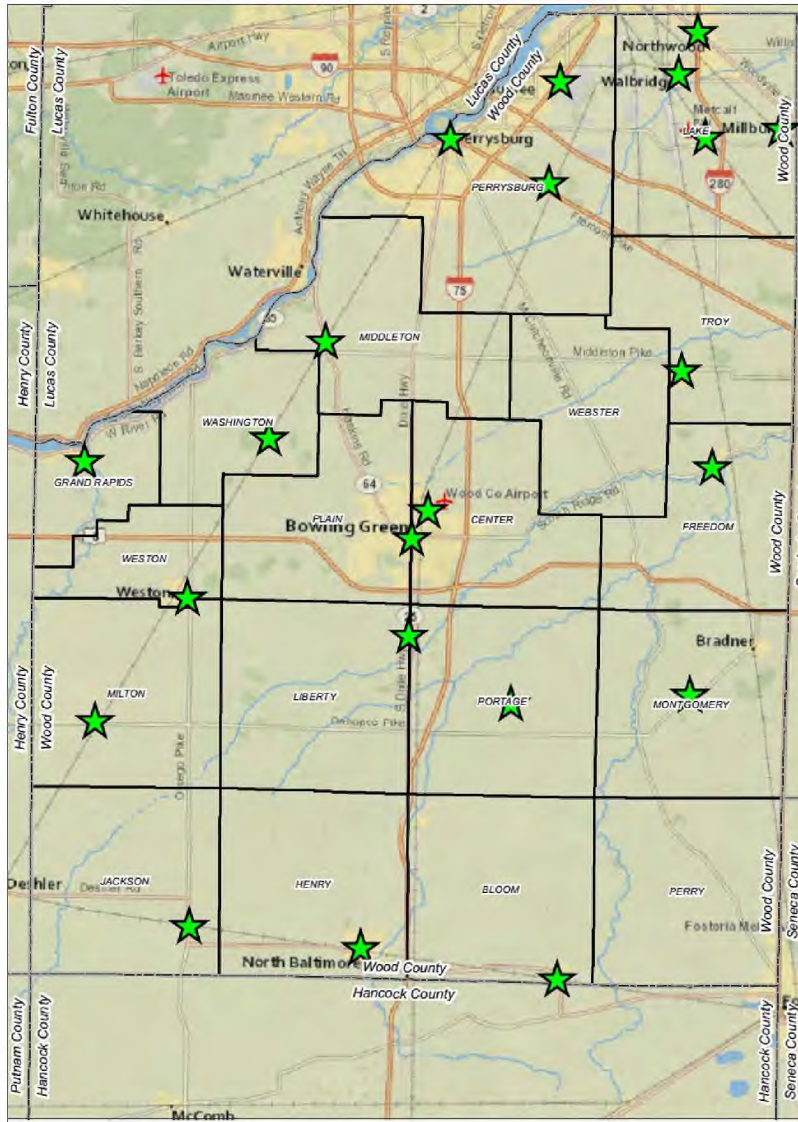
### Geographical Observations

The curbside recycling programs, both non-subscription and subscription, are mainly located in the more highly populated areas of the District. Non-subscription programs are located in the City of Bowling Green and the City of Perrysburg, the two largest cities in the District. The Village of Haskins also operates a non-subscription curbside program. The subscription programs are located in the City of Rossford, City of Northwood, Village of Walbridge and Lake Township, which are all located in the northern part of the county.

In 2018, the District established a countywide 24/7 residential recycling drop-off program to ensure full-time access to recycling for the District's rural population, primarily in the central and southern part of the District. The program includes twelve sites strategically located throughout the county. The sites have varying numbers of containers based on population needs. The Village of North Baltimore operates a part-time weekly rural drop-off site in the southern part of the county.

The Bowling Green Recycling Center (BGRC), a non-profit full-time urban drop-off site located in the City of Bowling Green, supplements the recycling programs offered throughout the District. BGRC is open 24 hours per day. It is centrally located in the county and can accept large amounts of recyclables. BGRC serves as an additional recycling location for residents in the rural communities that might experience high volumes at their smaller sites.

Prior to the recycling program changes in the northern part of the county, recycling was widespread throughout all areas of the District. Although fewer residents are using the subscription services due to cost, residents from the northern part of the District may also be using drop-off sites in Lucas County. Overall, the combination of residential curbside recycling programs and the large number of drop-off sites provide most District residents with convenient opportunities to recycle.

**Figure H-1. Residential Recycling Infrastructure**

### Functionality Observations

The City of Bowling Green and the City of Perrysburg provide non-subscription curbside service on a weekly basis. The other curbside programs in the District are serviced on a bi-weekly schedule. The District is unaware of any concerns or complaints regarding the frequency of collection with curbside programs.

The countywide 24/7 drop-off sites are serviced weekly, except the Perrysburg Township site, which is serviced twice per week. The drop-off sites experienced unprecedented volume during the reference year due to the Covid-19 pandemic. More people were



staying at home and generating more recyclables. Even outside that time, some of the sites have had full containers prior to servicing and must be temporarily closed to prevent residents from placing materials on the ground.

The Bowling Green Recycling Center (BGRC) drop-off is open 24 hours per day and serves as an alternative recycling location for drop-off sites with high volume. The BGRC website indicates that materials accepted and specifications for preparation are subject to change based on market conditions. The District is unaware of any concerns or complaints regarding these periodic limitations.

Multi-family housing residents have access to recycling at the BGRC and at the drop-off sites located throughout the District. The District's website and various community websites provide information on the availability of these services.

Overall, the types of recycling services available throughout the District are appropriate for the locations. Curbside works well in the larger communities but would be difficult to implement in the small villages and/or townships and the drop-off sites provide access in the rural areas. All the curbside programs and drop-off sites collect a comprehensive mix of materials, with two limitations. The City of Perrysburg no longer accepts glass in their curbside program and the Perrysburg Township drop-off site no longer accepts cardboard. The cardboard exclusion was due to the drop-off site being overused by commercial businesses and contractors. The BGRC is offered as an alternative site for cardboard and glass recycling. Generally, the countywide 24/7 program has adequate capacity for the residential population of each site. In 2021, the City of Perrysburg partnered with O-I Glass Inc. to create an alternative glass drop-off recycling opportunity for residents and businesses. The program has three locations in Perrysburg.

The District has identified some locations that could benefit from new programs and/or additional infrastructure. First, Perrysburg Township may want to consider a curbside program due to the township's continued population and new housing growth. This would provide a more convenient method of recycling for township residents and may be financially feasible due to the number of residents in the area. Second, the northern part of the county might benefit from the strategic placement of some drop-off sites to help supplement the curbside programs currently being offered and to provide more convenient access to recycling for the multi-family residents in that area.

#### Effectiveness v. Cost

For reference year 2020, the cost per ton for the District's countywide 24/7 Residential Drop-Off Program was as follows:

- Cost of Program - \$126,262.32
- 760 tons collected
- \$166/ton

The District contracts with Republic Services and pays a per container charge for servicing. This charge includes collection, transportation, and processing of the materials. Republic also charges a fuel surcharge. The District has a five-year agreement with annual increases. There is no revenue-sharing component of the contract. The Republic

Services contract will be expiring in 2023 and the District will be seeking competitive proposals for the program.

For reference year 2020, the cost per ton for the City of Bowling Green's curbside program was as follows:

- Cost of Program - \$170,166.39
- 999.76 tons collected
- \$170/ton

The City of Bowling Green staff collect the curbside recyclables and transport them to the Republic Services transfer station in Toledo, Ohio. Republic then transports the materials to its processing facility. The city's agreement has a revenue sharing component.

**Figure H-2 Comparison of Cost/Ton for District's 24/7 Drop-Off Program and City of Bowling Green's Curbside Program**



Figure H-2 demonstrates the cost per ton for the District's 24/7 drop off program and the City of Bowling Green's curbside program in 2020 and 2021. The District's cost per ton increased in 2021 due to lower tonnage and an increase in Republic Services' contract price. The City of Bowling Green's cost per ton decreased in 2021 due to increased revenue sharing with Republic Services.

**Table H-2 Comparison of Drop-off Costs with Other Districts**

<b>District</b>	<b>Year</b>	<b>Cost/Ton</b>
Belmont-Jefferson <sup>17</sup>	2017	\$363
Carroll-Columbiana-Harrison <sup>18</sup>	2019	\$246
Clark <sup>19</sup>	2015	\$69
Miami <sup>20</sup>	2018	\$22
Wood	2020	\$166

The District also compared the programs cost/ton to other SWMDs. The difficulty with this type of comparison is the varying types of recycling programs and cost structures. However, the average cost/ton of recycling of the SWMDs listed above is \$169/ton, which is similar to both the City of Bowling Green and the District's drop-off program.

The City of Perrysburg regularly surveys Bowling Green, Perrysburg, Oregon, and Toledo regarding their curbside recycling programs. Garbage/recycling collection costs were estimated to be \$132 per household for Maumee, \$144 per household for Bowling Green, \$151 per household for Oregon, \$161 per household for Sylvania, and \$218 per household for Perrysburg. While the City of Perrysburg had the highest estimated per household curbside recycling cost (\$218/year) the suite of services offered through this program is robust and includes unlimited bulk pickup and free pickup of difficult to manage wastes such as appliances, carpets, limited electronics, and tires.

The District will continue working on collecting more data from other recycling programs both within and outside the District to better understand the differences between programs.

#### Access to information

Many of the cities, villages and townships that have curbside or drop-off sites have websites, Facebook pages or similar on-line presence that are used to promote available recycling opportunities. The District will periodically share recycling concerns and/or upcoming events with community officials who will then place the information on the community Facebook page. Additionally, the District's website lists the recycling opportunities located throughout the county and provides links to the other communities' websites.

#### Participation/Performance - Curbside Recycling Programs

The District has experienced curbside program changes since the last plan update. The Village of Millbury discontinued its program entirely while the City of Rossford and the City of Northwood shifted to subscription programs due to increased contract costs. While the District subsidizes the curbside programs by providing annual per capita payments, all program decisions are made by the local government.

<sup>17</sup> Jefferson Belmont Regional Solid Waste Authority Solid Waste Management Plan, 2021.

<sup>18</sup> Draft Stark, Tuscarawas, Wayne Joint Solid Waste Management District Plan, January 2021.

<sup>19</sup> Clark County Solid Waste District Ratified Plan, January 2019.

<sup>20</sup> Miami County Solid Waste Management District Ratified Plan, December 2021.



The District has not received significant performance data from the curbside programs. This is an area that the District could expand upon, including surveying the curbside programs for information such as cost of program, cost to resident, frequency of service, level of participation, accepted materials, economic incentives, and other similar information. The District could then compare the programs and costs to share with the group. The District may want to consider utilizing the services of a consultant or Bowling Green State University (BGSU) to create a uniform survey for the curbside programs.

Generally, communities offering curbside programs have high participation rates due to the convenience of recycling at home. As communities have switched to commingled, automated collection of materials, the number of recyclables collected, and collection efficiency has also increased. All the curbside programs in the District are commingled and automated. Curbside recycling information is available on the District's website with links to the respective communities offering the service.

The City of Perrysburg and Perrysburg Township are expected to grow in population during the planning period. The City of Perrysburg has a strong curbside program that should be able to accommodate growth. Perrysburg Township may need to consider implementing a curbside program if the capacity of its drop-off site becomes limited.

Multi-family housing is a sector that is not served by curbside recycling. Multi-family housing residents can utilize the 24/7 drop-offs and the BGRC. Currently, the District does not perform outreach to apartment managers to promote recycling. The District could develop brochures and educational outreach materials for multi-family housing residents and BGSU off-campus students.

The main challenges facing curbside programs are contamination issues and the rising cost of recycling.

#### Participation/Performance - Drop-Off Recycling Sites

In 2018, the District implemented a new countywide 24/7 residential mixed recycling drop-off program. This full-time rural program replaced the District's former part-time mobile satellite program, which operated monthly. The new 24/7 drop-off program has been very popular with residents. Even with the number of sites being reduced from 15 to 12, the total annual tonnage of recyclables collected in 2020 increased by over 800% compared to 2017 under the former program. The District has also increased the number of accepted materials at the sites to include glass, wax cartons, and household plastics. The 12 permanent full-time sites are located strategically throughout the county and have a total of 51 bins. The bins are serviced weekly, and the materials are collected and processed by Republic Services. Each site is maintained by a community group or host community.

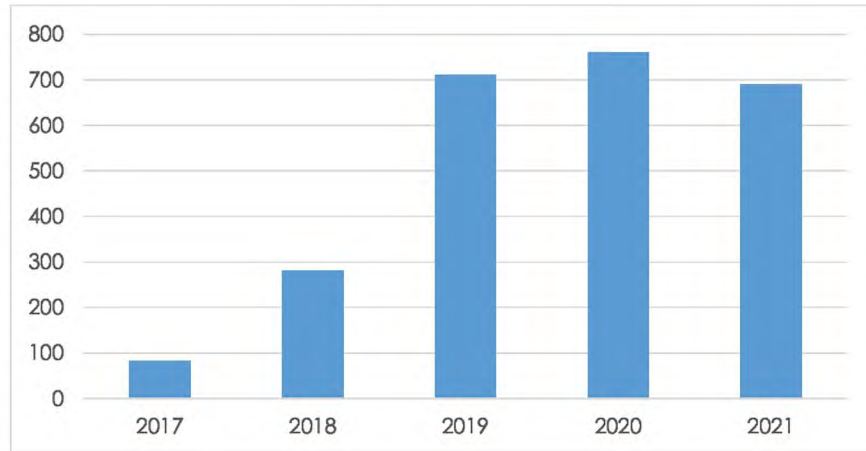
**Figure H-3      2017 - 2021 District Sponsored Drop-Off Recycling Program (tons)**

Figure H-3 compares the District sponsored drop-off recycling program tonnage from 2017-2021. The District utilized a mobile satellite monthly program in 2017 and implemented the new 24/7 program in July 2018. Total tonnage: 2017 - 83 tons; 2018 - 281 tons; 2019 - 712 tons; 2020 - 760 tons; 2021 - 691 tons. BGRC drop-off, North Baltimore drop-off and the former N.A.T. drop-off are excluded from the totals.

After the new program was created, N.A.T. Transportation Inc. discontinued its 24/7 drop-off collection. The Village of North Baltimore retained its mobile weekly collection program rather than participate in the District's new program.

During reference year 2020, the District received several complaints from residents and local governments that a few sites were at capacity prior to the weekly service date. Some communities requested the District provide additional bins or additional servicing. This was not possible due to limitations with Republic Services' ability to add service routes and the District's budgetary constraints. The District relocated some bins to other sites to address temporary volume concerns and created portable signs to help the communities manage the sites during high volume.

The portable signs have been a valuable tool for the sites. If the bins reach capacity prior to the servicing, the sign is placed in front of the bins indicating a temporary closure until the weekly service date. The signs can usually be seen from the road; thus, residents are made aware that the site is full prior to parking, unloading, and attempting to place materials in full bins. As a result of the signs, complaints have decreased.

The City of Rossford and City of Northwood approached the District during reference year 2020 regarding the possibility of the District establishing drop-off sites in their communities. The District advised against expanding the rural program into these higher population areas and recommended the cities investigate a subscription curbside program. Ultimately, both cities adopted a subscription program.

### Challenges at the Drop-Off Sites

The District has experienced challenges at the drop-off sites, including contamination, illegal dumping, capacity, servicing issues, and confusing signage. Gathering performance data from individual drop-off locations is also a challenge as Republic Services is unable to report tonnage per site.

The District does not have a system in place to measure contamination. In reference year 2020, prior to the Covid-19 pandemic, District staff were planning a contamination audit at the Republic Services transfer station. However, it was canceled after the enactment of the stay-at-home order and social distancing requirements.

The contamination and illegal dumping issues seem to have improved over the last year due to educational efforts and some police enforcement. District staff periodically visit the sites and audit the materials placed in the bins and have sent educational mailers to some problem communities. Host communities also educate and enforce when needed.

Another issue is blowing recyclables and/or litter. Wood County is very flat and windy. Some communities have repositioned their bins to protect them from the windy conditions by taking advantage of a wind break, such as a building, fence, or tree line. Additionally, to help address the wind issues, lid locks and zip-ties have been utilized on some bin lids. The District continues to work with host communities on bin placement. Some bins have been repositioned due to poor drainage, muddy conditions, and other similar site issues.

### **B. Residential Recycling Infrastructure Analysis Findings**

Overall, the combination of residential curbside recycling programs and the large number of drop-off sites provide most District residents with convenient opportunities to recycle.

Curbside programs have changed since the last plan update. Due to increased costs, one community has discontinued its curbside program in its entirety, while two other communities have transitioned to subscription programs. District staff will continue to work with these communities to identify cost-effective recycling opportunities for their residents.

The District has implemented new residential drop-off recycling infrastructure since the last plan update. The county satellite monthly collection program has been discontinued and replaced with the District's 24/7 residential mixed drop-off program. The new program has been very successful. The District would like to develop an improved method for regularly monitoring the drop-off sites to evaluate capacity and contamination issues. The District plans to evaluate additional educational programs, new signage, and may consider surveillance cameras to help decrease contamination.

Evaluating performance data for both the drop-off and curbside programs has been challenging. The District is unable to gather performance data for individual drop-off sites. The Republic Services' truck route collects materials from several drop-off locations and



then transports the materials to the Republic Services transfer station where the entire load is weighed. Without individual site or specific program data, comparing program performance by program type with other Districts is not feasible. The District is working with limited information and will continue to seek solutions for the data collection problem.

Similarly, the District does not have comprehensive performance data for all district curbside programs. The City of Perrysburg regularly surveys Bowling Green, Perrysburg, Maumee, Sylvania, Oregon, and Toledo regarding their curbside recycling programs. The District could use this survey or similar tool to obtain curbside data from the other programs in the District.

The District will continue to evaluate whether the county's rural population and multi-family housing residents are adequately served.

Finally, the District has identified some locations that could benefit from new programs and/or additional infrastructure. Perrysburg Township may want to consider a curbside program due to housing and population growth. The northern part of the county may benefit from some drop-off sites to help supplement the curbside programs and provide more convenient recycling access to multi-family residents. The District will continue evaluating the necessity of these new programs.

## **2. Commercial/Institutional Sector Analysis**

This section evaluates the commercial/institutional sector to determine if existing programs (offered either through the District or other entities) are adequate. The strengths and weaknesses of existing programs are also discussed.

The commercial/institution sector includes the following (non-exhaustive list):

- Commercial businesses
- Schools and universities
- Government agencies
- Office buildings
- Park systems
- Hospitals and nursing homes

### **A. Commercial/Institutional Sector Analysis Overview**

#### Geographical Observations

The District has many commercial and institutional organizations located throughout the county. However, the populous northern part of the county has the most commercial business while the rural southern part of the county has more agriculture. The District is home to many educational institutions including Bowling Green State University, Owens Community College, Penta Career Center, Wood Lane School, and nine public school districts. There are four cities in the District, each of which has a downtown business corridor. Many of the villages also have a strong downtown business presence. The District

has various hospitals, nursing homes and medical clinics, including Wood County Hospital located in the City of Bowling Green and Mercy Health Hospital located in the City of Perrysburg. Wood County government is located in the county seat of Bowling Green and includes Wood County administrative offices and departments, the Common Pleas Courts, the Sheriff's Office, and the Wood County Jail.

#### Functionality Observations

##### i. Private Haulers/Private Recycling Opportunities

Commercial businesses can contract with local haulers for a variety of recycling services. The District will assist connecting commercial/institutional organizations with providers. Additionally, the Bowling Green Recycling Center will accept commercial/institutional recycling.

##### ii. Wood Lane Industries

For many years the District partnered with Wood Lane Industries (WLI) in making recycling collection available to schools, government offices, parks, detention centers, industries, nursing homes, assisted living facilities, churches, apartment complexes, manufacturers, and other organizations. WLI collected office paper, cardboard, steel, aluminum, plastic bottles, books, and some glass. The materials were delivered to the Bowling Green Recycling Center (BGRC). The BGRC paid WLI for the recyclables and the District provided WLI financial support. In reference year 2020, WLI abruptly discontinued the program and informed the District that the program was no longer feasible due to Covid-19 and increased costs.

Since the Covid-19 pandemic was on-going, offices and institutions had to quickly find their own recycling alternatives. Many of the businesses and offices responded by collecting and delivering their own materials to the BGRC, including the Wood County Courthouse and Administrative Offices Complex, the Wood County Senior Center, and the Historical Museum. Some schools developed in-house programs and others looked to find contracted haulers. Wood County government installed two drop-off boxes for the Wood County Sheriff's Office/Wood County Jail and the Wood County Department of Job and Family Services, which are serviced weekly by Republic Services. Several other government agencies contracted separately with Republic to have drop-off bins at their facilities, including Northwest Community Corrections Facility and the Wood County Health Department.

##### iii. Bowling Green State University

The District has had various partnerships with Bowling Green State University (BGSU) since the 1980s. BGSU receives funding from the District as part of the per capita incentive grant program. This funding is to be used to support on-campus recycling initiatives. Currently, comingled recyclables are collected campus wide. The campus also provides several unique recycling programs for students, faculty, and staff. One example is the "WYMO" (When You Move Out, Don't Throw It Out) event hosted at the end of the school year. This event collects clothing, food, electronics, books, cleaning supplies and other

unwanted materials as students are moving out. A composting program is also ongoing at one of the larger dining halls with materials being sent to Hirzel Farm's composting facility in Wood County. The District works in partnership with BGSU to create sustainable events in the City of Bowling Green such as the Black Swamp Arts Fest and BG Bash. Also, the District promotes recycling during BGSU's Earth Month events in April. Landfill tours and environmental presentations are provided to BGSU students annually.

iv. Special Events

The District currently owns eighty-five (85) ClearStream recycling containers. Prior to the Covid-19 pandemic, these containers were widely used throughout the county. The design of these containers encourages recycling of aluminum cans and plastic bottles with minimal contamination. The containers are loaned to the community or event coordinator to encourage recycling.

The District may consider attending various events throughout the county (e.g., farmers markets, fairs, festivals, parades) to encourage recycling and provide outreach materials.

v. District Assistance

The District provides waste audits to commercial businesses at no cost. Due to the Covid-19 pandemic, no audits were completed in reference year 2020. The District also provides assistance to businesses in finding recycling options and services, including directing them to information provided on the District's website.

vi. Commercial/Institutional Recycling Data

The District receives recycling data from "big box" stores through the Ohio Material Recovery Facility & Commercial Recycling Data survey. Additionally, some businesses and institutional organizations provide data through the Annual District Report survey. Since businesses are not required to provide recycling information, the District has no control over the number of entities that respond to a survey or the quality of the data it receives.

Beyond the survey results, the District is unable to determine which businesses or organizations are recycling. Some organizations are utilizing commercial providers, but due to the commingling of residential and commercial recycling during collection and processing, the District cannot calculate what percent of recycled materials are from commercial/institutional sources.

The District has attempted to obtain a comprehensive listing of commercial and industrial facilities with contact information from the Wood County Economic Development Office, the local Chamber of Commerce Offices, and BGSU to facilitate better communication. However, the District has found that no official directory exists, and existing lists are incomplete.



**B. Commercial/Institutional Sector Analysis Findings**

Most commercial businesses have access to recycling in the District. The District has a wide variety of private haulers and businesses that will accept recyclables from commercial/institutional organizations. BGRC is centrally located in the county and accepts recyclable materials from commercial and institutional facilities. The District also has two recycling providers that service large commercial/institutional accounts, Republic Services and Waste Management.

District staff will continue to provide waste audits at no cost to businesses. This service was underutilized due to the Covid-19 pandemic but will remain available during the planning period.

The discontinuation of the WLI recycling collection program affected many organizations. The WLI services were utilized extensively throughout the county. Some of these organizations have found transportation for their recyclables or have contracted with a commercial hauler, others have discontinued recycling.

Due to the Covid-19 pandemic, facilitating a new system or provider has been difficult. The District could consider surveying these businesses and organizations to see if any partnerships can be developed. For example, school districts may be able to establish an in-house drop-off program and collectively contract with a service provider. It is challenging that only two commercial recycling providers currently operate within the county. Rumpke Waste & Recycling has indicated interest in expanding its service area north, which would provide additional competition for these services.

Similar types of businesses may also want to pool resources to hire a contractor to collect and deliver their recyclables to BGRC. The businesses located in the downtown corridor of the City of Bowling Green do not produce the volume of recyclables to have an in-house program. However, the District could work with the City of Bowling Green and local businesses to evaluate a shared recycling program.

The District's partnership with BGSU is working well. BGSU has a robust recycling program. Identifying trends and opportunities with this transient population is challenging and the District relies on BGSU's expertise and in-house programs to serve these students. The District will continue to support BGSU with education, outreach, and per capita funding.

The District's staffing level is a limitation when considering the establishment of new programs and/or services for the commercial/institutional sector. The District employs one full-time employee to perform recycling outreach and education. The District has also experienced extensive staff turnover. Until new staff are in place and trained, evaluating and implementing new programs will be difficult.

### 3. Industrial Sector Analysis

This section evaluates the industrial sector to determine if existing programs (offered either through the SWMD or other entities) are adequate to serve that sector or if there are needs that are not being met.

#### A. Industrial Sector Analysis Overview

During reference year 2020, despite the effects of the COVID-19 pandemic, Wood County's economic base continued to grow. There were several announcements of new jobs and capital investments by private sector employers. Historically, most manufacturing in Wood County has involved either the production of food, automotive parts and sub-assemblies, or machinery. However, Wood County has seen a diversification of its industrial tax base over the last several years. Alternative energy manufacturing has become an important part of Wood County's economy. In 2021, First Solar broke ground on a \$600 million dollar expansion to its solar panel manufacturing facility in Lake Township. A new float-glass production facility owned by NSG North America that makes specialty glass for the solar panel industry went into production in Troy Township. Several large warehousing/distribution facilities were built, including Fed Ex, Walgreens, Home Depot Warehouse, UPS Distribution, and Amazon Fulfillment Center. As the economic climate currently stands, Wood County is poised to see more capital investment and job creation.

**Table H-3 Top Ten Manufacturing Employers in Wood County (2022)<sup>21</sup>**

<b>Largest Manufacturing Employers</b>	<b>Employees</b>
Amazon	4,000
Fed Ex	2,300
Magna International	2,200
First Solar	1,500
Home Depot	1,200
Walgreens	1,000
Chrysler	800
O-I Glass	700
NSG	550
Adient	500

Most industrial sector recycling programs are created in-house with on-site staff to manage their waste streams. Interaction with this sector is challenging because waste streams are specialized, and manufacturing processes are often proprietary. Collaboration amongst industries can also be difficult for the same reasons.

In reference year 2020, the amount of industrial waste reduced/recycled was 110,407 tons, all of which was reported through industrial surveys. The 2017 Plan projected this amount would be 95,510 tons, so actual industrial tonnage recycled was approximately 14% higher than predicted. Table H-4 below shows the projected vs. actual reported tonnage for the industrial sector. Wood County has historically reported very high

<sup>21</sup> Personal Communication with Wade Gottschalk, Wood County Economic Development Office, March 17, 2022. Largest Manufacturing Employers, 2022.

industrial recycling rates. Most of the industrial waste reported is currently being reduced/recycled at rates of 94-96%, an increase of the projected 88-89%.

**Table H-4 Industrial Waste – 2017 Projections Compared to Actual**

Year	Reduced/ Recycled	Disposed (Landfill)	Total Generated	Population	% Industrial Waste Reduction	Industrial waste reduction per capita (ppd)
<b>2017 Plan Projections</b>						
2017	96,510	12,422	108,932	125,748	89%	4.2
2018	96,510	12,095	108,605	126,012	89%	4.2
2019	96,510	11,769	108,279	126,276	89%	4.2
2020	96,510	11,445	107,955	126,540	89%	4.2
<b>Actual Reported Tonnage</b>						
2017	123,282	5,608	128,890	130,437	96%	5.2
2018	109,533	6,937	116,469	130,441	94%	4.6
2019	127,694	6,854	134,548	130,817	95%	5.3
2020	110,407	7,122	117,529	130,870	94%	4.6
<b>% Difference Between Projection and Actual</b>						
2017	28%	-55%	18%	4%	8%	23%
2018	13%	-43%	7%	4%	6%	10%
2019	32%	-42%	24%	4%	6%	28%
2020	14%	-38%	9%	3%	5%	11%

The District will provide informational and technical assistance on recycling, reuse, and waste reduction to the industrial sector. Waste audits will be performed upon request and information is available on reducing, recycling and eliminating waste generation. In recent years, the District has not received requests for assistance with waste audits or industry recycling programs. The District also promotes the Ohio EPA Recycle Ohio Market Development Grant Program to the industrial sector. In 2019, the District served as the applicant organization and funding pass-through for Rosenboom Tool and Die. The grant provided funding to purchase a paperboard baler, diverting 30 tons of material from the landfill through a local recycling facility. In 2021, the District served as the applicant organization for a local business that processes plastic bottles and the application is pending.

To engage the industrial sector, District staff have been preparing the Annual District Report, rather outsourcing this task. As part of this process, the District must interact with the businesses to request certain recycling information. Staff are developing a master industry list with contact information. The District has adopted Ohio EPA's standardized survey, which provides an opportunity for the company to check a box requesting District assistance with recycling programs or waste reduction activities. In the past year, the District has seen an increase in dialogue with local companies and will keep working on developing these relationships over the planning period.

The District also plans to participate in the monthly economic development business roundtable luncheons held throughout the county. This will allow the District to network and provide updates on District activities and services.



## **B. Industrial Sector Analysis Findings**

Existing in-house recycling and waste reduction programs are adequate to serve the industrial sector.

To meet the 2020 State Plan requirements, the District will (1) provide waste audits/assessments, (2) promote the Ohio Materials Marketplace regarding hard to recycle materials, and (3) provide assistance with identifying grants for developing or improving recycling.

District staff will be attending monthly economic development business roundtable luncheons and the District will continue working on maintaining and updating a master list of industries with contact information. Staff will work closely with the Wood County Economic Development Office and local chamber of commerce organizations to increase business awareness of the District's offerings (e.g., waste audits).

District staff could consider an annual awards program to recognize recycling and reduction efforts in local industries.

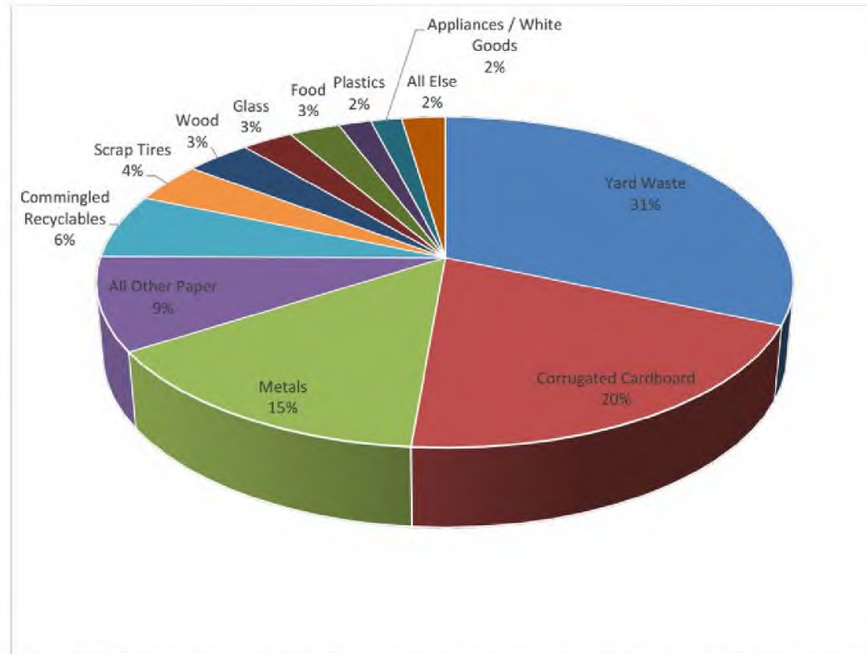
## **4. Residential/Commercial Waste Composition Analysis**

This section evaluates the wastes that typically make up the largest portions of the residential/commercial waste stream and helps determine whether the District currently has or should have programs to address those wastes.

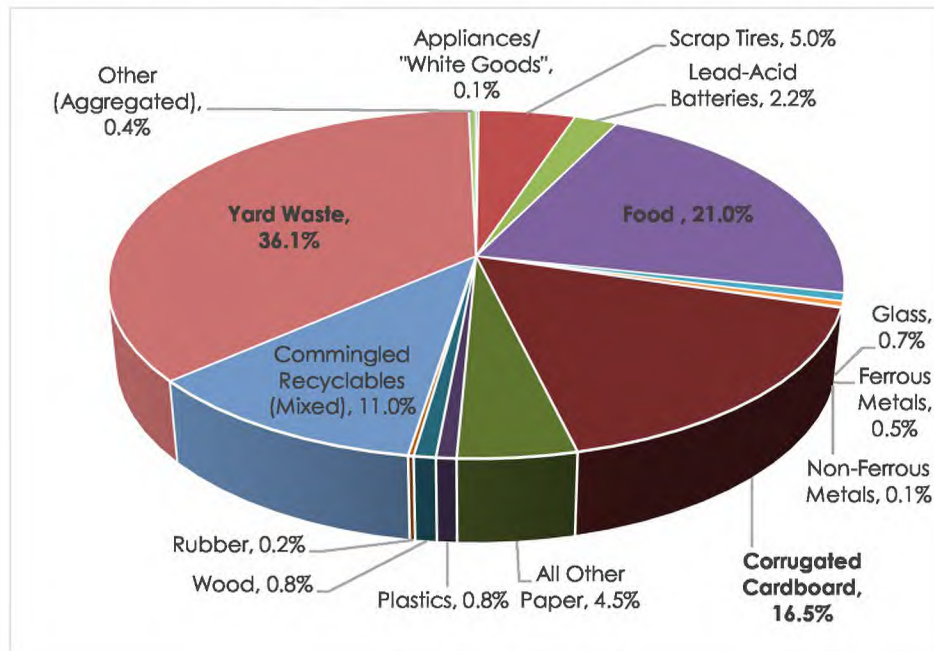
### **A. Residential/Commercial Waste Composition Analysis Overview**

Overall, the predominant wastes diverted in the residential/commercial sector are yard waste, food waste, and fiber. Figures H-4 and H-5 compare statewide average and Wood County average material diverted, respectively. Compared to statewide percentages<sup>22</sup>, food makes up a higher-than-normal portion of Wood County's diverted waste stream. Metals are a smaller percentage of the total (0.6%) compared to the statewide average (15%). However, the District total for ferrous and non-ferrous only includes the Bowling Green Recycling Center (BGRC) as these materials are counted in the Commingled Recyclables category (11%) for the drop-off and curbside programs. Findings related to the three top waste streams generated are discussed below.

<sup>22</sup> Division of Materials and Waste Management. December 2021 Guidance/Fact Sheet 1011 "2020 Reduction and Recycling Statistics"

**Figure H-4 Residential/Commercial Material Recovery in Ohio <sup>21</sup>**

"All Else" consists of, textiles, used oil, lead-acid batteries, electronics, household hazardous waste, household batteries, rubber, and other misc. materials.

**Figure H-5 Residential/Commercial Material Recovered in 2020 in Wood County**

### Yard Waste

In reference year 2020, commercial facilities diverted 14,848 tons of yard waste. The District has 10 Class IV composting facilities that accept yard waste (see Appendix B – Recycling Infrastructure Inventory). Woodville Road nursery accepts waste from

residential collections in addition to materials from their operations. Envirocare Lawn and Landscape and Henry Landscape all process materials from their operations but are not open to residents. Florallandscape and the City of Fostoria are not located within the District but have accepted yard waste from Wood County residents.

Most local governments also offer seasonal yard waste collections. Some communities land-apply yard waste (mostly leaves and grass). Brush is chipped and given to residents for mulch. Some of the more urban areas have contracted haulers to provide pick-up service or host curbside brush and leaf collection. Others have provided a drop-off area for their residents for grass, brush, and leaves.

The Wood County Landfill has a yard waste facility open to all District residents. Brush is ground into mulch and then sold to residents and leaves and grass are composted and used at the landfill. The landfill also accepts wood chips from public entities at no charge and regrinds this material into mulch.

A listing of available composting facilities is maintained on the District's website. The District provides educational materials and programming about managing yard waste. The District promotes Christmas tree recycling during the months of December and January through its "tree-cycling" advertisements, media blasts and on the District's website. Residents may also dispose of one Christmas tree at no charge at the Wood County Landfill. The trees are then chipped and recycled into mulch or used as temporary wildlife habitat by the local parks. Currently, over 20 locations accept Christmas trees.

The District formerly provided funds to local communities through the Capital Grant Program for woodchippers and leaf vacuums with the stipulation that the materials not be landfilled and that volumes be reported. Due to funding limitations, these grants were suspended. However, several communities are still using the equipment purchased by these grants and report the amounts diverted annually.

### Food Waste

The U.S. Environmental Protection Agency (EPA) estimates that in 2018 alone, more than 63 million tons of food was wasted, and about 40% of that came from households. This estimate represents the single largest material in our everyday trash being sent to landfills and combustion facilities in the United States.<sup>23</sup> Wood County recycles a higher than normal amount of food waste (21%) compared to the Ohio average (3%).

Hirzel Farms operates a Class II composting facility in the District. It accepts waste materials from outside sources in addition to materials derived from the Hirzel Canning operations. This facility also accepts waste from the residential organics curbside collection recycling program in the Village of Luckey operated by N.A.T. Transportation Inc. Bowling Green State University diverts postconsumer food waste to Hirzel Farms along with several other businesses and organizations within Wood County.

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<sup>23</sup> 2018 Wasted Food Report, EPA 530-R-20-004, November 2020, Office of Resource Conservation and Recovery



The District did not receive any food waste diversion data for reference year 2020. In 2019, Hirzel recorded 7,801.78 tons of composted food waste. The 2017 Plan projected Hirzel would divert 2,610 tons of yard/food waste in 2020 so actual diversion at this facility was nearly 200% higher than projected.

Programs for managing food waste that are open to the public are limited. In 2021, the City of Bowling Green established a residential Food Waste Drop-Off. The city contracted with GoZero on the project. All collected food waste is taken to Andre Farms in Wauseon, Ohio to be composted. The following food items are accepted: baked goods and pasta, beans and eggs, fats and sugars, fruits and vegetables, greasy pizza boxes, paper towels and napkins (unlined paper items), and raw/cooked meat, bones, and dairy. The program is limited to residential participation, but the city encourages businesses to contact GoZero directly for commercial services. The District will be working with the city to obtain data and information about this new program to share with other entities in the District.

GoZero also operates a subscription food waste drop-off program through Balance Pan-Asian Grille in the City of Perrysburg. Subscribers pay \$10/month for this service.

The District does not currently have diversion programs for large generators, such as food manufacturers, grocery stores, restaurants, etc. The District provides education and workshops for residents to learn how to reduce food waste and how to compost in the backyard.

### Fiber

The Covid-19 pandemic significantly changed the purchasing methods of Americans over the last two years. People were buying groceries, clothes, cleaning products and other daily necessities on-line. Many of these items arrived on doorsteps in cardboard boxes. This trend is expected to continue during the planning period. Fortunately, used cardboard is a desirable commodity of the paper industry. According to Waste 360, entrepreneurs see opportunity in the Chinese ban on mixed paper imports. A new paper mill in Wapakoneta, Ohio is only one of almost two dozen expanded and new facilities that are being built in North America.

Corrugated cardboard recovered in commercial/residential sector was third to yard waste and food for the District.

Most large businesses and organizations have in-house recycling programs for paper and cardboard. For example, the Home Depot Warehouse in Troy Township has specialized equipment to sort, process and bale their cardboard. It is then transported and sold to a paper mill. Grocery stores and box stores have also developed their own management of fiber. Large generating box stores submit data to OEPA annually and there has been an increase in fiber recycling in reference year 2020.

Most office settings also recycle their paper materials. However, during the Covid-19 pandemic, Wood Lane Industries (WLI) discontinued collection of recyclables, which caused some disruption in recycling fiber. Many offices found private solutions or

transported the materials to BGRC. The Wood County Courthouse and Administrative office complex worked with the maintenance department and District to quickly find a solution. The District provided educational materials and purchased collection bins. The maintenance staff took on the role of separating the materials and transporting them to BGRC.

As for residential programs, the City of Perrysburg and Perrysburg Township have discontinued collection of large cardboard via drop-offs. The two locations were receiving an excessive amount of cardboard from both residents, businesses, and contractors. At the Perrysburg Township drop-off, contractors were filling the bins so fast with large bulky cardboard that residents could not recycle other materials. With demand increasing for fiber, the District may have an opportunity to collaborate with these local governments and private haulers to work towards a solution for cardboard.

### ***B. Residential/Commercial Waste Composition Analysis Findings***

Most of the diversion programs for yard, food and fiber offered in the 2017 Plan are still available. However, Perrysburg Township discontinued accepting cardboard and the City of Perrysburg also discontinued its cardboard drop-off. Both communities are directing residents/businesses to take large cardboard to the BGRC. City of Perrysburg residents can recycle small or broken-down cardboard through curbside recycling.

The District has adequate infrastructure for disposal of residential/commercial yard waste at the 12 registered composting facilities in the District.

In 2020, the District recycled food waste at a higher percentage than the state average. Additional programs for food waste diversion may be considered in the planning period. District staff will also evaluate the strengths/weaknesses of the City of Bowling Green's food diversion program.

The District has existing infrastructure and programs for cardboard and other fiber materials including the BGRC, curbside programs and most drop-off locations. The District will continue to evaluate programs that could help increase the amount of cardboard/fiber recycled (e.g., fiber only drop-off, private cardboard/paper collection services).

The District has discontinued providing grants to local communities for woodchippers and leaf vacuums due to financial constraints. If requests are made for this equipment during the planning period, the District can re-evaluate whether it is financially feasible.

Recovering corrugated cardboard boxes and mixed paper can be strengthened by the District through outreach and working with local governments to consider incorporating fiber-only drop-offs or transportation of materials to BGRC.

## 5. Economic Incentive Analysis

Goal 7 of the 2020 State Solid Waste Management Plan requires the District to explore how to incorporate economic incentives into source reduction and recycling programs. This analysis evaluates existing economic incentives and considers the feasibility of new programs.

Economic incentives are designed to encourage participation in recycling programs. Typical economic incentives include rebates, rewards, grants, volume-based fee structures, etc. The majority of SWMDs offering economic incentives in Ohio either tie the amount recycled to some sort of financial compensation or reduce the cost of recycling. The biggest limitation for implementing such programs in the District is funding.

### A. Economic Incentive Analysis Overview

#### Per Capita Incentive Program

The District provides incentive funding to each local government that participates in a residential recycling program. The program is subject to availability of funds. Currently, the allocation is \$1.00 per person for communities participating in a residential drop-off program and \$1.50 per person for providing a curbside program. Bowling Green State University also receives a per capita payment of \$1.00 per on-campus student. The local governments are paid annually, and the population is based upon the most recent federal census. In return for receiving these funds, each local government must annually report the volume of materials recycled and diverted from the landfill. The District paid \$160,850.50 in per capita incentive payments to local governments in 2020.

**Table H-5. Summary of Per Capita Grants in the Reference Year**

2020 Per Capita Grants		
Local Government	Amount	Recycling Program
Bowling Green State University	\$5,481.00	Campus collection
Bloom Township	\$1,003.00	Drop-Off
Village of Bloomdale	\$678.00	Drop-Off
City of Bowling Green	\$45,042.00	Curbside
Village of Bradner	\$985.00	Drop-Off
Village of Custar	\$179.00	Drop-Off
Village of Cygnet	\$597.00	Drop-Off
Freedom Township	\$1,356.00	Drop-Off
Grand Rapids Township	\$642.00	Drop-Off
Village of Grand Rapids	\$965.00	Drop-Off
Village of Haskins	\$1,782.00	Curbside
Henry Township	\$743.00	Drop-Off
Village of Hoytville	\$303.00	Drop-Off
Jackson Township	\$489.00	Drop-Off
Village of Jerry City	\$427.00	Drop-Off
Lake Township	\$10,129.50	Curbside
Liberty Township	\$1,633.00	Drop-Off
Village of Luckey	\$1,012.00	Drop-Off
Milton Township	\$656.00	Drop-Off
Village of Millbury	\$1,800.00	Curbside
Village of Milton Center	\$144.00	Drop-Off
Montgomery Township	\$1,752.00	Drop-Off



2020 Per Capita Grants		
Local Government	Amount	Recycling Program
Village of North Baltimore	\$3,432.00	Drop-Off
City of Northwood	\$7,897.50	Curbside
Village of Pemberville	\$1,371.00	Drop-Off
Perry Township	\$1,431.00	Drop-Off
City of Perrysburg	\$30,934.50	Curbside
Perrysburg Township	\$12,512.00	Drop-Off
Portage Township	\$1,083.00	Drop-Off
Portage Village	\$438.00	Drop-Off
Village of Risingsun	\$606.00	Drop-Off
City of Rossford	\$9,439.50	Curbside
Village of Tontogany	\$367.00	Drop-Off
Troy Township	\$2,858.00	Drop-Off
Village of Walbridge	\$4,528.50	Curbside
Washington Township	\$1,474.00	Drop-Off
Village of Wayne	\$887.00	Drop-Off
Village of West Millgrove	\$174.00	Drop-Off
Webster Township	\$1,283.00	Drop-Off
Weston Township	\$746.00	Drop-Off
<b>TOTAL</b>	<b>\$160,850.50</b>	

This program was instrumental in establishing the 24/7 residential drop-off program. Local governments were incentivized to participate and encourage residents to recycle. Many of the local governments divert their funds to community groups to assist with site maintenance. The groups pick up litter, dispose of illegally dumped materials and report site issues to the District.

The per capita program has also been key in helping to retain several of the municipal curbside programs. In 2019, the District increased the payment for curbside programs from \$1.00 to \$1.50 per person to help offset increasing costs. Even with this incentive, one municipality discontinued curbside and two others have shifted their programs to subscription. The City of Northwood temporarily ceased all recycling services but is now subsidizing the cost of subscription service to encourage recycling.

The District intends to continue this program through the planning period. There are no plans to increase the per capita payments or implement a quantity-based incentive aspect to the program.

#### Glass Recycling Payment

To offset the cost of recycling glass and to incentivize Bowling Green Recycling Center (BGRC) to continue accepting glass, the District pays BGRC \$30 per ton for glass accepted at the facility.

#### Grants Program

The District formerly provided capital grants to local governments for equipment purchases, such as balers, woodchippers and leaf vacuums, to help divert these materials from landfills. This program was suspended due to financial constraints. The District also provided an Infrastructure/Cleanup Grant program, which was also suspended during the last planning period.

### Pay-As-You-Throw Programs

The District is not aware of any communities with pay-as-you-throw (PAYT)/volume-based trash collection programs. The collection/hauling system in the District includes both public and private haulers of various sizes. District staff will provide assistance if an entity or individual expresses interest in volume and/or weight-based billing. The District will continue to research if any haulers are interested in establishing a PAYT program. If so, the District can provide information and a link to the hauler's site on the District website.

#### **B. Economic Incentive Analysis Findings**

The District's per capita incentive program has successfully encouraged local governments to participate in recycling programs. Due to financial constraints, it is not likely the District will increase the per capita funding amounts or develop further incentive-based programs.

The District does not plan on offering the Capital Grant Program or the Infrastructure/Cleanup Grant Program in the upcoming planning period. However, this could be re-evaluated in the future.

The District could explore whether any haulers or communities would be willing to consider a PAYT program.

## **6. Restricted and Difficult to Manage Waste Streams Analysis**

Goal 6 of the 2020 State Plan requires SWMDs to provide strategies for managing scrap tires, yard waste, lead-acid batteries, household hazardous waste, and obsolete/end-of-life electronic devices. Although not required by the 2020 State Plan, the OEPA encourages Districts to provide programs for several other categories of difficult to manage wastes, including appliances, pharmaceuticals, batteries, and bulky items.

#### **A. Restricted and Difficult to Manage Waste Streams Analysis Overview**

The District's strategy concerning difficult to manage waste streams is to educate the public on alternative materials and best disposal practices. Wood County is fortunate to have many local businesses offering ongoing disposal and recycling programs for electronics, batteries, tires, chemicals, unused prescriptions, paint, and other materials.

Through a combination of annual special collection events and on-going private sector recycling opportunities, the District has solutions for most difficult to manage materials. The following programs are analyzed below: Household Hazardous Waste (HHW), scrap tires, lead-acid batteries, electronics, appliances, pharmaceuticals, and bulky items.

### Household Hazardous Waste

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

The District does not have a permanent facility to manage household hazardous waste (HHW). The cost would be prohibitive given the amount of material that could be collected. The District also has no immediate plans to sponsor a special HHW collection event. Due to the cost, the District has historically been very cautious in this area. The District also has concerns that collecting materials, especially if done at no cost, encourages people to save up materials rather than changing purchase and use habits.

The District has conveniently located businesses and programs for most materials residents inquire about. The District is fortunate to have a hazardous waste processing facility located in the City of Bowling Green that accepts materials from residents on a walk-in basis. While the facility charges a per pound fee, it is a more affordable solution than a large-scale collection event or permanent facility. Additionally, residents have an immediate option for safe disposal, which minimizes the risks associated with storage of these types of materials.

The District maintains a current Household Recycling Guide, which lists all known locations, materials accepted, and business contact information for facilities that accept difficult to recycle items. Paper copies of this guide are distributed at events and displays, and an electronic version is available on the District's website. The City of Perrysburg also provides an A-Z Recycle and Disposal Guide for many difficult to manage items.

On occasion a resident will inquire about the District hosting a large-scale HHW collection event. Typically, these residents are looking for a "free" location to dispose of a particular type of material they have accumulated (e.g., tires, paint, etc.).

### Scrap Tires

Scrap tires not properly disposed have the potential to end up in illegal dumps or on the side of the road, creating hazards to public health and the environment. The District's strategy for managing scrap tires is for residents to have affordable and legal options for tire disposal. In the previous planning period, the District held two tire collection events that were very popular with residents. Several tire dealers and other businesses accept scrap tires for recycling. The Wood County Landfill and Evergreen Recycling & Disposal Facility also accept scrap tires. Wood County Landfill charges a modest fee of \$4 for passenger tires, \$8 for truck tires and \$25 for tractor tires.

The Wood County Engineer's Office and Wood County townships perform an annual cleanup of local roadways. As part of this program, tires are collected from the road right-of-way or other public areas. The tires are taken to the Wood County Landfill and the cost of disposal is paid for by the District.



Additional special tire collection events could be considered for the upcoming planning period. The District will continue educating the public on proper tire disposal through brochures and the District website.

#### Lead-acid batteries

The ability to recycle lead acid batteries has existed for many years due to the value of the lead in the batteries. Almost all stores selling new batteries accept old batteries in exchange. Many scrap dealers also accept and pay for scrap batteries.

Wood County Landfill and Evergreen Recycling & Disposal Facility in compliance with Ohio law, do not accept lead acid batteries for disposal. The District publishes a list of businesses who will accept lead acid batteries for recycling on its website. All haulers have been notified that lead acid batteries are not accepted for disposal at landfills. The District collects lead-acid batteries at the Wood County Landfill for recycling. Collection containers are also located at private businesses in highly visible areas to the public.

#### Electronics

The City of Perrysburg partners with AIM Ecycling for recycling of electronics collected from the city's curbside program. This is a free service offered to all residents of Perrysburg. Perrysburg Township has partnered with Recycle I.T. USA and maintains a free drop-off site for electronics. Both services accept almost anything with a cord, including computers, printers, stereo equipment, microwaves, and small appliances. Televisions are not accepted at the site and must be taken to the Lucas County location for a fee. Several other private companies provide electronic recycling services, which are listed on the District's website.

Bowling Green State University and Way Library in Perrysburg, Ohio also recently sponsored electronics collection events.

The District does not currently sponsor any collection events for electronics. However, given the increase of electronics in daily life, it may be an event or program the District should consider for the future. The District will continue to promote electronic collection events through the planning period.

#### Appliances

The Wood County Landfill accepts both non-refrigeration units and refrigeration units for disposal and recycling. Non-refrigeration units, including hot water tanks, stoves, washers, and dryers. Refrigeration units, including freezers, refrigerators, and air conditioning units, are also accepted for an additional charge. The landfill contracts with a licensed contractor to properly evacuate the Freon.

The City of Perrysburg curbside recycling includes unlimited bulk pickup and free pickup of difficult to manage wastes such as appliances, carpet, and tires. The City of Bowling Green curbside recycling includes a limited number of pickups for select appliances,

carpet and other bulky items. The BGRC also accepts appliances. Most appliance stores and scrap metal facilities will also accept appliances for disposal and recycling.

#### Pharmaceuticals

The District has eight permanent prescription drug drop-off locations managed by local law enforcement agencies. The locations are listed on the District's website. Additionally, many private pharmacies (e.g., CVS) accept pharmaceuticals.

#### Bulky items

The Wood County Landfill accepts bulky items for a fee. The District does not offer any specific bulky item collections; however, several municipalities offer programs. For example, the City of Bowling Green offers two free large item collections per year and residents may dispose of up to five items. Private haulers also perform large item pick-ups. Haulers/services related to bulky items are posted on the District's website.

#### Car seat recycling

The District may want to consider partnering with a private service to provide an option for the recycling of child safety car seats. Most car seats are thrown away because they are hard to recycle, and car seats typically have a manufacturer expiration date of 6-8 years. Target has offered car seat collection programs that last for 1-2 weeks in the past. The District will also promote privately sponsored recycling programs/events during the planning period.

### ***B. Restricted and Difficult to Manage Waste Streams Analysis Findings***

Through a combination of special collection events and private sector programs, the District has identified disposal options for the most difficult to manage materials.

The District website lists the materials and the corresponding business or service that will collect or dispose of them. Many of the sites charge a disposal fee, which could be a barrier for some residents. The District website could include more education on why it is important to dispose of these products properly and where residents can buy alternative products.

The District may want to consider hosting another tire collection event as the last two events were very popular. Additionally, the District could evaluate whether an electronics recycling collection event would be valuable for the District. Residential use of electronics continues to increase, and some retailers suspended their free or low-cost electronics take-backs due to Covid-19 precautions.

The high cost of hosting a HHW collection event is a challenge for the District. A longer-term strategy may be to consider a regional partnership to share the cost of a HHW event (e.g., partnering with larger Lucas County or having several smaller districts combine resources). The District could seek to form a stakeholder group for the region and develop

strategies to share resources, and overcome challenges of transportation, low volume, and processing expense.

## **7. Diversion Analysis**

Goal 2 of the 2020 State Plan challenges SWMDs to reduce and recycle 25 percent of the solid waste generated by the residential/commercial sector. Waste from the residential/commercial sector is essentially municipal solid waste. The State of Ohio measures diversion from landfills, not just recycling. Thus, composted yard waste contributes to achieving Goal 2 as does volume reduction achieved through incinerating solid waste. This section evaluates the quantities of waste reduced/recycled in the reference year and the four years prior.

### **A. Diversion Analysis Overview**

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 reviews the diversion programs, infrastructure, rate and trends, and materials.

### **B. Residential/Commercial Waste Diversion**

In the reference year, the District's residential/commercial sector achieved a 23% waste reduction and recycling rate (WR-R), which is just below the 25% requirement to achieve Goal 2 of the State Plan. This rate is also below the 2017 Plan projection of 32%. It appears the 2017 Plan underestimated the projected tons of waste disposed (landfilled) by nearly 30% and slightly overestimated the projected volume of materials recycled and composted. Population increase alone does not explain this difference, as the projected population was about 3-4% less than the actual population.

Although the District did not meet the 25% WR-R goal in 2020, the District did report significant diversion activities. The largest contributor to the District's diversion rate was composting facilities. In 2020, 20,130 tons were diverted in the 12 composting facilities located in the county (Table B-5). Other significant diversion programs were tire recycling, big box store recycling and the Bowling Green Recycling Center.

The recent increase of waste disposed in landfills has made the WR-R goal more difficult to attain. However, even with higher waste disposal, the District projects that WR-R rates will increase due to growing composting programs and continued recycling efforts. The District projects meeting the 25% recycling and reduction rate goal throughout the planning period.

Appendix K demonstrates the District's progress in meeting the residential/commercial reduction and recycling rate established in Goal 2 of the 2020 State Plan. Appendix E discusses the residential/commercial waste reduction and recycling data in greater detail.



Table H-6 compares the projected residential/commercial sector reduction and recycling rates and actual reduction/recycling rates from 2017-2020. Table H-7 compares the projected and actual tonnage for recycling, composting and landfill disposal from 2017-2020.

**Table H-6 Comparison of Residential/Commercial Sector Reduction and Recycling Rates**

Year	2017 Plan Projected Reduction and Recycling Rate	Actual Reduction and Recycling Rate
2017	32%	20%
2018	32%	24%
2019	32%	23%
2020	31%	23%

**Table H-7 Comparison of Residential/Commercial Sector Factors Used to Calculate Reduction and Recycling Rates**

Year	2017 Plan Projected Recycled <sup>1</sup>	Actual Recycled <sup>2</sup>	2017 Plan Projected Composted <sup>1</sup>	Actual Composted <sup>3</sup>	2017 Plan Projected Disposed (Landfill) <sup>1</sup>	Actual Disposed <sup>4</sup> (Landfill)
2017	18,352	17,190	20,741	12,254	84,269	119,382
2018	18,352	20,113	20,741	18,630	84,571	119,866
2019	18,352	17,018	20,741	18,349	84,874	120,241
2020	18,352	19,102	20,741	20,475	85,177	133,076

Notes:

1. From 2017 Approved Plan, Table VII-3
2. From Table E-7, includes total tons recycled with "Composting Facilities" subtracted.
3. From Table E-7, includes "Composting Facilities".
4. From Table D-5, total includes waste disposed in landfill (direct haul) and waste transferred

### **C. Industrial Waste Diversion**

The Ohio EPA eliminated the industrial sector goal of reducing/recycling 66 percent of industrial solid waste in the 2020 State Plan. Historically, the District has had a very high industrial recycling rate (94% for reference year 2020). In compliance with new Goal 5, the District will incorporate a strategic initiative for the industrial sector into its solid waste management plan and make at least three programs, activities available to the industrial sector.

In the reference year, industrial waste reduced/recycled was 110,407 tons, all of which was reported through industrial surveys. The 2017 Plan projected this amount would be 95,510 tons, so actual industrial tonnage recycled was approximately 14% higher than predicted.

Table H-8 below shows the projected vs. actual reported tonnage for the industrial sector. The District has historically reported very high industrial recycling rates. Most of the industrial waste reported is currently being reduced/recycled at rates of 89-96%, an increase of the projected 88-89% from the 2017 Plan. This is attributable to both a lower actual disposal amount (landfill) and a higher reduced/recycling amount from 2017-2020.

**Table H-8 Industrial Waste – Comparison of Current Plan Projections and Actual**

Year	Reduced/ Recycled	Disposed (Landfill)	Total Generated	Population	% Industrial Waste Reduction	Industrial waste reduction per capita (ppd)
<b>2017 Plan Projections</b>						
2017	96,510	12,422	108,932	125,748	88.60%	4.2
2018	96,510	12,095	108,605	126,012	88.86%	4.2
2019	96,510	11,769	108,279	126,276	89.13%	4.2
2020	96,510	11,445	107,955	126,540	89.40%	4.2
<b>Actual Reported Tonnage</b>						
2017	123,282	5,608	128,890	130,437	96%	5.2
2018	109,533	13,873	123,406	130,441	89%	4.6
2019	127,694	9,389	137,083	130,817	93%	5.3
2020	110,407	7,122	117,529	131,156	94%	4.6
<b>% Difference Between Projection and Actual</b>						
2017	28%	-55%	18%	4%	8%	23%
2018	13%	15%	14%	4%	0%	10%
2019	32%	-20%	27%	4%	5%	27%
2020	14%	-38%	9%	4%	5%	10%

**D. Diversion Analysis Findings**

Overall, the District's current programs appear to be offering sufficient options to reduce/recycle. The 2017 Plan was perhaps overly optimistic when projecting a 31-32% WR-R, and despite the District's best efforts the actual rate was 20-24%. Data reporting plays a large factor in calculating this rate and the District will continue to strive to ensure thorough and accurate reporting of residential/commercial and industrial recycling and disposal.

Compared to the 2017 Plan, actual disposal tonnage was much higher in the residential/commercial sector, a theme which has been seen throughout the state and country. The waste stream in the District does not appear to be significantly different compared to those reported by U.S. EPA for the country. No specific commercial businesses could be identified that might account for the difference between the 2017 Plan projections and actual disposal tonnage.

**8. Special Program Needs Analysis**

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

## **A. Special Program Needs Analysis Overview**

### County Engineer's Office/Township Road Cleanup Program

During the spring of each year, the District hosts a cleanup event where township trustees and the County Engineer's Office collect roadside solid waste and tires for disposal at the Wood County Landfill free of charge. Over the years, the cleanup time would extend over several months. The District now provides the program for 4-6 weeks in the spring. The shortened timeframe has not reduced participation. The program is a benefit to the community.

### Open Dumping and Litter Enforcement

In the past, the District provided funding to the Wood County Sheriff's Office for two full-time deputies to provide litter law enforcement and oversee a crew of non-violent inmates to pick up litter from public areas. This program was discontinued several years ago due to budgetary concerns. Recently, the Wood County Sheriff approached the District about a similar program that would involve a collaboration between the Sheriff's Office, Ohio Department of Transportation, the Wood County Engineer's Office, and the District. Each party would help financially support the program and the Sheriff's Office would use a crew of inmates to assist. Program discussions were put on hold during the Covid-19 pandemic but could be revived as programs and activities continue to be reinstated.

### Great American Cleanup Program

Since 1985, the City of Perrysburg has participated in the Great America Cleanup program. Over 200 volunteers clean up litter from the city's parks and landscape areas. The city pays for all costs associated with the program.

### Disaster and Debris Management

The District works with the Wood County Emergency Management Agency (EMA) regarding Disaster Debris Management. In the past, the District has provided assistance by allowing local governments affected by a disaster to bring brush, tree limbs, and solid waste to the Wood County Landfill. Financial support is dependent upon availability of funds.

### Miscellaneous

The District may also provide financial support to the Wood County Landfill for waste reduction and recycling services necessary for plan implementation. Due to financial constraints, the Infrastructure/Clean-Up Grant program was suspended, but could be re-evaluated if sufficient funds were available. The District formally paid for some groundwater monitoring at the Wood County Landfill but has since discontinued that funding due to the Wood County Landfill having adequate funds to cover the expense. The District provides annual funding for the Wood County Landfill's closure/post-closure



care fund. The District and the Landfill share this expense and the amount of funding is adjusted based on year-end finances.

### **B. Special Program Needs Analysis Findings**

The District could evaluate whether the Wood County Sheriff's proposed litter collection program is feasible. Due to the possibility of multiple entities financially participating, it may be an affordable option for the District.

The County Engineer's Office/Township spring roadway cleanup program is well-received and provides the community a valuable service at a minimal cost.

The District will continue to provide annual funding for the Wood County Landfill's closure/post-closure care fund. The amount of funding will be based on year-end finances. Currently, the Wood County landfill can pay all groundwater monitoring costs.

The District does not foresee taking on any other new special programs. The District prefers to place an emphasis on expanding participation in residential recycling through drop-off and curbside recycling collection programs.

## **9. Financial Analysis**

This section will evaluate the District's current financial position and assess the financial requirements and revenue sources for the upcoming planning period. The District is primarily funded through revenues from disposal fees and designation contract fees.

### **A. Financial Analysis Overview**

Overall, the financial picture for the District since the 2017 Plan has remained stable. The District has experienced a decrease in revenue over recent years, due in part to a decrease in out-of-district tonnage at Evergreen Recycling & Disposal Facility. In response, the District adjusted expenditures in several areas. The Covid-19 pandemic caused some financial uncertainty in early 2020. However, trash removal services continued throughout the pandemic and District revenue was not impacted. The Wood County Landfill public drop-off area was closed for a short period of time, but most residents used a private hauler or deferred their disposal until the drop-off reopened.

During the planning period, the District will renew the designation facility agreements for five years as well as include a five-year renewal option. If funding permits, the District may consider reinstatement of some of the grant programs that have been suspended.

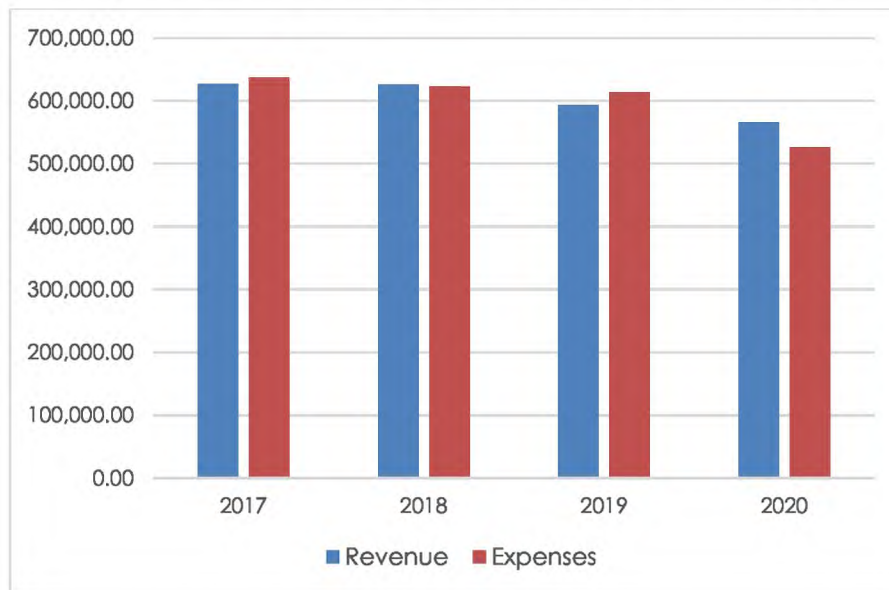
**Figure H-6 Annual Revenue and Expenditures (\$)**

Figure H-6 compares total annual revenue and total annual expenses for the District from 2017 – 2020. Expenditures were slightly lower in 2020 due to less programming and events during the Covid-19 pandemic, a re-assignment of staff to other programs during the shut-down period and less expenditures for the Wood County Landfill.

### Revenue

#### i. Disposal Fees (ORC Section 3734.57(B))

The largest source of revenue for the District is disposal fees. Disposal fees are collected on each ton of solid waste disposed at landfills in the District. The District's disposal fees are currently \$2.00 per ton in-district, \$4.00 per ton out-of-district and \$2.00 per ton out-of-state. In 2020, the District collected \$471,529 in disposal fees. The present structure has worked well and has provided sufficient revenue to implement the currently approved plan.

Disposal fees are collected at the Wood County Landfill and Evergreen Recycling & Disposal Facility. The 2020 Ohio Facility Data Report Tables indicates that the Wood County Landfill has three years of capacity remaining and Evergreen Recycling & Disposal Facility has 36 years of capacity remaining based on waste accepted as of December 31, 2020. The Wood County Landfill is currently planning a large expansion project that will increase available capacity for over 100 years based on current disposal volume.

Presently, tonnage at both in-district landfills remain high, which increases revenue to the District. However, Evergreen Landfill tonnage has dramatically fluctuated over the years. As a result, the District takes a conservative approach to setting the budget and estimating revenues.

Actual disposal fees from 2016 - 2020 were lower than plan projections and decreased over the years. Due to this trend, in 2023, the District projects a 3% increase in in-district disposal fees, 7% decrease in out-of-district disposal fees and a 9% decrease in out-of-state disposal fees. The District will apply the increase/decrease for each fee category for the first six years of the planning period with the remaining years held constant, as shown in Table 6-1 in Chapter 6.

ii. Generation Fees (ORC Section 3734.573)

The District does not currently have a generation fee; however, the District reserves the right to do so during the planning period if needed.

iii. Designation Agreements

The District implemented a designation contract fee of \$2.00 per ton for municipal solid waste on October 1, 2011. In 2020, the District collected \$71,100 in designation contract fees. The designation agreements were renewed in 2016 and 2021. These agreements ensure that all municipal solid waste generated in Wood County, whether disposed within or outside the County, support state-mandated programs and the solid waste management plan. The fees allow for a more equal playing field among generators, haulers, and facilities, and assist the District in maintaining sufficient revenue for its programs. The District currently has designation agreements with 13 facilities.

The 2017 Plan projected designation fees being held constant at \$75,000 for the planning period. The District received varying amounts, from \$71,068 to \$79,005, with an annual average increase of 2% over 2016-2020. Thus, the District projects a 2% annual increase in designation fees for the first six years of the planning period with the remaining years held constant.

### Expenditures

Cost estimates for the District to implement the programs and/or activities described throughout the plan are provided in Chapter 6. Expenditures for the District have remained fairly consistent over the last several years. The largest expenses for the District are (1) per capita incentive payments to local governments, (2) Republic Services contract for the District's 24/7 residential drop-off program, and (3) administration/personnel costs.

In the 2017 Plan, the District projected a 2020 budget of \$753,531. Actual budget expenditures for 2020 were \$526,737. This higher budget corresponds with the 2017 Plan's higher projection for disposal fee revenue.

The District made several program adjustments due to the decreasing revenue trend. The Infrastructure Cleanup Grants Program and the Capital Grants Program were both suspended. The District shifted groundwater monitoring costs and some of the closure/post-closure care costs to the Wood County Landfill, which currently has sufficient



funds for these items. Additionally, the Wood County Landfill is reimbursing 25% of the salary of office personnel for accounts payable services provided to the landfill.

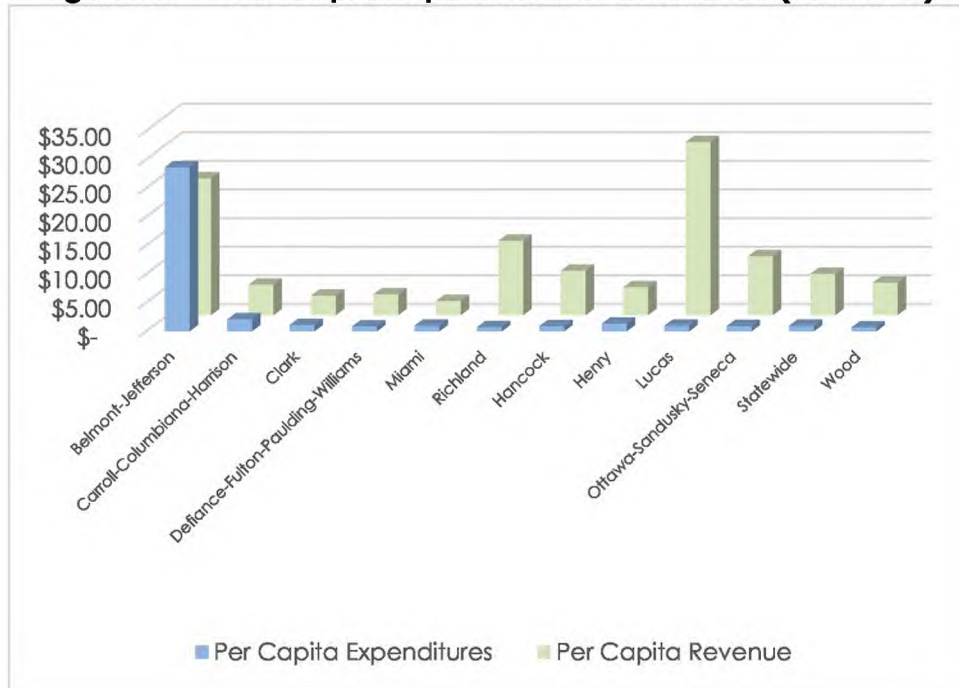
An upcoming financial concern is the cost of the District's 24/7 residential drop-off program. Wood County has a five-year contract with Republic Services for the collection, transportation, and processing of drop-off recyclables. The District will be seeking competitive proposals for this program in the planning period. Presently, only two commercial haulers are available in the area to service this type of account, but the District has been contacted by Rumpke about expanding services north. The District may want to consider some type of revenue sharing arrangement under the next contract. The new drop-off program was not contemplated in the 2017 Plan and the cost has exceeded the former mobile satellite collection program. However, the new drop-off program has collected significantly more recyclables.

The District intends to maintain the per capita incentive program, subject to availability of funds. The per capita payments to local governments for curbside programs was increased from \$1.00 per person to \$1.50 per person in 2019.

#### Fund Balance

The District strives to maintain at least one year's budget in reserve to cover any unexpected expenditures or sudden loss of revenue. In 2020, the District had an unexpended cash balance of \$746,335. The projection in the 2017 Plan for the 2020 carryover balance was \$942,989. If the fund balance accumulates an excess over the planning period, other permissive programs could be evaluated.

Figure H-7 shows a comparison of the per capita expenditures and revenue in Districts with similar population or geography compared to Wood County. Data originates from the Ohio EPA Solid Waste Management District Fee Summary: 2020. Table D. Revenues and Expenditures Report.

**Figure H-7 Per Capita Expenditures and Revenue (2020 ADR)**

The statewide average per capita expenditure in 2020 was \$7.24/person while the statewide average per capita revenue in 2020 was \$1.00/person. Wood County's rates, \$5.70/person and \$0.71/person, respectively, were slightly lower than the average. Other than Belmont-Jefferson County, expenditures in counties of similar population and geography were near the statewide average of \$1.00/person. Per capita revenue was much more variable and could be attributable to a variety of factors including disposal fees, grants, and other income.

**Figure H-8 Comparison of Per Capita Fund Balance**

Figure H-8 shows the per capita fund balance in counties of similar population and/or geography along with the statewide average. Wood County's per capita balance (\$5.70/person) is below the state average (\$8.99/person).

Table H-9 shows a comparison of the fee structures for SWMDs of similar geography and/or population. Note that no other sources of revenue were listed for Wood County in Ohio EPA's 2021 fee structure summary; other revenue includes surplus auction and salary reimbursement, as discussed in Appendix O.<sup>24</sup> Wood County's tiered disposal fee structure and contract fee is similar to, if not higher, than comparable counties. The predominant difference in revenue per capita appears to be originating from other counties additional sources of revenue (e.g., interest, recycling revenue, grants, donations).

**Table H-9 Comparison of Various SWMD Fee Structures**

County	Tiered Disposal Fee (in-district/out-of-district/out-of-state) (\$ per ton)	Generation Fee (\$ per ton)	Contract Fee [ORC 343] (\$ per ton)	Other Sources of Revenue	Per Capita Revenue
Belmont-Jefferson	1.00/2.00/1.00		0.50 for out-of-state waste disposed at Apex Sanitary Landfill	I,RC,RR	\$ 23.91
Carroll-Columbiana-Harrison	1.00/2.00/1.00 (No LF)		3.50 for designated facilities	G,RR	\$ 5.34
Clark	2.00/2.00/2.00 (No LF)	8.50		D,G,I,RR,UF	\$ 3.44
Defiance-Fulton-Paulding-Williams	1.00/2.00/1.00		1.00 for out-of-state waste 2.00 for in-district waste	I	\$ 3.66
Miami				TF,RR	\$ 2.48
Richland		7.50	1.00 for out-of-district waste received at Noble Road landfill 2.00 for out-of-state waste received at Noble Road landfill	RR,TF,UF	\$ 13.00
Hancock	1.50/3.00/1.50	1.50		RR	\$ 7.77
Henry			6.00 for designated facilities	D,G,RR	\$ 4.89
Lucas		2.20	3.00 for designated facilities	G,R,RC,RR,UF	\$ 30.27
Ottawa-Sandusky-Seneca	1.50/3.00/1.50		1.50 for designated out-of-district disposal facilities 0.50 for out-of-state waste disposed at the Sunny Farms Landfills	D,I,R,RR	\$ 10.30
Wood	2.00/4.00/2.00		2.00 for designated facilities		\$ 5.70

Key: C – Contracts I – Interest RR – Recycling Revenue CC – County Contributions No LF – No Landfill RC – Rates and Charges D – Donation P – Projects TF – MRF or Transfer Facility Tipping Fees FP – Fee Penalty PA – Planning Assessment UF – User Fee G – Grants R – Reimbursement

<sup>24</sup> [https://epa.ohio.gov/static/Portals/34/document/general/swmd\\_fee\\_structure.pdf](https://epa.ohio.gov/static/Portals/34/document/general/swmd_fee_structure.pdf)



## **B. Financial Analysis Findings**

Overall, the District's financial condition is stable and sufficient to implement the requirements of this plan. The District's primary objective is to ensure funding of required State Plan programs and to support permissive programs as funds permit.

The disposal fee structure is anticipated to generate sufficient revenue. The designation fee agreements will be renewed during the planning period.

The District has experienced a decrease in revenue over recent years, largely due to a decrease in tonnage at Evergreen Recycling & Disposal Facility. The District has adjusted its estimated revenues and proposed budget in response to the decrease.

The District will be seeking competitive proposals for the 24/7 residential drop-off recycling program collection, transportation, and processing contract. The District may want to explore a revenue sharing arrangement under the new contract.

The lower budget in this plan is a projection and not a cap on spending. The District expects expenditures and program funding to vary annually based on revenue, and program priorities.

## **10. Regional Analysis**

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

### **A. Regional Analysis Overview**

The Wood County Solid Waste Management District is bordered by Lucas County to the north, the multi-county Ottawa-Sandusky-Seneca Solid Waste Management District to the east, Hancock County to the south and Henry County and Putnam County to the west. Lucas County SWMD is the only metropolitan area bordering the District.

The District has participated in several collaborative events during the last planning period. Statewide District educator's workshops were held monthly in 2020 to share education and outreach ideas, including how to promote recycling programs and provide presentations virtually. Sharing information about virtual presentation programs was particularly helpful given the cancellation of in-person events during the Covid-19 pandemic. District staff actively participated and led many of these meetings. The District also participated in Ottawa-Sandusky-Seneca (OSS) District's Educator Workshop and the OSS Sharing Day at which local SWMD Coordinators exchanged new education ideas.

The District realizes that decisions made by one district may impact other districts. Thus, the District regularly communicates with surrounding solid waste management districts,

including Hancock County, Lucas County, and OSS regarding regional issues, policy decisions and programs/events for residents. The District has less communication with Henry and Putnam County.

The District stays informed of neighboring SWMD's activities so it can help direct individuals to regional recycling opportunities outside of Wood County, e.g., special recycling events at the Toledo Zoo, commercial/industrial facilities available in Lucas County, and Styrofoam recycling in Hancock County.

Wood County and neighboring districts have some common challenges. For example, Wood County, Lucas County and OSS all use the same recycling provider and have struggled with overall contamination rates and keeping plastic bags, Styrofoam, and tangles from entering the mixed recycling stream. Educating consumers with a consistent message would be valuable. Hosting large special household hazardous waste (HHW) collection events are also a challenge for most of the smaller bordering districts. There may be opportunities to collaborate and/or partner in these areas.

A regional contamination audit at the Republic Services transfer station in Toledo was planned for early 2020 but was cancelled due to the Covid-19 pandemic. The Recycling Coordinator for Republic was going to flag haulers from the different jurisdictions and collect samples. A visual audit of 100-200 pounds would be hand-sampled. The waste audit would help each community target specific contaminants in education and outreach programs. The District will pursue re-scheduling this event once the facility is re-opened to the public.

The District has recently experienced extensive staff turnover, which has made partnership development and collaboration challenging. After new staff are in place and trained, efforts will be made to network and continue developing existing relationships with neighboring districts and stakeholders.

## **B. Regional Analysis Findings**

The District is committed to regional collaboration and increasing communications with District stakeholders. Due to Covid-19 and staffing changes, this is an area that was not fully developed during the last planning period. The District believes there are opportunities for regional and in/district collaboration, including:

- The District could consider convening a quarterly meeting of the coordinators and educators from adjacent solid waste management districts to discuss regional opportunities, impacts, and resources.
- The District could consider hosting a quarterly meeting for the local governments offering curbside programs to discuss challenges/successes and compare data.
- The District plans to continue collaborating and sharing educational materials and programs with other SWMDs. The District could also explore the possibility of sharing additional staff for specific purposes, such as outreach/education or data collection.

- The District could evaluate a regional partnership to share the cost of a HHW collection event.

## **11. Data Collection Analysis**

This section will evaluate the District's current data collection efforts and identify ways the District can improve its data.

### **A. Data Collection Overview**

Ohio classifies waste into three sectors: residential, commercial, and industrial. The District's data collection process is described below.

#### Residential

Annually in January, the District sends an initial memo by US mail to all local governments asking them to watch for a survey from the District that they will receive in the next 30 days. The memo explains that the information is for the District's OEPPA Annual District Report (ADR).

In mid-February, the District sends a cover letter and the survey by US mail to all local governments. The cover letter requests the information back by March 31 and indicates that late or incomplete responses could affect the local government's per capita residential recycling payment. The survey is one page long and requests the following information: disposal landfill used, service provider, tons of waste collected, curbside recycling provider, pounds of materials recycled, tons of yard waste diverted (leaves, grass, brush) and where the material is taken, and number of tires collected. The local governments obtain their data from their service provider.

If the community participates in the District's drop-off program, it does not report any pounds of recyclables as Republic Services provides that information directly to the District.

The local governments timely submit their survey responses, and the District seldom has to perform any follow-up.

The District uses Ohio EPA's annually published data when calculating residential recycling performance in conjunction with the residential data collection activities described above: Material Recovery Facility, Compost Facility Data Report, Facility Data Reports (Waste Disposal Data), Solid Waste Imports and Exports, and Scrap Tire Data Report. The District has not experienced any issues with this OEPA data. This data is obtained from Ohio EPA's website.

The District checks for double counting by comparing OEPA data and District-collected data from communities. Generally, the residential sector recycling data collected is complete and accurate. All major sources of recycling tonnage are captured by the



District's current data collection activities. If there are gaps in data, the District estimates they are negligible amounts.

### Commercial

The District uses two sources for gathering data from commercial sources: generator surveys and Ohio EPA.

Annually in February, the District sends a cover letter by email with an attached survey to targeted commercial sector generators to obtain recycling data. The list of recipients for the survey is developed based on the prior year's commercial sources list. A reminder email is sent in March. There was a total of 53 commercial sector responses from 2017-2020 obtained through paper or scanned in survey methods.

To collect reference year data, the District used a template created by OEPA. Examples of the most up-to-date survey materials are available in Appendix R.

Again, the District uses OEPA's annually published data when calculating residential recycling performance in conjunction with the residential data collection activities described above: Material Recovery Facility and Commercial Recycling Data, Facility Data Reports (Waste Disposal Data), Solid Waste Imports and Exports, and Scrap Tire Data Report. This data is obtained from Ohio EPA's website.

A more comprehensive list of commercial contacts is needed, which would provide improvement in commercial data collection. Overall, the survey has a high response rate given the low number of businesses surveyed. Based on a review of other district plans, sources such as Reference USA, chamber of commerce organizations, and news articles related to new businesses could be used each year to supplement the existing commercial business list.

**Table H-10 Commercial Sector Survey Response Rates**

Year	Total Surveys Mailed	Total Responses Received	Average Response Rate
2017	26	16	62%
2018	20	8	40%
2019	28	15	54%
2020	28	14	50%

The potential for double-counting materials is addressed by comparing responses from generators with processors, haulers, and material recovery facilities. Double counting is also prevented by eliminating materials sent to Hirzel Farms and BGRC, which submit their reports to both Ohio EPA and the District.

The Recycling Outreach Coordinator is responsible for collecting survey results and compiling the ADR. Since 2017, this position has been held by three different people, with the position vacant for part of 2021/2022. As a result, maintaining a continuity of data evaluation and identifying areas for improvement has been challenging.

## Industrial

The District uses two sources for gathering data from industrial sources: generator surveys and Ohio EPA.

Under the 2020 State Solid Waste Management Plan, there is no requirement for districts to report industrial data on the ADR. The District has elected to continue requesting information from the industrial sector. The District emails a survey to targeted industrial sector generators requesting their recycling data for the year. The industrial sector survey is conducted using the same methodology as the commercial sector survey described above. Similar to the commercial data, the industrial data is very incomplete. From 2017 to 2020, the average response rate was 33%. Response rates varied each year.

**Table H-11 Industrial Sector Survey Response Rates**

Year	Total Surveys Mailed	Total Responses Received	Average Response Rate
2017	84	48	57%
2018	68	51	75%
2019	88	42	48%
2020	87	29	33%

### **B. Data Collection Findings**

The District is confident that the residential sector recycling data is substantially complete and accurate. The District has much more difficulty obtaining data from the commercial and industrial sectors.

The OEPA data is helpful but does not provide a full picture of the commercial sector. Additionally, the District knows of several new manufacturing facilities and warehouses that likely have large volumes of recyclable material. The District has repeatedly reached out to these facilities, using specific contact information, and has received no responses.

A comprehensive directory of commercial and industrial facilities would be helpful. Because reporting is voluntary, there is no recourse for the District if a facility does not respond. Given the District's limited staff, it could be beneficial to obtain assistance from BGSU or other organization to help develop a comprehensive directory of commercial and industrial businesses located in Wood County.

## **12. Education/Outreach Analysis**

This section evaluates the District's existing education, outreach, and technical assistance efforts, which are described in detail in Appendix L.

Goals 3 and 4 of the 2020 State Solid Waste Management Plan set forth specific requirements for SWMD education and outreach programs. Goal 3 requires that the SWMD provide at a minimum the following:

- A website,

- A comprehensive resource guide that includes a compilation of reduction and recycling opportunities for specific materials,
- An inventory of current available solid waste recycling opportunities and management infrastructure within the District, and
- A person who can function as a speaker or presenter when needed.

Goal 4 requires that the SWMD plan include an outreach and marketing plan that establishes the solid waste management district's strategy for providing 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 4 also requires that the District target the following five audiences: (1) residents, including single and multi-family units, (2) schools, (3) institutions and commercial businesses, (4) industries, and (5) communities and elected officials.

#### **A. Education/Outreach Analysis Overview**

The District's education and outreach efforts are diverse and are tailored for the audience. Since the District only employs one full-time employee for education and outreach services, the District must prioritize its efforts and have resources available for use by others.

The District maintains a website that includes a comprehensive listing of recycling opportunities for specific materials and an inventory of solid waste recycling opportunities/infrastructure. The website is frequently updated to include events and activities. It provides links to other jurisdictions that provide programs and services for recycling. See [www.recyclewoodcounty.org](http://www.recyclewoodcounty.org). The website also lists contact information for the Recycling Outreach Coordinator.

Given the level of recycling infrastructure throughout Wood County (curbside, county-wide drop-off program, and the BGRC), the District is generally providing awareness education to a target audience that has access to recycling. Thus, programs can be more specific to the type of recycling available in the community.

The District has not implemented a tool to measure results or effectiveness of its education and outreach program. However, even without additional feedback or data, staff promotion of the drop-off recycling program was successful simply by the volume of materials collected. In 2020, the new drop-off program recycled over 800% more materials than the amount collected in 2017 under the mobile satellite program.

Education/outreach for the 24/7 drop-off program has now shifted from marketing the availability of the program, to focusing on contamination and changing user behavior when recycling.

The District's existing educational and outreach activities are summarized below:



### Residents

- The District promotes residential recycling information on the SWMD website and during outreach events.
- The District has prepared and distributed flyers and brochures on a variety of topics to educate the public about recycling, waste management, waste reduction, yard waste and composting, and HHW management.
- The District regularly fields phone calls from residents regarding instructions for proper disposal of specific materials.
- Recycling events are promoted on the District website, e.g., Personal Shredding Event.
- Since residential recycling programs vary, District staff often re-direct residents to the municipality or township in which they live for specific recycling or program questions.
- Referrals are often made to the City of Bowling Green and the City of Perrysburg as they both have sustainability coordinators who manage the city's curbside program and other localized programs.
- The District sends direct mailers to residents in a jurisdiction dealing with contamination and/or illegal dumping issues.
- The District monitors local Facebook and other social media pages to keep informed on local issues. On occasion, the Recycling Outreach Coordinator will provide a "message" to send to residents regarding a drop-off site or specific program through a local official to post on the community's social media site.
- The Recycling Outreach Coordinator provides periodic updates on a local radio show to promote the new 24/7 drop-off program.
- The District provides a quarterly electronic newsletter called "WOOD you recycle?" with information about services, programs, and recent activities.

### Schools

- In reference year 2020, the Recycling Outreach Coordinator created/updated educational presentations for grades k-12. They are now curriculum-based presentations for each grade that meet appropriate educational standards.
- The Educational Presentation Guide is shared with teachers, principals, and superintendents before each semester to promote presentations and provide opportunities for teachers to schedule a program.
- The District offers Loan Boxes for the following programs: Edible Landfills, Litter Playground, Fred the Fish and Newspaper Pots.
- The District has a lending library, which includes books and DVDs relating to various waste reduction and recycling topics.
- Windows on Waste (WOW) curriculum is available for loan. WOW is an elementary, interdisciplinary, environmental studies activity guidebook published by the Ohio Department of Natural Resources, Division of Recycling & Litter Prevention to help educators teach students about solid waste and environmental issues.
- Recycling tours were discontinued in reference year 2020 due to BGRC shutting down processing center. Tours were temporarily suspended at landfill due to Covid-19 pandemic and social distancing concerns.
- The Recycling Outreach Coordinator worked with BGSU during Earth Month. In 2020, they collaborated to provide a virtual tour of the BGRC that explained the recycling process.

- A variety of virtual presentations were created and uploaded to YouTube:
  - Lid-lock Tutorial (28 views)
  - Recycle Right (94 views)
  - Recycling Do's (160 views)
  - Recycling Don'ts (143 views)
  - Village of Luckey Recycling (119 views)
  - Happy Recyclable Presentation (13 views)
  - Litter Playground Presentation (16 view)
  - Holiday Recycling (269 views)

#### Institutions and Commercial Businesses

- After WLI discontinued recycling operations in 2020, the District collaborated with Wood County government maintenance to continue providing recycling services and created flyers for county employees on accepted materials.
- The District also assisted in the installation of drop-off bins for Wood County agencies in the East Gypsy Lane complex in 2021 and prepared an informational handout on accepted materials.
- The District coordinates with government offices to provide contact information, accepted recyclables signage and helps with recycling bin placement and logistical issues.
- For commercial businesses, the District provides information on available recycling haulers and directs small businesses to take materials to BGRC.
- The Recycling and Outreach Coordinator provides presentations to civic groups and church groups on the benefits of recycling, implementing recycling programs, and garden and composting programs.
- The District also provides free Clear Streams for large events and provides free recycling through the Clear Streams program at the Wood County Fair, Black Swamp Arts Festival, BG Rally, etc.
- The District provides an informational booth at the Wood County Fair. The fair was canceled in reference year 2020 due to the Covid-19 pandemic but was brought back in 2021. The fair booth was both informational and interactive.

#### Industries

- The District will provide informational and technical assistance on recycling, reuse, and waste reduction to the industrial sector, upon request.
- Waste audits/assessments will be performed, upon request.
- The District will promote the Ohio Materials Marketplace regarding hard to recycle materials.
- District staff will attend monthly economic development business roundtable luncheons. This will be an opportunity to market SWMD programs with industry officials.
- Staff will provide assistance with identifying grants for developing or improving recycling and District will serve as the applicant organization for OEPA Market Development Grants.

### Communities and Elected Officials

- The District works one-on-one with communities with drop-off sites for site specific issues and maintains relationships with community leaders for special updates and news regarding recycling programs.
- The Recycling Outreach Coordinator attends the annual countywide Township Trustee meeting and provides a booth with educational materials. She also provides an update to the trustees and other elected officials on the status of recycling in Wood County.
- District staff will attend monthly economic development roundtable luncheons attended by both industry officials and local elected and appointed officials. This will be an opportunity to market SWMD programs, hear the concerns of community leaders, and build relationships.

### Comparison of Programs Offered in Last Planning Period

Some programs listed in the currently approved 2017 Plan were discontinued due to a variety of reasons, such as outdated programming, and facility changes (e.g., BGRC tours were discontinued as no longer a processing center) and decreased funding. Additionally, some education presentations were shifted to a virtual format due to Covid-19 restrictions.

## **B. Education/Outreach Findings**

The District provides effective education and outreach programs to each required sector. The District's website provides information about District services and recycling opportunities. District staff regularly provide technical assistance to residents. The District tailors its educational outreach to the audience based on the type of recycling services available to the group and their level of knowledge.

The District believes it is reaching a wide range of individuals and developing programs that are educational, informational, and result in behavior change. While there was a general decrease in education/outreach activities during the Covid-19 pandemic, the District expects these opportunities to return within the planning period.

While the District has developed a solid foundation for its education/outreach program, there are areas that could be further developed. The District may want to consider the following:

- Consider offering adult education and outreach loan boxes;
- Evaluate a marketing strategy to increase subscription curbside programs in higher populated areas;
- Evaluate a marketing strategy to address recycling contamination at drop-off program, focusing on behavior change;
- Develop measurable outcomes for education/outreach programs;
- Develop a way to obtain feedback on programs, e.g., survey;
- Evaluate ways to improve outreach to small business and downtown areas to increase recycling (especially cardboard);



- Consider sending a targeted mailer to BGSU students and multi-house residents encouraging them to utilize the BGRC; and
- Consider updating/modernizing website.

### **13. Processing Capacity Analysis**

This section evaluates existing capacity for processing recovered materials. The lack of processing capacity can be an obstacle to implementing new recycling services and implementing initiatives to recover more material through existing services. Before a SWMD can increase recovery of materials, there must be adequate capacity to process the materials within a reasonable driving distance.

#### **A. Processing Capacity Overview**

In 2020, recyclables collected from the City of Perrysburg, City of Bowling Green, Lake Township, Village of Millbury, Village of Walbridge, and the District's drop-off program were taken to Republic Services' transfer station in Toledo, Ohio. The materials were then transported to Republic Services' material recovery facility (MRF) located in Oberlin, Ohio. The MRF is approximately 87 miles east of Toledo and has adequate capacity to process the materials. The City of Northwood, City of Rossford, and Village of Haskins contracted with Waste Management to collect their materials, which were then taken to the Republic Services' transfer station in Toledo, Ohio. BGRC did not send materials to a MRF, but has arrangements and/or contracts with various buyers of recyclables.

The District has no plans to build or operate a processing facility for recyclable materials. The District will continue to depend on existing private sector facilities. The District will monitor any changes or developments that could jeopardize present capacity and will address any material changes in circumstances using the process included in the District's Plan.

#### **B. Processing Capacity Findings**

The District will continue to rely on private sector processing of recyclables. Currently, there are facilities with adequate capacity within a reasonable distance from Wood County.

# APPENDIX I ACTIONS, PRIORITIES, AND PROGRAM DESCRIPTIONS

## A. Actions and Priorities

In Appendix H, the District performed a comprehensive evaluation of its programs and services through a series of analyses. The District then drew conclusions and identified findings from each analysis. The findings included successes as well as areas that could be improved.

From the findings, the District developed a list of potential actions that could be performed during the planning period. Some of the actions were easily identified, such as continuing existing programs and maintaining existing infrastructure. Other actions involved new ideas or strategies that may help further develop or improve programs.

Next, the District evaluated the potential actions and prioritized them as (1) will be implemented, (2) may be implemented, and (3) will not be implemented, but will be considered in the future. For those items that “may be implemented”, the District will design a process for gathering needed information and set a reasonable deadline to form a plan. If the plan is deemed to be feasible, full implementation may begin, or the District may launch a pilot program to test the plan.

Table I-1 summarizes the list of potential actions and priorities for the planning period. The District's first priority is to continue existing programs that are key to meeting the 2020 State Plan goals. This includes maintaining the existing residential recycling infrastructure, economic incentive programs, education/outreach, and technical assistance to residents and the commercial/industrial sectors. The District's category 2 priorities involve improvements or expansions to key existing programs and development or exploration of new programs that could help improve access to recycling and/or diversion opportunities. Finally, category 3 programs involve more permissive areas of programming that the District will not commit to during the planning period but will consider for the future.

**Table I-1 List of Potential Actions with Priority Rankings**

Strategic Evaluation Analysis Section	Program/Category	State Plan Goals Addressed	Comments	Priority Level
Residential Recycling Infrastructure	Non-subscription Curbside (Bowling Green, Perrysburg & Haskins)	1, 2	Continue to work with communities to maintain cost-effective non-subscription curbside recycling	1
	Subscription Curbside (Rossford, Northwood, Walbridge & Lake Twp)	1, 2	Continue to work with communities to maintain cost-effective subscription curbside recycling	1
	Evaluate potential of subscription curbside in Perrysburg Twp & Village of Millbury	1, 2	Work with local communities to evaluate whether it's possible to implement a subscription curbside program; dependent on community support	2
	Drop-Off Facilities (District's 24/7 program - 12 sites; BGRC; North Baltimore)	1, 2	Continue to provide permanent 24/7 residential drop-off program with sites throughout the county	1
	Improve signage at District's 24/7 drop-off program	1, 2	Purchase and place new easy-to-understand signage on bins targeted to reduce contamination and misuse of sites. Will wait until new service contract begins as some bins are rented.	2
	Develop improved monitoring of District's 24/7 drop-off program	1, 2	Improve methods for contamination and capacity monitoring, including site visits, random audits, on-site customer interactions	1
	Evaluate possibility of drop-off sites in northern part of Wood County to supplement curbside and easier access for multi-family housing	1, 2	Work with local communities to evaluate whether possible to implement drop-off program in northern part of county; dependent on community support	2
	Install surveillance cameras at 24/7 drop-off sites	1, 2	Prefer to continue education & outreach efforts and work with host communities to help keep sites clean; not an immediate need	3
	Contamination audit for 24/7 drop-off program & curbside program	1, 2	Previously planned joint contamination audit for District, Bowling Green, Perrysburg and Republic Services	2
	Develop a survey tool to collect program performance data for curbside and drop-off programs	1, 2	District will need additional staff and resources to perform district-wide survey. Will focus on developing more access to recycling during this planning period	2



# Appendix I Actions, Priorities, and Program Descriptions

Strategic Evaluation Analysis Section	Program/Category	State Plan Goals Addressed	Comments	Priority Level
Commercial/Institutional	BGSU partnership	2	Continue to partner with Bowling Green State University for education/outreach	1
	Wood County government administrative office recycling program	2	Continue providing collection & transportation of recyclables for Courthouse Complex and drop-off bins for E. Gypsy Lane Complex	1
	ClearStream lending program	2	Continue ClearStream lending program for events	1
	Commercial waste audits	2	Continue to offer this service and promote availability	1
	Collaborate with businesses, school districts, and communities on recycling options and services	2	Work to find alternatives since WLI no longer collecting recyclables for businesses; could include survey of needs; schools could potentially have drop-off program with single provider	2
	Develop a master list of commercial businesses and contact information	2	Attempt to obtain information about new businesses from Chamber of Commerce and communities	2
Industrial Recycling	Industrial waste audits & assessments	5	Continue to offer this service and promote availability	1
	Ohio Material Marketplace	5	Increase awareness of this resource for hard to recycle materials	1
	Assisting industry with grants	5	Provide assistance with identifying grants for developing or improving recycling, e.g., OEPA Market Development grants	1
	Economic development luncheons	5	Attend monthly economic development business roundtable luncheons	1
	Develop a master list of industrial businesses and contact information	5	Attempt to obtain information about new businesses from Economic Development Office and communities	2
	Annual awards program for Industry	5	Develop an awards program to recognize recycling & reduction efforts in business; need to develop master contact lists and better networking before implementation	3
Residential/Commercial Waste Composition	Yard waste/composting	1, 2	Continue promoting composting facilities	1
	Food Composting	1, 2	Consider additional food waste diversion programs	2
	Fiber-only drop-off	1, 2	Collaborate with communities to incorporate fiber-only drop-off or provide collection/transportation to BGRC	2
Economic Incentive	Per Capita Incentive Program	7	Continue per capita incentive program for curbside and drop-off communities	1
	Incentive funding for glass recycling	7	Continue providing BGRC with incentive funding for glass recycling	1
	Pay-As-You-Throw (PAYT) Program	7	Explore whether any haulers or communities would be willing to consider a PAYT program	2
	Capital Grants	1, 2, 7	Re-institute capital grant program for communities for woodchippers and leaf vacuums; consider grant programs for subsidizing/incentivizing food waste and yard waste recycling; subject to availability of funds and staffing capabilities	3

# Appendix I Actions, Priorities, and Program Descriptions

Strategic Evaluation Analysis Section	Program/Category	State Plan Goals Addressed	Comments	Priority Level
Restricted & Difficult to Manage Waste Streams	Technical assistance for residents; website & comprehensive list of materials & corresponding service provider	6	Continue providing technical assistance to residents; maintain District website with list of service providers for various difficult to recycle wastes (HHW, tires, electronics, lead-acid batteries, yard waste, etc.)	1
	Wood County Landfill - difficult to recycle items	6	Continue accepting tires, lead-acid batteries, appliances (including refrigerated units)	1
	Tire collection event	6	Host a countywide tire collection event; subject to availability of funds	2
	Regional Household Hazardous Waste (HHW) event	6	Evaluate a regional partnership to share cost of HHW event; form stakeholder group; not an immediate need	3
	Car seat recycling	6	Consider partnership with private service for recycling of car seats	2
	Electronics collections	6	Continue promoting existing drop-offs and curbside collection of electronics; Evaluate sponsoring an electronics recycling collection event; not an immediate need due to the multiple opportunities currently available	1
Diversion	Various existing programs	2	Continue offering existing programs discussed in other sections that facilitate diversion of material from landfills	1
Special Program Needs	Road Cleanup Program	no specific goal	Continue funding county engineer/township road cleanup program	1
	Closure/post closure care funding	no specific goal	Continue providing funds for closure and post/closure care for Wood County Landfill	1
	Litter collection and enforcement program	no specific goal	Consider new litter collection & enforcement program partnership with Sheriff/ODOT/Engineer's Office; subject to availability of funds	2
Financial	Maintain tiered disposal fee	no specific goal	Maintain disposal fee at \$2/ton in-district, \$4/ton out-of-district, \$2/ton out-of-state (See Appendix O)	1
	Renew designation agreements	no specific goal	Renew designation agreements during planning period; \$2/ton fee (See Appendix P)	1
Regional	Quarterly meeting of coordinators/educators	no specific goal	Consider convening a quarterly meeting for coordinators & educators from adjacent SWMDs; need new staff in place	2
	Quarterly meeting for curbside programs	no specific goal	Consider hosting quarterly meetings for curbside programs to share data, challenges/successes; need new staff in place	2
	SWMD collaboration and sharing of educational programs	no specific goal	Continue collaboration with other SWMDs on educational programs (See Appendix L)	1
	Shared staff with other SWMDs	no specific goal	Explore possibility of sharing additional staff for outreach/ education, program implementation and/or data collection; may be considered in future for new programs	3



## Appendix I Actions, Priorities, and Program Descriptions

Strategic Evaluation Analysis Section	Program/Category	State Plan Goals Addressed	Comments	Priority Level
Data Collection	Survey residential, commercial, and industrial	2	Continue existing survey process	1
	Partner with BGSU to develop a comprehensive directory of commercial & industrial businesses in Wood County	2, 5	Consider a partnership with BGSU to develop master list of businesses; not an immediate need; will continue to work on list in-house	3
Education/Outreach	Continue all required education programs	3	Website, resource list, inventory of available infrastructure, and speaker or presenter (See Appendix L)	1
	Continue education, outreach, marketing and technical assistance regarding reduction, recycling, composting, reuse, and other alternative waste management methods	4	Continue core activities but update the method of delivery to reach target audiences using best practices; implement measurable outcomes; seek feedback (See Appendix L)	1
Processing Capacity	Private Sector Processing of Recyclables	1, 2	Continue to rely on private sector processing of recyclables in the District (See Appendix H)	1



## B. Programs

This section will describe the programs that were available during the reference year and the programs that will be available during the planning period.

These programs are organized by the following categories:

- Residential Recycling
- Commercial/Institutional Recycling
- Industrial Recycling
- Restricted/Difficult to Manage Wastes
- Other Material Specific Programs
- Funding/Grants
- Economic Incentives
- Market Development Programs
- Facilities
- Data Collection; and
- Other miscellaneous programs

Education and outreach programs are discussed in Appendix L. Many of the programs implemented by the District address one or more of the ten state goals.

### ***Residential Recycling Infrastructure***

#### **Curbside Recycling Services**

##### *1. Non-Subscription Curbside Recycling*

ID	Name	Start Date	End Date	Goal(s)
NSC1-3	City of Bowling Green, City of Perrysburg, Village of Haskins	Existing	Ongoing	1 and 2

The communities listed above offered non-subscription curbside services in 2020 and the District anticipates services will continue through the planning period.

ID	Name	Start Date	End Date	Goal(s)
NSC6	Village of Millbury	Existing	2020	1 and 2

The Village of Millbury initially offered non-subscription curbside services in 2020 but discontinued the recycling program in May 2020. No alternative recycling program has been implemented. The District will work with the Village of Millbury to evaluate whether it's possible to implement a subscription curbside program.

ID	Name	Start Date	End Date	Goal(s)
NSC5	City of Rossford	Existing	2020	1 and 2

The City of Rossford initially offered non-subscription curbside services in 2020 but discontinued the recycling program in September 2020. A subscription curbside program is now offered.

ID	Name	Start Date	End Date	Goal(s)
NSC4	City of Northwood	Existing	2021	1 and 2

The City of Northwood offered non-subscription curbside services in 2020 but discontinued the recycling program in September 2021. A subscription curbside program is now offered.

## *2. Subscription Curbside Recycling*

ID	Name	Start Date	End Date	Goal(s)
SC1-2	Lake Township and Village of Walbridge	Existing	Ongoing	1 and 2

Lake Township and the Village of Walbridge offered subscription curbside services in 2020 and the District expects services to continue in the planning period.

ID	Name	Start Date	End Date	Goal(s)
SC4	City of Rossford	late 2020	Ongoing	1 and 2

The City of Rossford initially offered non-subscription curbside services in 2020 but discontinued the recycling program in September 2020. A subscription curbside program is now offered through a contract with Waste Management.

ID	Name	Start Date	End Date	Goal(s)
SC3	City of Northwood	2021	Ongoing	1 and 2

The City of Northwood offered non-subscription curbside services in 2020 but discontinued the recycling program in September 2021. A subscription curbside program is now offered through a contract with Re-Cyclops.

## **Drop-off Recycling Locations**

### *1. Full-Time, Urban Drop-offs*

ID	Name	Start Date	End Date	Goal(s)
FTU1	Bowling Green Recycling Center	Existing	Ongoing	1 and 2

The Bowling Green Recycling Center (BGRC) is a non-profit, full-time, urban drop-off. For many years, the City of Bowling Green transferred its recyclables to BGRC for processing. In late 2019, the City of Bowling Green authorized a contract with Republic Services for



processing services. The city continues to provide BGRC with a monthly payment for the recycling opportunity it provides to those without curbside access in the city, e.g., multi-family housing. BGRC is available as a full-time drop-off facility for residential and commercial users.

ID	Name	Start Date	End Date	Goal(s)
FTU2	Perrysburg Township	2018	Ongoing	1 and 2

Perrysburg Township offered a full-time urban drop-off site in 2020 and the District anticipates services will continue through the planning period. The Perrysburg Township drop-off site is part of the countywide 24/7 drop-off program sponsored by the District.

## *2. Part-Time, Urban Drop-offs*

There are no part-time, urban drop-offs in the District.

## *3. Full-Time, Rural Drop-offs*

Name	Start Date	End Date	Goal(s)
24/7 Drop-Off Locations – sites are listed in Appendix B (FTR1-11)	2018	Ongoing	1 and 2

In 2018, the SWMD implemented a countywide 24/7 permanent residential drop-off recycling program for areas not served by curbside programs. The program has 12 sites throughout the county with 51 total bins. The District contracts with Republic Services for collection, transportation and processing. The District will develop improved methods for contamination and capacity monitoring. See Appendix B and Appendix H for further details.

## *4. Part-Time, Rural Drop-offs*

ID	Name	Start Date	End Date	Goal(s)
PTR1	North Baltimore Village	Existing	Ongoing	1 and 2

The Village of North Baltimore offers a part-time rural drop-off program in southern Wood County. The Village collects recycling weekly on Saturday for three hours and the materials are taken to the Bowling Green Recycling Center.

## ***Mixed solid waste materials recovery facility***

There are no mixed solid waste materials recovery facilities within the District.



### **Multi-Family Unit Recycling**

The Bowling Green Recycling Center provides residents who dwell in multi-family housing with an opportunity to recycle. Additionally, multi-family housing residents may use the various drop-off sites located throughout Wood County.

### **Other Residential Recycling Programs**

There are no other residential recycling programs within the District.

### **Commercial/Institutional Sector Reduction and Recycling Programs**

#### *1. School Recycling*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood Lane Industries Collection Program	Existing	2020	2

For many years the District partnered with Wood Lane Industries (WLI) in making weekly recycling collection available to schools, government offices, parks, detention centers, industries, nursing homes, assisted living facilities, churches, apartment complexes, manufacturers, and other organizations throughout Wood County. WLI collected office paper, cardboard, steel, aluminum, plastic bottles, books and some glass. The materials were delivered to the BGRC. The BGRC paid WLI for the recyclables and the District provided WLI financial support.

In 2020, WLI terminated the services and informed the District the program was no longer feasible due to Covid-19 and increased costs. Since the Covid-19 pandemic was on-going, offices and institutions had to find their own recycling alternatives very quickly. Many of the businesses and offices responded by collecting and delivering their own materials to the BGRC, including the Wood County Courthouse and Administrative Offices Complex, the Wood County Senior Center, and the Historical Museum. Some schools developed in-house programs and others looked to find contracted haulers. The District provided contact information to several schools regarding alternative services.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
School District Recycling Program (Pending Evaluation Findings)	2023	Ongoing	2

The District will reach out to local school districts to determine what kind of recycling program each school district has implemented since the termination of WLI services. The District will explore with school officials the possibility of coordinating a school-only weekly drop-off program. The program would be paid for by the schools. It would provide greater convenience for the schools to have single stream recycling containers. The former program required sorting and storage. Additionally, the schools may be able to purchase the services under a single contract provider. The District will initiate discussions with school officials in 2023.

Name	Start Date	End Date	Goal
Bowling Green State University Partnership	Existing	Ongoing	1-4, 7

The District has had various partnerships with Bowling Green State University (BGSU) since the 1980s. The District provides BGSU funding as part of the per capita incentive grant program. This funding is to be used to support on-campus recycling initiatives. Currently, comingled recyclables are collected campus wide. The campus also provides several unique recycling programs for students, faculty, and staff, including the "WYMO" (When You Move Out, Don't Throw It Out) event hosted at the end of the school year. This event collects clothing, food, electronics, books, cleaning supplies and other unwanted materials as students are moving out. A composting program is also ongoing at one of the larger dining halls with materials being sent to Hirzel Farm's composting facility in Wood County. The District works in partnership with BGSU to create sustainable events in the City of Bowling Green such as the Black Swamp Arts Festival and BG Bash. Also, the District promotes recycling during BGSU Earth Month events in April. Landfill tours and environmental presentations are provided to BGSU students annually. BGSU provides annual recycling data to the District.

## 2. Collection Services (small businesses, government offices, etc.)

Name	Start Date	End Date	Goal
Wood Lane Industries Collection Program	Existing	2020	2

See "School Recycling" section above for description of Wood Lane Industries program.

Name	Start Date	End Date	Goal
Wood County Government Recycling	2021	Ongoing	2

After Wood Lane Industries discontinued collection service in 2020, Wood County government offices formed two programs to manage county recyclables. At the Wood County Courthouse Complex, maintenance assumed the responsibility for collecting and transporting materials to the Bowling Green Recycling Center (BGRC). The District purchased several large containers to hold the materials in the basement of the courthouse complex prior to transport. Materials are not individually weighed but are compiled in BGRC's total recycling tonnage.

At the East Gypsy Lane Complex, the county installed two drop-off boxes for the Wood County Sheriff's Office/Wood County Jail and the Wood County Department of Job and Family Services, which are serviced weekly by Republic Services. Several other government agencies contracted separately with Republic to have a drop-off box at their facilities, including Northwest Community Corrections Facility and the Wood County Health Department. The drop-offs are not advertised for public use and are paid for by each of the participating agencies. Republic Services does not have the ability to weigh



each container at the time of servicing. The total tonnage will be estimated from Republic Services invoice.

The District provides brochures/handouts to the various offices explaining what materials are acceptable for recycling. The District also provides ClearStream containers for the government complexes and recycling containers for individual offices. The primary materials collected are plastic bottles and aluminum cans.

### 3. *Special Event Recycling*

Name	Start Date	End Date	Goal
ClearStream Lending Program	Existing	Ongoing	1, 2, 4

The District currently owns 85 ClearStream recycling containers, which have been used at the Wood County Fair, Pemberville Free Fair, The Black Swamp Arts Festival, road races, and other events upon request. The design of these containers with their specially designed lids and clear bags encourages recycling of aluminum cans and plastic bottles with minimal contamination.

The ClearStream Lending Program encourages groups hosting events in Wood County to recycle. Groups will pick up the containers from the Solid Waste District office, return them after use and deliver the bags of recyclables to the Bowling Green Recycling Center. Ten of the 85 containers have been permanently located at the Wood County Historical Museum to accommodate repeat events throughout the year. The amounts recycled are reflected in BGRC's total tonnage.

The District promotes the loan program on the District's website and during events. The District continues to evaluate usage and will purchase additional containers and/or lids when warranted.

### 4. *Waste Assessments/Waste Audits*

Name	Start Date	End Date	Goal
Waste Audits	Existing	Ongoing	2, 5

Upon request, the District will provide free waste audits or waste assessments to commercial or industrial businesses located in the District. The audits or assessments will be performed by District staff. The audit will include a site visit, during which the District will identify the waste streams generated and review the current waste reduction and recycling systems. Following the visit, the District will provide the business with a summary report identifying strategies for implementing, expanding, or improving the current waste management system.

The District will also provide information on securing a hauler, broker, or processor that accepts the waste streams not currently being recycled (when available). The District did not have any requests for this service during the reference year. The District frequently receives questions about where and how to recycle materials. The District will link the



business with recycling sources or technical assistance. The District plans to add information related to this program to its website and newsletter.

#### *5. Contracting Assistance*

The District does not provide contracting assistance to the commercial/institutional sector.

#### *6. Workgroup/Roundtable*

The District does not participate in any workgroups/roundtables.

#### *7. Award/Recognition*

The District does not provide an award/recognition programs.

### **Industrial Sector Reduction and Recycling Programs**

#### *1. Waste Assessments/Waste Audits*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Waste Audits	Existing	Ongoing	2, 5

Upon request, the District will provide free waste audits or waste assessments to commercial or industrial businesses located in the District. The audits or assessments will be performed by District staff. The audit will include a site visit, during which the District will identify the waste streams generated and review the current waste reduction and recycling systems. Following the visit, the District will provide the business with a summary report identifying strategies for implementing, expanding, or improving the current waste management system.

The District will also provide information on securing a hauler, broker, or processor that accepts the waste streams not currently being recycled (when available). The District did not have any requests for this service during the reference year. More frequently, the District will receive questions about where and how to recycle materials. The District will link the businesses with recycling sources or technical assistance.

#### *2. Collection Services*

The District does not participate in any collection services for industry.

#### *3. Contracting Assistance*

The District does not provide contracting assistance to industrial sector.

#### 4. *Workgroup/Roundtable*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Economic Development Monthly Luncheons	2023	Ongoing	2, 5

District staff will attend monthly economic development business roundtable luncheons to network with local businesses and provide updates on District programs and services. The luncheons are sponsored by the Wood County Economic Development Office and are held throughout the county. The events are well-attended by businesses and community leaders. In the future, the District may consider forming a roundtable for industry to discuss solid waste management issues. However, the District is still in the beginning stages of developing relationships with the business community.

#### 5. *Award/Recognition*

The District does not provide an award/recognition program.

#### 6. *Other Programs*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Ohio Materials Marketplace	Existing	Existing	2, 5

The District will increase awareness and promote the Ohio Materials Marketplace (OMM) to the industrial sector. Ohio EPA implemented this tool to assist businesses with their waste recovery and reuse efforts. The OMM is a free, online platform for participants to trade usable wastes. To date, OMM users have diverted a cumulative 3.7 million pounds of material from Ohio's landfills and realized more than \$208,000 in savings. The District will provide information about OMM on the District's website, in electronic newsletters and through other industry-related outreach opportunities.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Recycle Ohio Market Development Grants	Existing	Ongoing	2, 5

The District will continue to promote and sponsor eligible industrial facilities for Recycle Ohio Market Development Grants. In 2018, the District sponsored Rosenboom for the purchase of a cardboard baler. This purchase has allowed Rosenboom to divert 30 tons of paperboard from the landfill annually. In 2021, the District sponsored Phoenix Technologies for upgraded processing equipment. The District will provide information about grant opportunities on the District's website, in electronic newsletters and through other industry-related outreach opportunities.



**Restricted/Difficult to Manage Wastes****1. Yard Waste**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Yard Waste/Composting	Ongoing	Ongoing	1 and 2

In 2020, there were 10 Class IV composting facilities and two Class II composting facilities utilized by Wood County. The Wood County Landfill composting site also provides yard waste disposal for county residents and commercial businesses. Many of the cities, villages and townships within the county also offer composting services to their residents. The names and locations of the composting facilities are posted on the District's website. The District encourages residents to compost yard waste and food waste at home in compost bins, piles, or tumblers. The District provides "how to" guides and troubleshooting guides for composting. The guides are available on the District website and at community outreach events. The District provides educational presentations to the Wood County Master Gardener students, various garden clubs, civic groups, school groups and other interested organizations. The District maintains a vermicomposting unit and provides information, displays, brochures and presentations as requested. Composting data is provided annually to the District.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Christmas Tree Recycling	Ongoing	Ongoing	1 and 2

The District promotes Christmas tree recycling during the months of December and January through its "Treecycle" advertisements, displays, and on the District website. Villages, cities, townships, and parks within the county are contacted to gather current locations and a schedule for tree collection. An advertisement/display is then updated and designed including a map to encourage residents to recycle their Christmas tree after the holidays. Residents may also dispose of one Christmas tree at no charge at the Wood County Landfill during the month of January. Collected trees are then chipped and recycled into mulch or used as temporary wildlife habitat by the local parks. Currently, eighteen (18) locations accept Christmas Trees for recycling on an annual basis during the months of December and January.

**2. Household Hazardous Waste, Batteries, Appliances, Electronics, etc.**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Household Recycling Directory	Ongoing	Ongoing	1 and 2

The strategy of the District concerning household hazardous waste is to educate the public on alternative materials and best disposal practices. The District has identified businesses and recycling programs for most materials residents inquire about including, electronics, batteries, tires, chemicals, unused prescriptions, paint and similar difficult to recycle materials.



The District maintains and distributes a comprehensive household recycling directory to assist residents with finding solutions for their hard to recycle wastes. The household recycling directory is posted on the District website and includes a telephone number as an answer "hotline" for information on solid waste issues. The information is also shared in other targeted outreach opportunities. In some cases, the business charges a fee. However, residents are provided an immediate solution, which minimizes the risk associated with storing these types of materials. Residents and recyclers are also encouraged to contact the District with new opportunities.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Electronics Collection Events	Ongoing	Ongoing	1 and 2

The City of Perrysburg partners with AIM Ecycling for recycling of electronics collected from the city's curbside program. This is a free service offered to all residents of Perrysburg. Perrysburg Township has partnered with Recycle I.T. USA and maintains a free drop-off site for electronics. Both services accept almost anything with a cord, including computers, printers, stereo equipment, microwaves, and small appliances. Televisions are not accepted at the site and must be taken to the Lucas County location for a fee. Several other private companies provide electronic recycling services, which are listed on the District's website.

Bowling Green State University and Way Library in Perrysburg, Ohio also recently sponsored electronics collection events.

The District does not currently sponsor any collection events for electronics. However, given the increase of electronics in daily life, it may be an event or program the District should consider for the future.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood County Landfill	Existing	Ongoing	1 and 2

The Wood County Landfill accepts several difficult wastes for recycling including scrap tires, lead acid batteries, appliances (including refrigerated units), and yard waste. The landfill is open to both residents and businesses. There are fees associated with disposal of all these items, except lead acid batteries and scrap metal. The landfill is open Monday - Friday and half a day on Saturday. The landfill and OEPA provide the district with annual statistics of items collected for recycling.

### 3. *Scrap Tires*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Scrap Tire Program	Existing	Ongoing	1 and 2

The District's strategy concerning scrap tires is to focus on proper disposal. The District is committed to having a legal location for individuals to take scrap tires. Currently, several tire dealers and both landfills in the District accept scrap tires for recycling. The District

occasionally hosts special tire collection events for residents. The District will continue educating the public on proper tire disposal through brochures and the District website.

In 2020, the District offered the Township Spring Cleanup for townships to bring items collected on the township roads to the Landfill at no cost to the Township. The duration was shortened in 2020 due to Covid-19 related safety concerns.

#### 4. *Pharmaceuticals*

Name	Start Date	End Date	Goal
Pharmaceuticals	Ongoing	Ongoing	1 and 2

Currently, eight local law enforcement agencies in the District have permanent drop-off locations for pharmaceuticals. Additionally, many private pharmacies (e.g., CVS) will accept pharmaceuticals. The District provides information to residents on available locations to properly dispose of pharmaceuticals and promotes non-District collection on the District website.

### **Other Material Specific Programs**

#### 1. *Food Waste*

Name	Start Date	End Date	Goal
Food Waste	Ongoing	Ongoing	1 and 2

Hirzel Farms operates a Class II composting facility in the District. It accepts food waste materials from outside sources in addition to materials derived from the Hirzel Canning operations. This facility also accepts waste from the residential organics curbside collection recycling program in the Village of Luckey operated by N.A.T. Transportation. Bowling Green State University diverts postconsumer food waste to Hirzel Farms along with several other businesses and organizations within Wood County. Hirzel Farms generally provides annual data to the District.

In 2021, the City of Bowling Green established a residential Food Waste Drop-Off. The city contracted with GoZero on the project. All collected food waste is taken to Andre Farms in Wauseon, Ohio to be composted. The following food items are accepted: baked goods and pasta, beans and eggs, fats and sugars, fruits and vegetables, greasy pizza boxes, paper towels and napkins (unlined paper items), and raw/cooked meat, bones, and dairy. The program is limited to residential participation, but the city encourages businesses to contact GoZero directly for commercial services. The District will be working with the city to obtain data and information about this new program.

As new technology and composting practices become available, the District will continue to work with local waste haulers, schools, organizations, businesses, etc. to increase the amount of food waste materials diverted from the landfill. The District's website includes brochures and information on food waste composting.



## 2. *Glass*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Bowling Green Recycling Center Glass Subsidy	Existing	Ongoing	1 and 2

The District pays the Bowling Green Recycling Center \$30/ton to offset the cost of glass recycling at its facility.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
O-I Glass/City of Perrysburg Glass Drop-Offs	May 2021	Ongoing	1 and 2

In 2021, the City of Perrysburg partnered with O-I Glass Inc. to create a glass drop-off recycling opportunity for residents and businesses. O-I Glass Inc. is an American Fortune 500 Company that specializes in container glass products with its world headquarters located in Perrysburg, Ohio. O-I Glass will be using the collected glass in their manufacturing process. The drop-off program has three locations: O-I Glass Drop-Off Center at 1890 Wilkinson Way, Perrysburg, Ohio, open from dawn to dusk, (2) Department of Public Service building at 11980 Roachton Road, Perrysburg, Ohio, and (3) Department of Public Utilities at 211 E. Boundary, Perrysburg, Ohio.

## 3. *Fiber/Paper*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Personal Shredding Events	Existing	Ongoing	1, 2, 4

From 2018 to 2020, the District partnered with the Wood County Department of Jobs and Family Services (JFS) to host an annual Personal Shredding Event for Wood County residents. Residents could bring up to five boxes of material to be shredded securely onsite and then recycled. In return, residents were asked to donate a toy or gift card to support children involved in the JFS system during the holidays. The District paid for the cost of the shredding contract and provided staffing and promotional assistance. The event is popular, and the District is working with JFS to host two shredding events annually in the future.

### **Funding/Grants**

#### 1. *Incentive Based Grants*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Per Capita Incentive Grant Program	1993	Ongoing	1 and 2

The District provides incentive funding to each local government that participates in a residential recycling program. The amount of funding is subject to availability of funds. Currently, the allocation is \$1.00 per person for providing a drop-off or participating in the county's drop-off program and \$1.50 per person for providing a curbside program. The



local governments are paid annually, and the population is based upon the most recent federal census. In return for receiving these funds, each local government must annually report on the volumes of materials recycled and diverted from the landfill.

Name	Start Date	End Date	Goal
Infrastructure/Cleanup Grant Program	Existing	Ongoing	1 and 2

Grants for assistance with infrastructure related to landfill operations and the cleanup of solid waste problems will be considered as funds allow and needs are presented. These grants may include, but are not limited to, landfill access roads, landfill related waterlines, cleanup of solid waste dumps (including tire piles) and closure and post-closure costs of public facilities.

## 2. *Improvement Grants*

The District does not offer any improvement grants.

### **Economic Incentives**

#### *D. Volume-Based Billing/Pay-As-You-Throw Trash Collection Services*

The District does not have any Volume-Based Billing/Pay-As-You-Throw Trash Collection Services.

#### *E. Financial Award Programs (e.g., RecycleBank, "Get Caught Recycling")*

The District does not have any financial award programs. The District may consider this type of program as part of its Social Marketing Strategy to reduce contamination in recycling. See Appendix L.

#### *F. Other Economic Incentive Programs*

The District does not have any other economic incentive programs.

### **Market Development Programs**

The District does not have any market development programs.

### **Facilities**

#### *F. Materials Recovery Facilities/Recycling Centers*

The District does not have any materials recovery facilities/recycling centers.

*G. Landfills*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood County Landfill	Existing	Ongoing	Goal 1 and 2

The Wood County Landfill is owned and operated by the Wood County Board of Commissioners. It is a municipal solid waste landfill permitted by Ohio EPA. The landfill currently has 3.4 years of remaining capacity but has a pending permit-to-install for an expansion project that would increase capacity for up to 111 years based on current tonnage.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Evergreen Recycling & Disposal Facility	Existing	Ongoing	Goal 1 and 2

Evergreen Recycling & Disposal Facility is owned by Waste Management. It accepts municipal and industrial waste. Based on the 2020 Ohio Solid Waste Facility Data Tables, the landfill has 36 years remaining capacity assuming the current rate of use.

*H. Closed Facility Maintenance (Closure/Post-Closure Care)*

There are no closed facilities located in the District.

*I. Transfer Facilities*

There are no transfer facilities located in the District.

*J. Composting Facilities*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Various private compost facilities	Existing	Ongoing	1 and 2

See "Yard Waste/Composting" above.

**Data Collection**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Residential Recycling Survey	Existing	Ongoing	1 and 2

Annually, the District collects survey information from local governments regarding their recycling programs for use in the District's annual district report. The survey is one page long and requests the following information: disposal landfill used, service provider, tons of waste collected, curbside recycling provider, the pounds of materials recycled, tons of yard waste diverted (leaves, grass, brush) and where the material is taken, and number of tires collected. The local governments obtain their data from their service provider.

If the community participates in the District's drop-off program, it does not report any pounds of recyclables as that information is provided directly to the District from Republic



Services. Generally, the local governments timely submit their survey responses, and the District seldom has to perform any follow-up.

Name	Start Date	End Date	Goal
Commercial and Industrial Business Surveys	Existing	Ongoing	1 and 2

Annually, the District collects survey information from commercial and industrial generators to obtain recycling data for use in the District's annual district report. The District uses an Ohio EPA survey template, and the mailing list is developed from the prior year's commercial sources list. The District sometimes has difficulty obtaining responses. A more comprehensive list of industrial/commercial contacts is needed, which would provide improvement in commercial data collection. The District may also research better survey instruments to aid in user friendliness and data accuracy.

### **Other Programs**

#### *1. Litter Programs*

Name	Start Date	End Date	Goal
Township/Engineer Road Cleanup Program	Ongoing	Ongoing	1 and 2

During the spring of each year, the District hosts a cleanup event where township trustees and the County Engineer's Office can collect roadside litter, scrap tires and other waste materials and dispose of them at the Wood County Landfill free of charge. The cleanup time is generally 4-6 weeks. The program is popular and a benefit to the community. Recyclables are taken to the Bowling Green Recycling Center. The Wood County Landfill provides data to the District on how much material was collected.

#### *2. Health department support (Allowable Use 3)*

The District does not receive support from the Health Department.

#### *3. County Assistance*

The District does not receive any supplemental support from the County.

#### *4. Open Dumping/Litter Enforcement*

The District does not provide funding for enforcement of open dumping or litter.

#### *5. Open dump/tire dump cleanup*

The District will also provide financial support to the Wood County Landfill for waste reduction and recycling services necessary for plan implementation. Funds for cleanup



projects, such as improper disposal, are part of the plan but dependent on sufficient funds being available.

*6. Disaster debris/disaster assistance*

Funds for cleanup projects, such as disaster clean up, are part of the plan but are dependent on availability of funds.

*7. Closed Facility Maintenance/Post-Closure Care*

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood County Landfill Post-Closure	Existing	Ongoing	1 and 2

The District provides annual financial support to the Wood County Landfill for closure/post-closure costs, including accumulation of funds and payment for leachate handling facilities and treatment. The amount of funding is based on year-end finances.

*8. Facility Ownership/Operations*

No current programs.

*9. Waste-to-energy projects*

No current programs.

# APPENDIX J REFERENCE YEAR OPPORTUNITY TO RECYCLE AND DEMONSTRATION OF ACHIEVING GOAL 1

Goal 1 requires that a SWMD 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 percent of its residential population in the county and ensure that commercial generators have access to adequate recycling opportunities.

The steps for demonstrating the residential component of Goal 1 are as follows:

1. Determine which recycling opportunities, available in the reference year, qualify for the demonstration of achieving Goal 1.
2. Assign population credits to the existing recycling opportunities (default credits or weight method).
3. Determine which demonstration method to use (i.e., the standard demonstration or an alternative demonstration established in the 2020 State Plan).
4. Calculate the percentage of the residential population that had the opportunity to recycle in the reference year (see Table J-1).
5. Demonstrate achieving Goal 1:
  - a. If the SWMD achieved Goal 1 in the reference year:
    - i. Demonstrate that the SWMD will continue to achieve Goal 1 throughout the planning period.
    - ii. Demonstrate that the SWMD will meet the other requirements for achieving Goal 1.

## A. Residential Sector Opportunity to Recycle

**Table J-1 Opportunity to Recycle**

ID #	Wood	2020		2023		2024		Per Year % Population Change Used <sup>1</sup>
	Name of Community (City, Village, Township)	Community Population <sup>1</sup>	Population Credit	Community Population	Population Credit	Community Population	Population Credit	
Non-subscription curbside								
NSC1	City of Bowling Green	30,808	30,808	31,085	31,085	31,179	31,179	0.3%
NSC2	City of Perrysburg	25,041	25,041	26,543	26,543	27,074	27,074	2%
NSC3	Village of Haskins	1,245	1,245	1,264	1,264	1,270	1,270	0.5%
NSC4	City of Northwood	5,160	5,160	--	--	--	--	-0.2%
NSC5	City of Rossford	6,299	6,299	--	--	--	--	0%
NSC6	Village of Millbury	1,193	1,193	--	--	--	--	-0.06%
Subscription curbside								
SC1	Lake Township	6,956	1,739	6,956	1,739	6,956	1,739	0%
SC2	Village of Walbridge	3,011	755	3,011	753	3,011	755	0%

Appendix J Reference Year Opportunity to  
Recycle and Demonstration of Achieving Goal 1

ID #	Wood	2020		2023		2024		Per Year % Population Change Used <sup>1</sup>
	Name of Community (City, Village, Township)	Community Population <sup>1</sup>	Population Credit	Community Population	Population Credit	Community Population	Population Credit	
SC3	City of Northwood	--	--	5,129	1,282	5119	1,282	-0.2%
SC4	City of Rossford	--	--	6,299	1,575	6,299	1,575	0%
<b>Full-time, urban drop-off</b>								
FTU1	Bowling Green Recycling Center	131,156	9,200	133,254	9,200	133,974	9,200	0.5%
FTU2	Perrysburg Township	13,571	5,000	13,788	5,000	13,863	5,000	0.5%
<b>Part-time, urban drop-off</b>								
	None							
<b>Full-time, rural drop-off</b>								
FTR1	Bloomdale Village/Bloom Township	2,513	2,500	2,553	2,500	2,567	2,500	0.5%
FTR2	Custar/Milton Township	315	2,500	320	2,500	322	2,500	0.5%
FTR3	Grand Rapids Village	925	2,500	940	2,500	945	2,500	0.5%
FTR4	Jackson Township/Hoytville Village	702	2,500	713	2,500	717	2,500	0.5%
FTR5	Pemberville Village, Freedom Township, Webster Twp	3,874	2,500	3,936	2,500	3,957	2,500	0.5%
FTR6	Portage Village	398	2,500	404	2,500	407	2,500	0.5%
FTR7	Portage Township	1,558	2,500	1,583	2,500	1,591	2,500	0.5%
FTR8	Tontogany Village, Washington Township	1,864	2,500	1,894	2,500	1,904	2,500	0.5%
FTR9	Troy Township/Luckey	4,097	2,500	4,163	2,500	4,185	2,500	0.5%
FTR10	Wayne Village	841	2,500	854	2,500	859	2,500	0.5%
FTR11	Weston Village	1,455	2,500	1,478	2,500	1,486	2,500	0.5%
<b>Part-time, rural drop-off</b>								
PTR1	North Baltimore Village	3,369	2,500	3,423	2,500	3,441	2,500	0.5%
<b>Mixed municipal waste material recovery facility</b>								
	None							
<b>Total County Population</b>		131,156		131,248		131,341		
<b>Total Population Credit</b>		116,440		108,441		109,074		
<b>Percent of Population</b>		<b>89%</b>		<b>83%</b>		<b>83%</b>		

1. Ohio Department of Development, Office of Research, August 2021. Population Counts for Governmental Units: 2020, 2010, 2000. <https://devresearch.ohio.gov/files/research/P3008.pdf>

2. percent change from 2010 to 2020 was divided by 10 to estimate a per year % population change



**Table J-2 Population Credit for Drop-offs Evaluated Using the Weight of Material Collected Method**

Program ID#	Name of Community/Drop-off (City, Village, Township)	2020	
		Total pounds collected	Population Credit
FTU1	Bowling Green Recycling Center	1,734,000	9,200

### **1. Methodology**

In 2020, the Wood County SWMD offered a variety of residential recycling opportunities, including six non-subscription curbside programs, two subscription curbside programs, two full-time urban recycling drop-off sites, twelve full-time rural drop-off sites, and one part-time rural drop-off site.

In demonstrating compliance with Goal 1, the District applied the following residential population calculation and default population credits to its residential recycling infrastructure, unless otherwise noted.

Residential Population Calculation:

- To calculate the population in 2023 and 2024, the average annual percent population change between 2010 and 2020 was used for each municipality based on the data in Table 2-1. For example, the city of Perrysburg experienced a 21% increase in population between 2010 and 2020 (or 2.1% annual average). Likewise, the City of Northwood had a slight decrease in population between 2010 and 2020, which is reflected in Table J-1. Note that this method was only used where population influenced the population credit calculation (e.g., curbside recycling). Remaining population estimates for drop-offs have a county-wide average annual population increase of 0.5% applied.

Population Credits for Curbside Recycling Programs:

- Non-Subscription Curbside Recycling Program – For a community that offers a qualifying non-subscription curbside program, the SWMD can credit the entire population of the community that is served by the non-subscription curbside program.
- Subscription Curbside Recycling Service - By default, a SWMD can credit 25 percent of the population for a jurisdiction served by a qualifying subscription curbside service.

Population Credits for Drop-off Recycling Program:

A drop-off is categorized by the number of hours the drop-off is available for use and the population of the jurisdiction in which the drop-off is located. Accordingly, drop-offs are

defined as being in either urban or rural areas and as being available either full-time or part-time.

- Full-time urban drop-off – is in a political jurisdiction with a residential population of 5,000 or more and is available at least 40 hours per week.
- Full-time rural drop-off – is in a political jurisdiction with a residential population of less than 5,000 and is available at least 40 hours per week.
- Part-time urban drop-off – is in a political jurisdiction with a residential population of 5,000 or more and is available for use less than 40 hours per week but is available at a regularly scheduled time at least once a month.
- Part-time, rural drop-off – is in a political jurisdiction with a residential population of less than 5,000 and is available for use less than 40 hours per week but is available at a regularly scheduled time at least once a month.
- Default population credit:
  - Full-Time Urban - 5,000 population credit
  - Part-Time Urban - 2,500 population credit
  - Full-Time Rural - 2,500 population credit
  - Part-Time Rural - 2,500 population credit

The District applied the default population credit method for all locations except the Bowling Green Recycling Center, which used the weight of material collected method as described below.

- Weight of Material Collected Credit Method - This methodology assigns the number of users to an existing drop-off based on weight of material collected. The more material collected the greater the number of users that are assumed to use the site. This methodology is best suited to drop-offs where large quantities of recyclable materials are collected. Using this methodology, a SWMD may be able to assign a higher population credit to a drop-off than would be assigned using the default population credits.

Reference Table B in the Ohio EPA Format 4.1 instructions were used to correlate the weight collected in the reference year for the Bowling Green Recycling Center (867 tons or 1,734,000 pounds) to the population credit (9,200 people), as shown in Table J-2. This only includes materials collected at the BGRC drop-off and does not include material collected through other programs and delivered to the BGRC (i.e., North Baltimore drop-off).

Using Reference Table B in the Ohio EPA Format 4.1 instructions, the District compared the weight collected in the reference year for the BGRC (867 tons or 1,734,000 pounds) to the corresponding population credit (9,200 people), as shown in Table J-2.

Finally, to be a creditable recycling opportunity for achieving Goal 1, a drop-off must meet the criteria for one of the four types of drop-offs described above and meet the general criteria below:

## Appendix J Reference Year Opportunity to Recycle and Demonstration of Achieving Goal 1

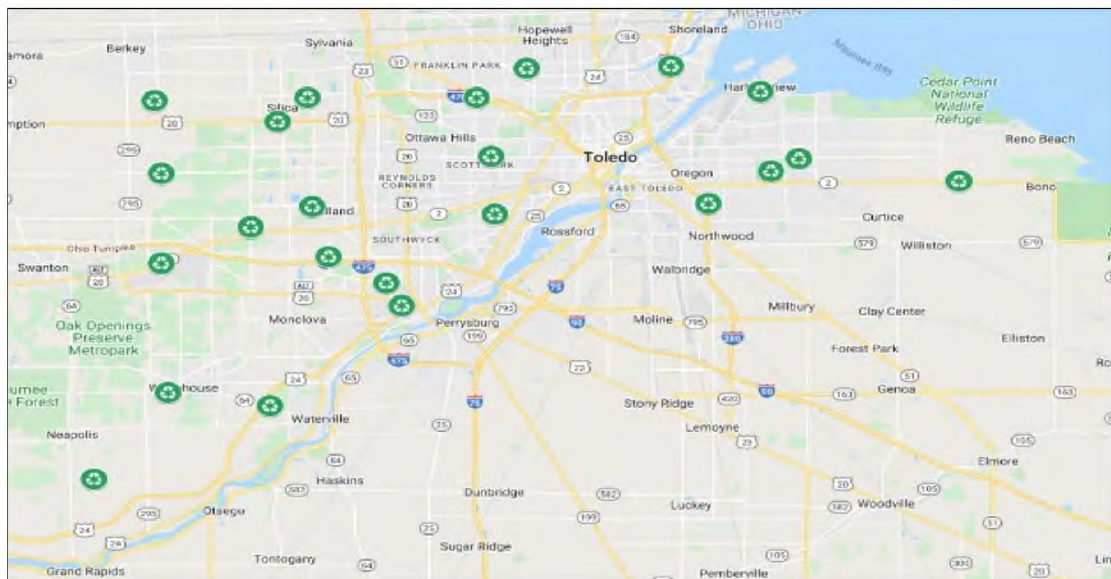
- The drop-off must collect at least five of the materials designated as highly amenable to recycling in the 2020 State Plan. Those materials include corrugated cardboard, newspaper, office paper, mixed paper, glass containers, steel containers, aluminum containers, and plastic containers (residential).
- The drop-off must be available to the public and the public can easily find and access the site.
- The drop-off must meet certain capacity:
  - Rural drop-offs must provide a minimum of six cubic yards of capacity, and;
  - Urban drop-offs must provide a minimum of 10 cubic yards of capacity.
- There must be signs that are adequate to, at a minimum:
  - Direct the public to the site or provide the location of the site,
  - List the materials that are accepted, and
  - Provide days and hours of operation (particularly important if the site is available less than 24 hours per day, seven days per week).
- The drop-off must meet the demand of the population for use of the drop-off site (e.g., provides collection containers with adequate capacity to handle the use of the site, is serviced frequently enough given the use of the site, etc.).

The drop-off does not have to be provided by the SWMD to be considered part of the recycling infrastructure. Municipalities are not permitted to have population credits exceeding 100%.

### 2. Summary

The estimated opportunity to recycle percentage for Wood County in 2020 was 89%, which exceeds Goal 1. While the loss of one subscription curbside recycling program in 2020 reduced the number of residents with access to recycling in the Village of Millbury, the access percentage was estimated to be 83% in 2023 and 2024.

**Figure 6-1. Lucas County Drop-Off Locations**





The District is aware that some Wood County residents may be accessing drop-off locations in Lucas County, especially along the Maumee River corridor. However, there is no way to quantify the actual number or percent of residents using these nearby facilities. Even without this data, the District has demonstrated access to recycling opportunities to more than 80% of its residential population for both the reference year and the remaining planning period.

## B. Commercial Sector Opportunity to Recycle

If a SWMD opts to achieve Goal 1, then it must also demonstrate that commercial and institutional generators have adequate opportunities to recycle.

Qualifying recycling opportunities for the commercial/institutional sector include:

- A recycling service provider/hauler that offers collection services to commercial/institutional generators throughout the county.
- Drop-off locations within the county (if same as drop-offs that serve the residential sector, then the SWMD must demonstrate that it provides/will provide outreach to commercial/institutional generators about the availability of drop-offs).
- Buyback operations/scrap yards located within the county.
- Material recovery facility recovering recyclables from mixed waste (so long as commercial waste is processed at the facility).

Goal 1 requires that the District demonstrate adequate opportunities for recycling materials generated by commercial establishments. The District selected five materials from a list of materials often generated in large amounts by businesses. The five materials that the District is using for this demonstration are corrugated cardboard, mixed paper, food waste, steel cans and plastic containers. Although Table J-4 only lists five materials, many of the private sector service providers accept and recycle other materials that are generated by commercial businesses.

**Table J-4 Demonstration of Commercial Opportunity to Recycle**

Service Provider	Type of Recycling Service Provided	Corrugated Cardboard	Mixed Paper	Food Waste	Steel	Plastic Containers
Wood						
Bates Recycling Inc.	Scrap Yard				X	
Bowling Green Recycling Center	Drop-off	X	X		X	X
E&M Recycling	Scrap Yard				X	
Elliot's Scrapping	Scrap Yard				X	
N.A.T. Transportation	Hauler			X		
Republic Services	Hauler	X	X		X	X
Waste Management	Hauler	X	X		X	X

Table J-4, "Infrastructure Demonstration for the Commercial Sector," presents drop-offs, buy backs, scrap yards, haulers, pallet refurbishers, and material recovery facilities that provide recycling opportunities to the commercial/institutional sector. The total number

of recycling opportunities in the District's jurisdiction for five materials designated for the commercial sector to demonstrate compliance with Goal 1 are as follows:

- Corrugated cardboard: 3
- Mixed paper: 3
- Food Waste: 1
- Steel: 6
- Plastic Containers: 3

## **C. Demonstration of Meeting Other Requirements for Achieving Goal 1**

### **1. Residential/Commercial Waste Reduction and Recycling Rate**

A SWMD that opts to achieve Goal 1 must demonstrate having achieved a 25% residential/commercial waste reduction and recycling rate in the reference year or show the District is achieving annual increases during the planning period.

In the reference year, the District's residential/commercial sector had a 23% waste reduction and recycling rate, which is just below the 25% requirement to achieve Goal 2. In Appendix K, Table K-1, the District projects modest increases in waste diversion to attain a recycling rate of 25% by 2021. The District will strive to attain the 25% goal during the planning period.

### **2. Industrial Waste Reduction and Recycling Rate**

The Ohio EPA eliminated the industrial waste reduction and recycling rate percentage goal. However, the District typically has a very high industrial recycling rate (94% for reference year 2020). The SWMD will incorporate a strategic initiative for the industrial sector into its solid waste management plan, as discussed in Appendix H, I and L.

### **3. Encouraging Participation**

The District plans to encourage residents and commercial generators to participate in recycling through the various programs outlined in Appendix I and L.

## APPENDIX K WASTE REDUCTION AND RECYCLING RATES AND DEMONSTRATION OF ACHIEVING GOAL 2

Appendix K demonstrates a SWMD's progress toward achieving the residential/commercial reduction and recycling rate established in Goal 2 of the 2020 State Solid Waste Management Plan.

Goal 2 challenges SWMDs to reduce and recycle 25 percent of the solid waste generated by the residential/commercial sector. Waste from the residential/commercial sector is essentially municipal solid waste. Ohio measures diversion from landfills, not just recycling. Thus, composted yard waste also contributes to achieving Goal 2 as does volume reduction achieved through incinerating solid waste.

Even though the District has chosen to demonstrate compliance with Goal 1 of the State Plan, the District will strive to achieve Goal 2 as well.

Table K-1 summarizes the projected waste reduction and recycling rate for the residential/commercial sector in the reference year (2020) and the planning period (2023-2039). The District projects a modest increase from 2020, and projects meeting the 25% threshold by the first year of the planning period.

**Table K-1 Annual Rate of Waste Reduction: Residential/Commercial Solid Waste**

Year	Population	Recycled	Disposed	Total Generated	Waste Reduction & Recycling Rate (%)	Per Capita Waste Reduction & Recycling Rate (ppd)
2020	131,156	39,571	133,076	172,647	23%	1.65
2021	131,248	40,716	123,170	163,887	25%	1.70
2022	131,341	41,939	123,257	165,197	25%	1.75
2023	131,433	43,224	123,344	166,568	26%	1.80
2024	131,526	44,572	123,431	168,003	27%	1.86
2025	131,618	45,988	123,517	169,506	27%	1.91
2026	131,932	47,475	124,107	171,582	28%	1.97
2027	132,246	49,036	124,401	173,438	28%	2.03
2028	132,560	50,676	124,401	175,077	29%	2.09
2029	132,874	50,676	124,401	175,077	29%	2.09
2030	133,188	50,676	124,401	175,077	29%	2.08
2031	133,292	50,676	124,401	175,077	29%	2.08
2032	133,396	50,676	124,401	175,077	29%	2.08
2033	133,500	50,676	124,401	175,077	29%	2.08
2034	133,604	50,676	124,401	175,077	29%	2.08
2035	133,708	50,676	124,401	175,077	29%	2.08
2036	134,824	50,676	124,401	175,077	29%	2.06
2037	134,848	50,676	124,401	175,077	29%	2.06
2038	134,872	50,676	124,401	175,077	29%	2.06
2039	134,896	50,676	124,401	175,077	29%	2.06

Sources of Information: Data in this table is taken from other portions of the plan including Appendix C, D, E and G.

Sample Calculations: Waste Generated = Reduced/Recycled – Disposed

Per Capita rate = (amount recycled x 2,000) / 365 days / population

Even though the recycle rate for the industrial sector is no longer required by the Ohio EPA, the District surveyed the industrial sector and therefore was able to document the



## Appendix K Waste Reduction Rates and Demonstration of Achieving Goal 2

industrial sector data and projection for waste reduction. Table K-2 shows the District's industrial sector annual rate of waste reduction.

**Table K-2 Annual Rate of Waste Reduction: Industrial Solid Waste**

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2020	110,407	7,122	117,529	94%
2021	110,407	7,478	117,885	94%
2022	110,407	7,852	118,259	93%
2023	110,407	8,245	118,651	93%
2024	110,407	8,657	119,064	93%
2025	110,407	9,090	119,496	92%
2026	110,407	9,544	119,951	92%
2027	110,407	10,021	120,428	92%
2028	110,407	10,522	120,929	91%
2029	110,407	10,522	120,929	91%
2030	110,407	10,522	120,929	91%
2031	110,407	10,522	120,929	91%
2032	110,407	10,522	120,929	91%
2033	110,407	10,522	120,929	91%
2034	110,407	10,522	120,929	91%
2035	110,407	10,522	120,929	91%
2036	110,407	10,522	120,929	91%
2037	110,407	10,522	120,929	91%
2038	110,407	10,522	120,929	91%
2039	110,407	10,522	120,929	91%

Sources of Information: Data in this table is taken from other portions of the plan including Appendix D, F and G.

Sample Calculations: Waste Generated = Reduced/Recycled + Disposed

2020 Waste Reduction & Recycling Rate = (2020 Waste Reduced & Recycled / 2020 Waste Generated) x 100

The combined WR-R rate for residential/commercial and industrial sectors is shown in Table K-3. Overall, the WR-R rate is projected to increase to 52% by the end of the planning period from 51% in 2020.

**Table K-3 Annual Rate of Waste Reduction: Total Solid Waste**

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2020	149,978	140,198	290,176	51.7%
2021	151,123	130,649	281,772	53.6%
2022	152,346	131,109	283,455	53.7%
2023	153,631	131,588	285,219	53.9%
2024	154,979	132,087	287,067	54.0%
2025	156,395	132,607	289,002	54.1%
2026	157,882	133,356	291,238	54.2%
2027	159,443	134,128	293,571	54.3%
2028	161,082	134,924	296,006	54.4%
2029	161,082	134,924	296,006	54.4%
2030	161,082	134,924	296,006	54.4%
2031	161,082	134,924	296,006	54.4%
2032	161,082	134,924	296,006	54.4%
2033	161,082	134,924	296,006	54.4%
2034	161,082	134,924	296,006	54.4%
2035	161,082	134,924	296,006	54.4%
2036	161,082	134,924	296,006	54.4%
2037	161,082	134,924	296,006	54.4%

## Appendix K Waste Reduction Rates and Demonstration of Achieving Goal 2

Year	Waste Reduced and Recycled (tons)	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate (percent)
2038	161,082	134,924	296,006	54.4%
2039	161,082	134,924	296,006	54.4%

Sources of Information: Tables K-1 and K-2

Sample Calculations: Waste Generated = Reduced/Recycled + Disposed

2020 Waste Reduction & Recycling Rate = (2020 Waste Reduced & Recycled / 2020 Waste Generated) x 100

# APPENDIX L      MINIMUM REQUIRED EDUCATION PROGRAMS: OUTREACH AND MARKETING PLAN AND GENERAL EDUCATION REQUIREMENTS

## A.      Minimum Required Education Programs

Under Goal 3 of the 2020 State Plan, the District must provide the following required programs:

- A website;
- A comprehensive resource guide;
- An inventory of available infrastructure; and
- A speaker or presenter.

### 1.      Web Page

Name	Start Date	End Date	Goal
<a href="http://www.recyclewoodcounty.org">www.recyclewoodcounty.org</a>	Existing	Ongoing	3

The District website home page provides a wide variety of helpful information for residents. The home page includes contact information and a link to the District's Solid Waste Management Plan. It also includes links for the Landfill, Recycling, Events, Recycling Outreach and About Us. Each of these links provide additional categories of information.

Landfill	General Information, Disposal Fees, Mulch Sales, and Yard Waste.
Recycling	General Information, Permanent 24/7 Residential Drop-Off Locations, Curbside Recycling (with links and/or phone numbers to communities with curbside), Household Recycling Locations, Household Recycling Options, and Other Recycling Opportunities.
Events	Upcoming and Past Events, including brochures, pictures and description of activities.
Recycling Outreach	General Information, Presentations, Loan Boxes, Lending Library, Windows on Waste, and Tour Information.
About Us	District Information, Grants, FAQs, Brochures, Policy Committee, Want to Volunteer, Links to Other Organizations.

Residents can also sign up for the quarterly e-newsletter "WOOD You Recycle?" on the website and view several recycling tutorial videos.

The Recycling Outreach Coordinator is responsible for maintaining and updating the website. The website was developed over eight years ago and the District will be evaluating a possible re-design in this planning period. The website upgrade would include on-line analytics to determine how frequently the site is being accessed. The District updates the information on the website as needed and uses the website as a tool



to communicate with residents about recent recycling issues and events. In addition to a possible redesign, the District anticipates future changes/updates to the website as the District implements social marketing initiatives.

## 2. **Comprehensive Resource Guide**

Name	Start Date	End Date	Goal
Comprehensive Resource Guide	Existing	Ongoing	3

The District has a comprehensive resource guide on its website which helps users find appropriate places to recycle and/or dispose of various materials. The guide is not a single list of information, but is organized by topic on the District's website as follows:

Household Recycling Locations	Lists facilities that provide recycling opportunities and identifies specific items accepted at each facility.
Household Recycling Options	Lists specific recyclable materials and links to facilities that accept the materials, e.g., cell phones, textiles, HHW, appliances, yard waste, tires, etc.
Other Recycling Opportunities	Lists other recycling facilities within the District and other nearby recycling opportunities, e.g., scrap metal recyclers, non-profit drop-off recycling center, HHW facility, and Ohio EPA Materials Marketplace.
Wood County SWMD's Permanent 24/7 Residential Mixed Recycling Drop-off Program	Locations; Accepted materials; Brochures; and Contact Information.
Curbside Recycling	Locations; Contact information for curbside recycling programs, including website link and/or phone number.

Information is also provided about composting and yard waste disposal opportunities. The recycling guide information can be accessed electronically on the District website. Printed copies can also be provided, upon request. The District periodically reviews this information to ensure it is complete, accurate and user-friendly. The District will also be adding the following language to the website and future brochures, "Help us keep our information up to date. If you know of a recycling opportunity that is not listed or have corrections to the listed information, please contact the Wood County Solid Waste Management District office."

## 3. **Infrastructure Inventory**

Name	Start Date	End Date	Goal
Inventory of Available Infrastructure	Existing	Ongoing	3

The District's inventory of available infrastructure is posted on the District's website. The inventory includes:

## Appendix L Minimum Required Education Programs, Outreach Plan, and General Education Requirements

Solid Waste Management and Disposal Infrastructure	Landfill facilities
Waste Reduction and Recycling Infrastructure	Curbside recycling services; Drop-off recycling sites; Composting facilities.

Currently, there are no scrap tire facilities, transfer facilities, incinerators/waste-to-energy facilities, PAYT trash collection services, recycling centers, or material recovery facilities within the District. Appendix B also includes the above information.

Residents and businesses are frequently directed to the District website to review inventory information. The District will review the infrastructure inventory list annually as this information is reviewed during the preparation of the Annual District Report (ADR). Information in the inventory such as the operational status of facilities and their addresses and contact information will be revised as necessary.

### **4. Speaker/Presenter**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Recycling Outreach Coordinator	Existing	Ongoing	3

The District employs a Recycling Outreach Coordinator to perform education and outreach activities. This position is responsible for creating and providing waste-related educational programming for youth and adults, providing landfill tours, providing technical assistance, and participating in outreach events. Presentations are tailored to the target audience taking into consideration available recycling infrastructure. In 2020, many presentations were delivered electronically due to the COVID-19 pandemic. The District will keep record of all presentations and speaking engagements, including topic, organization/audience and number attending. The District will be incorporating a survey component to its educational programs to receive feedback from the audience and/or educator.

### **B. Outreach and Marketing Plan**

The 2020 State Plan requires the District to provide education, outreach, marketing, and technical assistance regarding reduction and reuse through an outreach and marketing plan. The outreach and marketing plan will be the District's comprehensive strategy for providing education, technical assistance, and outreach to all its constituents. The outreach and marketing plan will also contain the strategy for evolving the District's environmental education programs away from traditional awareness education towards changing peoples' behaviors.

The District's goal is to get more people to participate in recycling programs, recycle more waste, and reduce contamination from the recycling stream. To do this, the District will emphasize changing residents' and businesses' behaviors, so they are not just aware

of the recycling resources available within the District but also use those resources properly (i.e., market recycling to people to increase quantities recovered).

The District must incorporate the following three components into its outreach and marketing plan.

- The District must address five target audiences (residents, schools, commercial/institutional, industrial, and communities/elected officials);
- The District must follow basic best practices when developing and selecting outreach programs; and
- The District must select an outreach priority and provide education and outreach programs to all appropriate audiences in the context of the priority using social marketing principles and tools. The District's strategy for addressing the outreach priority will be a portion of the overall outreach and marketing plan.

When selecting programs and strategies to address each audience, the District will adhere to the following best practices.

- Be familiar with the solid waste management infrastructure.
  - Understanding the available infrastructure is key to understanding how education, outreach and technical assistance can be most effective.
  - Must have a complete inventory of existing primary recycling infrastructure. See Appendix B.
- Provide outreach within the context of the infrastructure.
  - Align education, outreach and technical assistance with available recycling infrastructure.
  - If there is adequate infrastructure, focus on getting people to use it; if there is not, focus on establishing the infrastructure.
- Develop and implement outreach effectively by:
  - Understanding the different needs of different audiences;
  - Focusing on changing behavior not just creating awareness;
  - Having measurable outcomes to achieve;
  - Using a consistently and frequently repeated message; and
  - Evaluating the results to determine if the program is achieving the desired outcome.

Using the best practices described above, the District's outreach and marketing plan will consist of a combination of programs the District has historically provided, existing programs the District will modify, and new programs.

Table L-1 summarizes the District's outreach and marketing plan efforts and identifies the target audience. Some recent outreach materials are included in Appendix X.



**Table L-1. Summary of Outreach Programs and Targeted Audience**

Outreach Program	Start Date	End Date	Goal	Target Audience				
				Residents	Schools	Industrial	Institutions/ Commercial	Elected Officials
Website*	Existing	Ongoing	3, 4	X	X	X	X	X
Comprehensive Resource Guide*	Existing	Ongoing	3, 4	X			X	X
Infrastructure Inventory*	Existing	Ongoing	3, 4	X			X	X
Campaign to Reduce Drop-off Contamination	2023/2024	Ongoing – based on evaluation	4	X			X	X
Advertising/Media	Existing	Ongoing	4	X	X	X	X	X
Speaker/Presentations	Existing	Ongoing	3, 4	X	X	X	X	X
Special Events	Existing	Ongoing	4	X	X			X
Electronic Newsletter	Existing	Ongoing	4	X	X	X	X	X
Wood County Government Recycling	Existing	Ongoing	4				X	
Commercial Survey Outreach	2023	Ongoing	4				X	
Economic Development Roundtable Luncheons	2023	Ongoing	4			X		
Annual Township Meeting/Community Outreach	Existing	Ongoing	4					X
Environmental Education Loan Box Program	Existing	Ongoing	4		X			
Curriculum-based Presentations for Schools	Existing	Ongoing	4		X			

Note: \* website, comprehensive resource guide, recycling infrastructure were discussed above.

## 1. Residential Sector

Name	Start Date	End Date	Goal
Advertising/Media	Ongoing	Ongoing	Goal 1, 2, 4

The District relies heavily on its website as a means of promoting events, describing services, identifying recycling and waste disposal opportunities, and educating the public on available services and infrastructure. When necessary, the District will also purchase advertisement space in local publications.

Prior to the Covid-19 pandemic, the District purchased at least one billboard advertisement per year as part of the annual billboard artwork contest. The contest is open to all kindergarten – 7<sup>th</sup> grade students residing in Wood County. Each year, the District selects a theme, and the students are asked to design their artwork promoting this message. One winner is selected, honored during a school assembly and then the child's entry is posted on a local billboard for one month. The program was suspended in 2020 and 2021 due to the pandemic.

The Recycling Outreach Coordinator is a guest on a local radio station in Bowling Green, Ohio at least quarterly. This provides the District with an opportunity to promote recycling, upcoming events, and communicate program challenges/successes with a large audience. Occasionally, the local newspapers will cover a recycling related story, which also provides program exposure. The District has not utilized television advertisements due to the cost.

The District has a large collection of brochures and pamphlets describing various programs. The Household Recycling Guide is posted on the website and is printed as needed. Brochures providing information on locations that recycle items such as used oil, batteries, paint, tires, scrap metal, electronics, mixed office paper, books and other household items are also available. Other brochures focus on composting, local recycling programs, and the Wood County Landfill. These brochures are distributed at community events, presentations, and other locations throughout the County. The District attempts to direct residents to the website rather than print large number of brochures and pamphlets that frequently need updated.

Currently, the District does not have an official presence on social media. On occasion, the Recycling Outreach Coordinator will provide information to a community leader of a host drop-off site to share on the community's Facebook page or other social media outlet. This has been an effective tool to reach a specific audience. In the planning period, the District will evaluate The Recycling Partnership's "Recycling Social Media Kit" to help develop a social media program for the District and will recommend the toolkit to communities within the District.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Speaker/Presentations	Ongoing	Ongoing	Goal 1, 2, 3, 4

Historically, the District's primary focus for presentations has been education and public awareness about solid waste management and recycling. Some of the programs provided by the Outreach Recycling Coordinator include:

- Recycle Right – education on proper recycling
- Compost 101 – basics of backyard composting
- Home Safe Home – safe alternatives to household chemicals
- Recycled arts and crafts – upcycle common items into crafts

The District's new strategy will be to incorporate social marketing principles into these outreach efforts and focus on changing behavior rather than just creating awareness. Presentations will be tailored to a target audience, taking into account the available recycling infrastructure of that audience. For example, if a particular community has curbside, the outreach will be tailored to the proper use of curbside recycling. If the community uses drop-off recycling, the program will be geared toward the proper use of drop-offs. The same principles will be extended to school presentations and in some instances, both types of programs will need to be addressed.

Some of the historical presentations provided to the public and in the school system will likely continue. However, new presentations will be developed incorporating behavior changing goals, i.e., increase recycling and decrease contamination issues in curbside and drop-off programs. The District will track the number of presentations provided and when possible, seek feedback by use of a comment form or survey following a presentation.

Name	Start Date	End Date	Goal
Special Events	Ongoing	Ongoing	Goal 1 and 2

### **Tours**

The District provides tours of the Wood County Landfill. Groups are taken to the working face where garbage is being compacted. The District explains the construction process and the technology required to dispose of garbage safely.

### **Earth Day**

The District partners with over twenty (20) community organizations and businesses to coordinate events, volunteer opportunities and educational presentations throughout the month of April. Each partner is responsible for organizing opportunities for community involvement throughout the month, which are advertised/promoted by all involved. Examples include litter cleanups, Campus Eco Fairs, invasive species removal and educational presentations. At the end of the month, volunteers and community members are invited to a Community Earth Day Celebration which features informational displays and family activities. While Earth Day activities were not held in 2020, the District expects to continue participating in this event over the planning period.

### **Wood County Fair**

In 2020, the Wood County Fair was canceled due to the Covid-19 pandemic but returned for the 2021 season. The District utilizes its education trailer to set up a display at the fair. The display includes several brochures on recycling and proper waste disposal, and a staff member is available to answer questions about solid waste management practices in Wood County. When funding allows, advertising and promotional items are purchased to encourage residents to visit the display and promote recycling. In 2021, the District provided two interactive games geared toward educating residents on acceptable items for recycling.

The fair would be another opportunity to incorporate social marketing techniques in the District's outreach efforts. The fair is attended by over 100,000 individuals within a one-week period. It is the largest event the District participates in on an annual basis and provides significant opportunities for interaction with residents. The District could have a theme or focus for the booth promoting recycling and decreasing contamination. One way to measure the number of interactions and gather information would be to have a raffle and require a short survey to be filled out as an entry form. The survey questions could address why the resident does or does not recycle and outreach could be developed based on their responses.



The District disperses the largest quantity of brochures, household recycling guides and promotional materials during this event. The District also provides ClearStream containers and works with the Fair Board to implement additional recycling and waste reduction strategies.

### **Shredding Event**

In 2018 - 2020, the District partnered with the Wood County Department of Jobs and Family Services (JFS) to host an annual Personal Shredding Event for Wood County residents. Residents could bring up to five boxes of material to be shredded securely onsite and then recycled. In return, residents were asked to donate a toy or gift card to support children involved in the JFS system during the holidays. The District paid for the cost of the shredding contract and provided staffing and promotional assistance. The event is popular, and the District is working with JFS to host two shredding events annually in the future.

### **Other Special Events**

The District also has opportunities to participate in the Perrysburg Farmer's Market, Harrison Rally Days, the Black Swamp Arts Festival, Pemberville Fair and many other special events. In sum, the District participates in 15-20 events per year. These events provide an opportunity to interact with residents within the community. Brochures, Household Recycling Guides and promotional items are provided at all events.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Electronic Newsletter	Ongoing	Ongoing	Goal 1 and 2

The District issues a quarterly electronic newsletter called "WOOD you recycle?" that contains updates about recycling programs and upcoming events. The e-newsletter also provides staff updates and information about the landfill, composting, ocean pollution, littering, sustainability, electronics recycling, recycling right and other similar topics.

## **2. Commercial/Institutional Sector**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Wood County Government Recycling	Ongoing	Ongoing	Goal 1 and 2

The District will contact each agency annually to identify the person responsible for the recycling program. District staff will check on participation, offer help as necessary and verify the infrastructure and/or containers are sufficient. Some of the Wood County recycling is taken to the Bowling Green Recycling Center and some is collected by Republic Services. It is difficult to determine agency volumes given the method of collection.

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Commercial Survey Outreach	2023	Ongoing	Goal 1 and 2

The number of commercial recycling surveys received by the District continues to decrease. The District does not believe a marketing strategy will be effective due to the

voluntary nature of the survey. The District will attempt to reach more commercial business by direct contact, emails to businesses, attendance at Chamber of Commerce functions and networking. The District will try to assist small businesses to find recycling solutions at the Bowling Green Recycling Center or with a private provider. The District will also check-in with some of the agencies that were previously served by WLI to make sure that they have found an alternative recycling program.

### **3. Industrial Sector**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Economic Development Luncheons	Ongoing	Ongoing	Goal 1 and 2

District staff will attend the monthly economic development roundtable luncheons to network with local industry and provide technical assistance and/or grant opportunities when available.

### **4. Political Leaders**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Annual Township Meeting/Community Outreach	Ongoing	Ongoing	Goal 1 and 2

The District provides a booth at the annual Township Trustee Winter Meeting. The event is attended by county agencies, township trustees, county elected officials and some state officials. The District did not attend in 2020 due to the pandemic but expects to provide a booth in the future. This event is an excellent opportunity to network with elected officials. The District is given an opportunity to provide an update on the county's 24/7 drop-off recycling program at the meeting.

The District also has direct communication with mayors, trustees, and other officials from the host communities of the 24/7 drop-off program. The District has found that when issues arise at the sites, it is best to deal directly with local officials to understand their concerns and find solutions. The District will check-in quarterly with the 24/7 drop-off program host community leaders.

### **5. Schools**

<b>Name</b>	<b>Start Date</b>	<b>End Date</b>	<b>Goal</b>
Environmental Education Loan Box Program	Ongoing	Ongoing	Goal 1,2,3,4

Educators are always looking for new activities to introduce to their classroom. In response, several loan boxes were designed and contain material for some of the District's most popular youth presentations. Examples include Edible Landfill, Newspaper Pot Making, Litter Playground, and several others. Educators, 4-H clubs, scout groups and other organizations are also encouraged to borrow these kits to help supplement

environmental lessons. The District may also consider creating some adult education and outreach loan boxes.

Name	Start Date	End Date	Goal
Curriculum-based Presentations for Schools	Ongoing	Ongoing	Goal 1,2,3,4

The District provides a wide variety of curriculum-based presentations and activities for k-12 schools. Some of the presentations provided are listed below:

- Happy Recyclables – pre-K and K presentation.
- Litter Playground - pre-K and K presentation.
- Michael Recycle - pre-K and K presentation.
- The 3 R's - explanation and what happens to recycled materials.
- Green Shopping – how to be an eco-conscious consumer.
- Recycle Right Relay - interactive game in which students sort materials and determine if they belong in the trash, curbside/drop-off recycling, or special recycling program.
- Watershed and Biomes - impact of pollution and litter on watershed systems.
- Edible Landfills - participants build their own landfill based on liner system using food.
- Virtual presentations (synchronous and asynchronous) - available on YouTube and can be sent directly to educators.

### C. Outreach Priority

Outreach Priority	Start Date	End Date
Campaign to Decrease Contamination in the Countywide 24/7 Drop-off Program	2023/2024*	Ongoing – based on evaluation of results

\* Start date unknown due to new staff

The District's outreach priority for this planning period will be a campaign to decrease contamination at the County's drop-off recycling program locations. The marketing campaign will be directed at two adjacent 24/7 drop-off recycling locations. The locations will be selected based on a visual audit of the level of contamination and the size of the site. Preference will be given to sites with five or more bins to ensure the campaign reaches a large audience.

After the two sites have been determined, the District will research the most efficient and statistically reliable methods to perform waste audits and resident surveys at the site. The District will utilize The Recycling Partnership's recently developed toolkit for reducing contamination at drop-offs. The District will also collaborate closely with Republic Services (or current recycling provider) in performing waste audits.

In late spring, the District will perform waste audits on a representative amount of recyclables in the bins and staff will interview residents who are using the facility. The residents will be surveyed, and their recyclables inspected. Staff will have the opportunity to educate those who are misusing the facility and encourage those who are recycling



correctly. This process is expected to take place over several weeks and all findings will be documented. These findings will serve as the baseline for use in the campaign.

The next step will be reaching out to the mayor of each community to: (1) share the baseline information, (2) obtain a better understanding of the local site issues, and (3) seek their support in marketing the program on Facebook and other local social media outlets. The District will then provide outreach to the communities by a combination of targeted efforts, such as mailers, billboards, presentations, fair booth, direct contact with residents and other similar outreach. The District may try to incorporate a reward or recognition for those residents found to be "recycling right" at the site.

At the end of summer, the District will perform a follow-up waste audit and resident survey at the drop-off locations and compare the results. If contamination has been reduced and/or survey information supports changed behavior, the strategy may be extended to other communities.

The overall theme of reducing contamination will also be incorporated into many of the District's existing county-wide outreach activities, including presentations, advertisements, website posting, electronic newsletter and school activities. Most of the marketing ideas listed above will include some type of evaluation component, but the most important indicator of success will be an increase in measured recycling and a decrease in contamination.

# APPENDIX M WASTE MANAGEMENT CAPACITY ANALYSIS

In 2021, the Wood County Landfill's current capacity (utilizing the landfill's existing footprint) was estimated at approximately 3.4 years. However, Wood County is currently planning a horizontal and vertical expansion, which will extend the landfill's estimated life to over 100 years. The Evergreen Recycling and Disposal Facility Landfill has permitted disposal capacity extending beyond the 15-year planning period. Both the Wood County Landfill and the Evergreen Recycling & Disposal Facility have significant unpermitted adjacent acreage.

The two closest out-of-district facilities that currently accept Wood County generated solid waste have significant permitted available disposal capacities. These two facilities are the Hancock County Landfill (approximately 28 years disposal capacity) and the County Environmental of Wyandot Landfill (approximately 135 years disposal capacity).

There are also other facilities such as Pine Grove Regional Facility, Sunny Farms (Seneca County), Crawford County, Cherokee Run, Port Clinton, Erie County, Defiance County and Williams County that are within hauling distance of the District. Facilities in Michigan such as Vienna Junction, Carleton Farms and the Adrian Landfill are also an option. While not all these facilities are presently utilized, they are available if nearby facilities became unable to accept Wood County generated solid waste.

## A. Access to Publicly Available Landfill Facilities

Table M-1 summarizes the remaining life at the publicly available landfills in the District. The Wood County Landfill is owned and operated by the Wood County Board of Commissioners and is permitted by Ohio EPA to accept up to 499 tons of municipal solid waste per day. Evergreen Recycling and Disposal Facility is privately owned and operated by Waste Management, Inc. This facility is located at 2625 East Broadway, Northwood, Ohio. The Evergreen Recycling & Disposal Facility accepts municipal solid waste and industrial solid waste.

**Table M-1 Remaining Operating Life of Publicly Available Landfills**

Facility Name	County	State	Remaining Capacity (years)
<i>In-District</i>			
Wood County Landfill	Wood	Ohio	111*
Evergreen Recycling & Disposal	Wood	Ohio	36
<i>Out-of-District</i>			
Port Clinton Landfill Inc	Sandusky	Ohio	5
Defiance County Sanitary Landfill	Defiance	Ohio	54
Hancock County Landfill	Hancock	Ohio	28
County Environmental of Wyandot	Wyandot	Ohio	135
Sunny Farms Landfill LLC	Seneca	Ohio	7
<i>Out-of-State</i>			
Vienna Junction		Michigan	9

Sources: Ohio EPA. 2020 Facility Data Report, Table 13 - Landfill Remaining Capacities and Daily Waste Receipts Amounts - Municipal Solid Waste Landfills

Michigan Department of Environmental Quality. 2020 Report of Solid Waste Landfilled in Michigan, Table 10 Facility Capacity

\* Current expansion will increase 2020 capacity of 3 years to 111 years of capacity

The Wood County Landfill is presently planning an expansion project. The horizontal and vertical expansions will add approximately 8.9 million cubic yards of space and give the Wood County Landfill approximately 111 years of capacity based on current waste intake.

The Wood County Solid Waste Management District is committed to ensuring that adequate capacity is available for the District through the planning period and is willing to provide support to the Wood County Landfill, if needed. In turn, the Wood County Landfill is committed to providing a capacity assurance guarantee to the District through reservation of capacity throughout the planning period, if needed.

The District may provide financial support to the Wood County Landfill for waste reduction and recycling services necessary for plan implementation. Grants for cleanup projects, such as improper disposal or disaster cleanup, are also allowable under the plan. Currently, the District provides funds for future closure/post-closure costs at the Wood County Landfill, which could include costs of leachate handling facilities and treatment. The District may also assist financially in future gas-to-energy projects located at the Wood County Landfill.

The purpose of these landfill support expenditures is to ensure long-term disposal capacity for District residents in an environmentally responsible, safe, and healthy manner. However, annual expenditures for these purposes are subject to availability of funds.

## **B. Access to Captive Landfill Facilities**

Captive landfill facility refers to a privately-owned industrial or residual solid waste landfill that is used to dispose of solid waste generated exclusively by the owner of the landfill facility. There are no captive landfills in the District.



### **C. Incinerators and Energy Recovery Facilities**

There are no incinerators or resource recovery facilities located in the District. Only a negligible amount of solid waste was recorded by an out-of-district facility.

## **APPENDIX N EVALUATING GREENHOUSE GAS EMISSIONS**

### **A. Overview**

EPA created the Waste Reduction Model (WARM) to provide high-level estimates of potential greenhouse gas (GHG) emissions reductions, energy savings, and economic impacts from several different waste management practices. WARM estimates these impacts from baseline and alternative waste management practices—source reduction, recycling, anaerobic digestion, combustion, composting, and landfilling.

WARM is a tool that US EPA developed to quantify the effects of waste management decisions on greenhouse gas emissions. The model demonstrates the benefits of alternative management technologies over traditional management methods. The most recent version of WARM was made available in March 2015. A SWMD can use a different but comparable modelling program to calculate greenhouse gas emission reductions provided the model accounts for waste management and recycling activities. WARM is intended to compare municipal solid waste management scenarios. Therefore, only data from the residential/commercial sector was used.

Although the stated mission of the District does not include reducing the amount of GHG, climate change has focused attention on the greenhouse effect. The greenhouse effect is the natural process of the sun warming the Earth's surface. Greenhouse gases in the atmosphere (primarily carbon dioxide, methane, nitrous oxide, ozone, and water vapor) trap the sun's heat and cause the global temperature to rise, otherwise known as global warming. All human activity, including the things we use and the way we dispose of those things influences the amount of GHG released.

Each SWMD will run WARM twice and include the results in the solid waste management plan:

- For the first run, enter all quantities recycled in the reference year in the landfill column (for the baseline year) and for the alternative scenario, enter the quantities recycled in the tons recycled column.
- For the second run, enter the quantities of residential/commercial material recycled in the reference year in the tons recycled column (for the baseline scenario), and then enter the quantities projected to be recycled in the sixth year of the planning period in the alternative scenario column.

The intention of WARM is to illustrate the emission reductions that result from recycling and waste reduction activities. Ohio EPA recommends that SWMDs use the default settings in the WARM model to provide equivocal comparisons between greenhouse gas emission reductions. These default settings include:

- The National Average for Step 3 - Landfill Characteristics; and
- The Default Distance in Step - Waste Transport Characteristics.

SWMDs should choose "Units of Energy (million BTU)" as the Results Output in Step 5. This will allow for the additional comparisons showing the equivalent household energy savings, barrels of oil and gallons of gasoline saved.

## B. WARM Model Summary

This report shows the metric tons of carbon dioxide equivalent (MTCO<sub>2</sub>E), which describes the global-warming potential of all common greenhouse gases as an equivalent of carbon dioxide. Negative values indicate greenhouse gas savings and positive values indicate increasing emissions.

Table E-5 "Residential/Commercial Material Recovered in the Reference Year" was used to populate the detailed material data for scenario #1. The Residential/Commercial Recovery Projections by Program/Source Total for Year 6 (2028) was used to calculate the percent change from 2020 to 2028 (28%).

Each WARM material category was calculated by adjusting the reported 2020 value by +28%. Values input into each WARM scenario are summarized below in Table N-1 and N-2. Note that some material categories did not allow for entry in "tons recycled" in the Alternative Scenario. For example, yard trimmings and branches could only be entered as combusted, landfilled, composted, or anaerobically digested. Since this material was likely composted, those values were entered as such. Food waste was also entered in the "composted" category for the alternative management analysis scenario.

**Table N-1 Summary of Material Categories**

<b>Material</b>	<b>Category in WARM</b>
Appliances/ "White Goods"	Mixed Metals
Household Hazardous Waste	Omit
Used Motor Oil	Omit
Electronics	Mixed Electronics
Scrap Tires	Tires
Dry Cell Batteries	Mixed Metals
Lead-Acid Batteries	Mixed Metals
Food	Food Waste
Glass	Glass
Ferrous Metals	Aluminum Cans
Non-Ferrous Metals	Steel Cans
Corrugated Cardboard	Corrugated Containers
All Other Paper	Mixed Paper
Plastics	Mixed Plastics
Textiles	Carpet
Wood	Branches
Rubber	Mixed Recyclables
Commingled Recyclables (Mixed)	Mixed Recyclables
Yard Waste	Yard Trimmings
Other (Aggregated)	Mixed Recyclables



**Table N-2 Reference Year and Year 6 Used in the WARM Model**

<b>WARM Material</b>	<b>Reference Year 2020 (tons)</b>	<b>Projected 2029 (tons)</b>
Corrugated Containers	6,191	7,924
Mixed Paper (general)	1,677	2,147
Food Waste	8,525	10,912
Yard Trimmings	14,848	19,005
Mixed Plastics	283	362
Mixed Electronics	0.0	0
Aluminum Cans	191	245
Steel Cans	42	54
Mixed Metals	879	1,125
Glass	280	358
Carpet	8	10
Tires	1,856	2,376
Mixed Recyclables	4,482	5,737
Branches	310	397
<b>Total</b>	<b>39,571</b>	<b>50,651</b>

Source: Reference Year 2020 values from Table E-5.

Calculations: Percent Increase from 2020 to 2029 = Unadjusted Total for 2029 – Unadjusted Total 2020 / Unadjusted Total for 2020  
 (50,676 tons – 39,577 tons) / 39,577 tons = 28% increase for each WARM material

The baseline scenario in Table N-3 assumes that all the material recycled in 2020 was landfilled while the alternative scenario assumes all this material was recycled/reduced. In 2020, the estimated energy saved through recycling was 249,804 million BTU.

This is equivalent to:

- Conserving 2,726 Households' Annual Energy
- Conserving 42,995 Barrels of Oil
- Conserving 2,073,883 Gallons of Gasoline

Table N-4 presents a summary of the comparison between the GHG emissions offset between 2020 and 2036 through recycling/reducing waste. Note that yard waste, food waste, and branches were input into the composted column as they could not be entered as recycled. Between 2020 and 2036, the estimated energy saved through recycling will be 170,047 million BTU.

This is equivalent to:

- Conserving 1,856 Households' Annual Energy
- Conserving 29,268 Barrels of Oil
- Conserving 1,411,739 Gallons of Gasoline

Table N-3 Reference Year (2020) WARM Model Results

WARM

File

HomeData Entry - (2036projection.warm)Data Entry - (ref year.warm)ReportReport

Waste Reduction Model (WARM)  
Summary Report (Energy)

GHG Emissions Waste Management Analysis for **Wood County SWMD**  
Prepared by:  
Project Period for this Analysis: 1/1/2020 to 12/31/2020

Material	Baseline Scenario						Alternative Scenario						Change (Alt-Base) million BTU	
	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total million BTU	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested		Total million BTU
Corrugated Containers	0.00	6191.00	0.00	N/A	N/A	-1291.45	0.00	6191.00	0.00	0.00	N/A	N/A	-93504.20	-92212.75
Mixed Paper (general)	0.00	1677.00	0.00	N/A	N/A	-269.87	0.00	1677.00	0.00	0.00	N/A	N/A	-34486.03	-34196.16
Food Waste	N/A	8525.00	0.00	0.00	0.00	-21.59	0.00	N/A	0.00	0.00	8525.00	0.00	6241.55	6263.14
Yard Trimmings	N/A	0.00	14848.00	0.00	0.00	-39164.21	N/A	N/A	0.00	0.00	14848.00	0.00	3875.33	43039.54
Branches	N/A	0.00	310.00	0.00	0.00	-817.68	N/A	N/A	0.00	0.00	310.00	0.00	80.91	898.59
Mixed Plastics	0.00	283.00	0.00	N/A	N/A	75.92	0.00	283.00	0.00	0.00	N/A	N/A	-9911.41	-9987.33
Aluminum Cans	0.00	191.00	0.00	N/A	N/A	51.24	0.00	191.00	0.00	0.00	N/A	N/A	-29178.01	-29229.25
Steel Cans	0.00	42.00	0.00	N/A	N/A	11.27	0.00	42.00	0.00	0.00	N/A	N/A	-838.58	-849.85
Mixed Metals	0.00	879.00	0.00	N/A	N/A	235.81	0.00	879.00	0.00	0.00	N/A	N/A	-58497.34	-58733.15
Glass	0.00	280.00	0.00	N/A	N/A	75.12	0.00	280.00	0.00	0.00	N/A	N/A	-595.11	-670.23
Carpet	0.00	8.00	0.00	N/A	N/A	2.15	0.00	8.00	0.00	0.00	N/A	N/A	-171.52	-173.66
Tires	0.00	1856.00	0.00	N/A	N/A	497.91	0.00	1856.00	0.00	0.00	N/A	N/A	-6686.37	-7184.28
Mixed Recyclables	0.00	4482.00	0.00	N/A	N/A	-240.42	N/A	4482.00	0.00	0.00	N/A	N/A	-67009.23	-66768.81
						-40875.81							-290680.01	

a) For explanation of methodology, see the [EPA WARM Documentation](#).

b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.

Total Change in Energy Use (million BTU): **-249904.20**

This is equivalent to...

- Conserving **2726** Households' Annual Energy
- Conserving **42995** Barrels of Oil
- Conserving **2073883** Gallons of Gasoline

SummaryAnalysisProduction + EOLCharts

**Table N-4 WARM Model Results Change in BTU from 2020 to 2036 from Residential/Commercial Recycling**

WARM

File

Home

\*Data Entry - (2036projection.warm)

Data Entry - (ref year.warm)

Report

Report

Report

Waste Reduction Model (WARM)

Summary Report (Energy)

GHG Emissions Waste Management Analysis for

Prepared by:

Project Period for this Analysis: 1/1/2020 to 1/1/2036

Material	Baseline Scenario						Alternative Scenario						Change (Alt-Base) million BTU	
	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total million BTU	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested		Total million BTU
Corrugated Containers	6191.00	0.00	0.00	N/A	N/A	-93504.20	0.00	7924.00	0.00	0.00	N/A	N/A	-119678.12	-26173.93
Mixed Paper (general)	1677.00	0.00	0.00	N/A	N/A	-34486.03	0.00	2147.00	0.00	0.00	N/A	N/A	-44151.17	-9665.14
Food Waste	N/A	0.00	0.00	8525.00	0.00	6241.55	0.00	N/A	0.00	10912.00	0.00	0.00	-24362.18	-30603.73
Yard Trimmings	N/A	0.00	0.00	14848.00	0.00	3875.33	N/A	N/A	0.00	19005.00	0.00	0.00	-50129.03	-54004.36
Branches	N/A	0.00	0.00	310.00	0.00	80.91	N/A	N/A	0.00	397.00	0.00	0.00	-1047.16	-1128.07
Mixed Plastics	283.00	0.00	0.00	N/A	N/A	-9911.41	0.00	362.00	0.00	0.00	N/A	N/A	-12678.20	-2766.79
Aluminum Cans	191.00	0.00	0.00	N/A	N/A	-29178.01	0.00	245.00	0.00	0.00	N/A	N/A	-37427.29	-8249.28
Steel Cans	42.00	0.00	0.00	N/A	N/A	-638.58	0.00	54.00	0.00	0.00	N/A	N/A	-1078.17	-239.59
Mixed Metals	879.00	0.00	0.00	N/A	N/A	-58497.34	0.00	1125.00	0.00	0.00	N/A	N/A	-74868.61	-16371.27
Glass	290.00	0.00	0.00	N/A	N/A	-595.11	0.00	358.00	0.00	0.00	N/A	N/A	-760.90	-165.78
Carpet	8.00	0.00	0.00	N/A	N/A	-171.52	0.00	10.00	0.00	0.00	N/A	N/A	-214.40	-42.88
Tires	1856.00	0.00	0.00	N/A	N/A	-6686.37	0.00	2376.00	0.00	0.00	N/A	N/A	-8559.70	-1873.34
Mixed Recyclables	4482.00	0.00	0.00	N/A	N/A	-67009.23	N/A	5737.00	0.00	0.00	N/A	N/A	-85772.41	-18763.18
						-290680.01							-460727.34	

a) For explanation of methodology, see the [EPA WARM Documentation](#)

b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.

Total Change in Energy Use (million BTU): -170047.33

This is equivalent to...

Conserving 1856 Households' Annual Energy

Conserving 29268 Barrels of Oil

Conserving 1411739 Gallons of Gasoline

Summary

Analysis

Production + EOL

Charts



## APPENDIX O FINANCIAL PLAN

Appendix O reviews the funding mechanisms available to the District, identifies those that are currently in place, and projects anticipated revenues from these resources for each year of the planning period. This section also reviews historical and projected plan expenditures and provides a detailed explanation for each expense category.

The District is committed to implementing planned strategies, programs and/or activities in a cost-effective manner. The budget tables prepared for this plan update demonstrate that the District will have adequate funding through the planning period to implement the solid waste management plan.

Budget projections are not a binding commitment by the District to expend a specific amount of money on a particular strategy, facility, program and/or activity. The District will review and revise the budget as needed, with input from the Wood County Board of Commissioners and Policy Committee, to ensure effective implementation of plan strategies, programs and/or activities.

The District will expend solid waste district funds in accordance with the ten allowable uses prescribed in ORC 3734.57(G).

### A. Funding Mechanisms and Revenue Generated

#### 1. Disposal Fee

**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	
2016	\$2	\$4	\$2	\$182,575	\$400,657	\$11,834	\$595,067
2017	\$2	\$4	\$2	\$180,100	\$362,894	\$11,751	\$554,744
2018	\$2	\$4	\$2	\$193,447	\$342,568	\$9,437	\$545,452
2019	\$2	\$4	\$2	\$189,798	\$320,192	\$9,421	\$519,411
<b>2020</b>	<b>\$2</b>	<b>\$4</b>	<b>\$2</b>	<b>\$206,246</b>	<b>\$256,671</b>	<b>\$8,612</b>	<b>\$471,529</b>
2021	\$2	\$4	\$2	\$210,085	\$270,664	\$7,380	\$488,129
2022	\$2	\$4	\$2	\$216,387	\$251,718	\$6,716	\$474,821
2023	\$2	\$4	\$2	\$222,879	\$234,098	\$6,112	\$463,088
2024	\$2	\$4	\$2	\$229,565	\$217,711	\$5,561	\$452,837
2025	\$2	\$4	\$2	\$236,452	\$202,471	\$5,061	\$443,984
2026	\$2	\$4	\$2	\$243,546	\$188,298	\$4,605	\$436,449
2027	\$2	\$4	\$2	\$250,852	\$175,117	\$4,191	\$430,160
2028	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2029	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2030	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2031	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2032	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2033	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2034	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2035	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2036	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2037	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2038	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050
2039	\$2	\$4	\$2	\$258,377	\$162,859	\$3,814	\$425,050

**Table O-1b: Historical Revenue Analysis (Revenue \$)**

Annual change in revenue received (\$)				Annual percentage change in revenue received (%)			
Year	In-District	Out-of-District	Out-of-State	Year	In-District	Out-of-District	Out-of-State
2016	-	-	-	2016	-	-	-
2017	-\$2,476	-\$37,763	-\$83	2017	-1.4%	-9.4%	-0.7%
2018	\$13,347	-\$20,326	-\$2,314	2018	7.4%	-5.6%	-19.7%
2019	-\$3,649	-\$22,376	-\$16	2019	-1.9%	-6.5%	-0.2%
<b>2020</b>	<b>\$16,448</b>	<b>-\$63,522</b>	<b>-\$808</b>	<b>2020</b>	<b>8.7%</b>	<b>-19.8%</b>	<b>-8.6%</b>
2021	\$3,839	\$13,994	-\$1,232	2021	1.9%	5.5%	-14.3%
<b>Avg.</b>	<b>\$5,502</b>	<b>-\$25,999</b>	<b>-\$891</b>	<b>Avg.</b>	<b>2.9%</b>	<b>-7.2%</b>	<b>-8.7%</b>

The largest source of revenue for the District is disposal fees. Disposal fees are collected on each ton of solid waste disposed at landfills in the District. The only two landfills located in the District are the Wood County Landfill and Evergreen Recycling & Disposal Facility. The District's disposal fees are currently \$2.00 per ton in-district, \$4.00 per ton out-of-district and \$2.00 per ton out-of-state. In 2020, the District received \$471,529 in disposal fees.

The Wood County Landfill has experienced a steady increase of in-district tonnage disposal over the past three years, while Evergreen Recycling & Disposal Facility has experienced a significant decrease of out-of-district and out-of-state tonnage over that same period. Since Evergreen is a much larger facility than the Wood County Landfill, the facility's decreasing tonnage has a greater impact on overall disposal fees. As a result, the District's annual disposal fee revenue has decreased by 21% between 2016-2020. In 2021, the District experienced an increase of 3.5% over 2020, mainly attributable to an increase in out-of-district tonnage.

Due to decreasing disposal fees and fluctuating tonnage, the District's revenue estimates are conservative. For 2023, the District projects a 3% increase in in-district disposal fees, 7% decrease in out-of-district disposal fees and a 9% decrease for out-of-state disposal fees. The District will apply the increase/decrease over each fee category for the first six years of the planning period and will hold the amounts constant for the remaining years. The percentage increase/decrease was based on the average percent change in each category over 2016-2021.

The District anticipates the \$2.00/\$4.00/\$2.00 waste disposal fee structure will provide sufficient revenue to implement plan activities through the planning period. Although the District has no plans to adjust the disposal fee schedule during the planning period, it reserves the right to do so, if necessary.

## **2. Generation Fee**

The District does not currently have a generation fee. However, the District reserves the right to do so during the planning period if needed. Table O-2: Generation Fee Schedule and Revenue, has been omitted.



### 3. Designation Fees

**Table O-3 Designation Fee Schedule and Revenue**

Year	Designation Fee Schedule (\$ per ton)	Total Designation Fee Revenue (\$)
2016	\$2.00	\$67,629
2017	\$2.00	\$71,068
2018	\$2.00	\$79,005
2019	\$2.00	\$74,509
2020	\$2.00	\$71,100
2021	\$2.00	\$75,128
2022	\$2.00	\$76,630
2023	\$2.00	\$78,163
2024	\$2.00	\$79,726
2025	\$2.00	\$81,320
2026	\$2.00	\$82,947
2027	\$2.00	\$84,606
2028	\$2.00	\$86,298
2029	\$2.00	\$86,298
2030	\$2.00	\$86,298
2031	\$2.00	\$86,298
2032	\$2.00	\$86,298
2033	\$2.00	\$86,298
2034	\$2.00	\$86,298
2035	\$2.00	\$86,298
2036	\$2.00	\$86,298
2037	\$2.00	\$86,298
2038	\$2.00	\$86,298
2039	\$2.00	\$86,298

**Table O-3b Designation Fee Schedule and Revenue Historical Analysis**

Historical Revenue Analysis					
Average revenue received (\$)	Annual change in revenue received		Annual Percentage Change in Revenue Received		Average percentage change in revenue received
	Year	Revenue	Year	%	%
\$73,073	2016	-	2016	-	2%
	2017	\$3,439	2017	5%	
	2018	\$7,937	2018	11%	
	2019	-\$4,496	2019	-6%	
	2020	-\$3,409	2020	-5%	
	2021	\$4,027	2021	6%	

The District implemented a designation contract fee of \$2.00 per ton for municipal solid waste on October 1, 2011. Agreements were established with designated transfer facilities and landfills for a period of five years. These agreements ensure that all municipal solid waste generated in Wood County, whether disposed within or outside the County, support state-mandated programs and the solid waste management plan. The agreements with existing facilities were renewed on October 1, 2016 and then again on October 1, 2021 for an additional five-year term.

The 2017 Plan projected the District would receive \$75,000 annually for the planning period. Although the District only received \$71,100 in 2020, in 2018 the District received \$79,005. The District projects a 2% increase in designation fees for the first six years of the



planning period with the remaining years held constant. The percentage increase was calculated based on the average percent change over 2016-2021.

The District believes the \$2 per ton fee is sufficient to supplement disposal fee revenue and maintain programming costs throughout the planning period. Thus, the District plans to maintain the designation fee at \$2 per ton through the planning period. However, under the current designation agreements, the District has the authority to increase, or decrease, the fee amount. The current agreements also have an option to be renewed for an additional five-year term.

#### **4. Debt/Loans**

Currently, the District has no debt and does not foresee the necessity of a loan to support overhead or programming during the planning period. If the District would need a loan, the District would be required to ratify a new budget prior to securing the debt. Table O-4: Debt, has been omitted.

#### **5. Other Sources of District Revenue**

**Table O-5 Other Sources of Revenue**

<b>Year</b>	<b>Auction Revenue</b>	<b>Salary Reimbursement</b>	<b>Miscellaneous</b>	<b>Total Other Revenue</b>
2016	\$1,043	\$0	\$0	\$1,043
2017	\$1,015	\$0	\$0	\$1,015
2018	\$2,074	\$0	\$0	\$2,074
2019	\$133	\$0	\$0	\$133
2020	\$0	\$16,116	\$7,860	\$23,976
2021	\$36	\$16,368	\$0	\$16,403
2022	\$1,066	\$16,695	\$0	\$17,761
2023	\$1,066	\$17,029	\$0	\$18,095
2024	\$1,066	\$17,370	\$0	\$18,436
2025	\$1,066	\$17,717	\$0	\$18,783
2026	\$1,066	\$18,071	\$0	\$19,138
2027	\$1,066	\$18,433	\$0	\$19,499
2028	\$1,066	\$18,801	\$0	\$19,868
2029	\$1,066	\$18,801	\$0	\$19,868
2030	\$1,066	\$18,801	\$0	\$19,868
2031	\$1,066	\$18,801	\$0	\$19,868
2032	\$1,066	\$18,801	\$0	\$19,868
2033	\$1,066	\$18,801	\$0	\$19,868
2034	\$1,066	\$18,801	\$0	\$19,868
2035	\$1,066	\$18,801	\$0	\$19,868
2036	\$1,066	\$18,801	\$0	\$19,868
2037	\$1,066	\$18,801	\$0	\$19,868
2038	\$1,066	\$18,801	\$0	\$19,868
2039	\$1,066	\$18,801	\$0	\$19,868

**Table O-5a Historical Analysis of Other Sources of Revenue**

Year	Auction Revenue	Salary Reimbursement	Miscellaneous
<b>Annual Change in Revenue Received</b>			
2016	--	--	--
2017	-\$28	\$0	\$0
2018	\$1,059	\$0	\$0
2019	-\$1,941	\$0	\$0
2020	-\$133	\$16,116	\$7,860
2021	\$36	\$252	-\$7,860
<b>Annual Percentage Change in Revenue Received</b>			
2016	--	--	--
2017	-3%	--	--
2018	104%	--	--
2019	-94%	--	--
2020	-100%	--	--
2021	--	2%	-100%
<b>Average Percentage Change in Revenue Received</b>			
	-23%	2%	-100%
<b>Average Revenue Received</b>			
	\$717	\$5,414	\$1,310

In addition to disposal and designation fees, the District receives revenue from two additional sources:

- Wood County Internet Auction. This category includes revenue from the sale of obsolete and/or surplus items and equipment and generates minimal revenue. No auction was held in 2020 due to the pandemic, but the District expects the auctions to resume during the planning period. The average amount of auction revenue during 2016-2019 was \$1,066. The District projects \$1,066 in auction revenue for the first six years of the planning period with the remaining years held constant.
- Salary Reimbursement from Wood County Landfill. Beginning in 2020, the District received an amount equal to 25% of the District Office Manager's salary and benefits for administrative/fiscal work provided throughout the year to the Wood County Landfill. Since salary increases have varied over the years, the personnel expense line item was increased by 2% for the first six years of the planning period with the remaining years held constant. The District used 2021 as the base amount for the 2% annual increases.

## 6. Summary of District Revenues

**Table O-6 Total Revenue**

Year	Disposal Fees	Generation Fees	Designation Fees	Other Revenue	Total Revenue
2016	\$595,067	\$0	\$67,629	\$1,043	\$663,739
2017	\$554,744	\$0	\$71,068	\$1,015	\$626,828
2018	\$545,452	\$0	\$79,005	\$2,074	\$626,531
2019	\$519,411	\$0	\$74,509	\$133	\$594,053
2020	\$471,529	\$0	\$71,100	\$23,976	\$566,605
2021	\$488,129	\$0	\$75,128	\$16,403	\$579,660
2022	\$474,821	\$0	\$76,630	\$17,761	\$569,212



Year	Disposal Fees	Generation Fees	Designation Fees	Other Revenue	Total Revenue
2023	\$463,088	\$0	\$78,163	\$18,095	\$559,346
2024	\$452,837	\$0	\$79,726	\$18,436	\$550,999
2025	\$443,984	\$0	\$81,320	\$18,783	\$544,088
2026	\$436,449	\$0	\$82,947	\$19,138	\$538,534
2027	\$430,160	\$0	\$84,606	\$19,499	\$534,265
2028	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2029	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2030	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2031	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2032	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2033	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2034	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2035	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2036	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2037	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2038	\$425,050	\$0	\$86,298	\$19,868	\$531,216
2039	\$425,050	\$0	\$86,298	\$19,868	\$531,216

Overall total revenue is projected to decrease slightly over the planning period, mainly attributed to a decreasing disposal fee estimate despite minor increases in designation fees and other revenue.

## B. Cost of Implementing Plan

The District has estimated the costs to implement the programs and activities identified throughout the plan. Table O-7 provides actual expenses for years 2016 through 2021 and provides projections for 2022 through 2039. Slight bumps in expenses over the planning period are attributed to three-year periods during which a plan update is assumed.

A large portion of the budget is dedicated to the District's per capita incentive payment program to support curbside and drop-off residential recycling programming. Local governments are provided \$1.50 per person per year for curbside and \$1.00 per person per year for drop-off recycling. Another major expense is the cost of a private hauling contract with Republic Services, which provides transportation and processing of recyclables collected at the 12 full-time rural residential drop-off recycling sites. The current contract expires June 2023 and a request for proposals process will occur in late 2022 or early 2023.

The District reviewed historical data, anticipated changes to programs and inflation to project the budget over the planning period. The District does not expect programming and activities to change significantly, therefore projected expenses for 2022 through 2039 remain fairly constant.

The District will budget additional funds for Advertisement/Promotion to support the marketing strategy discussed in Appendix L. An inflationary increase of 1.9%<sup>25</sup> was applied to some expenditures to reflect future costs. The District calculated the inflation rate using the average inflation rate over 2017-2020.

<sup>25</sup> US Inflation; Annual Rate, the Bureau of Labor Statistics CPI. (2017-2020)



The District provides the majority of support and services through contracts and grants. Payments are made as fees for service, therefore there is no breakdown of individual costs as would occur if the District owned facilities and conducted activities directly.

Also listed are several optional programs not currently funded but could be reinstated if the District determines a need and funds become available, such as grants for equipment and cleanups. Additionally, some other programs are adjusted in amount based on availability of funds, including closure/post-closure care costs. The programming necessary to meet State Plan goals will have priority. The District will adjust budget expenditures based on revenue. To maintain fiscal stability, the District strives to keep at least one budget year of cash reserve to be available for unforeseen events.

**Figure O-1. Cost of Implementing Plan During the Planning Period**

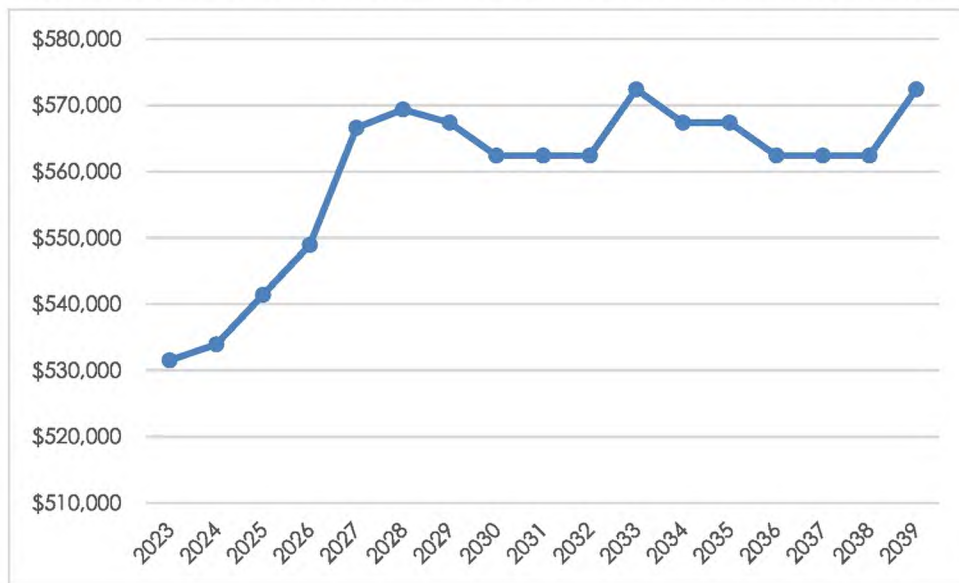


Figure O-1 provides a visual representation of the costs of implementing the plan over the planning period, with slight increases attributable to updates to this plan.



Table O-7 Expenses

Line #	Category/Program	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
1	1. Plan Monitoring/Prep.	\$4,695	\$1,781	\$247	\$30	\$0	\$15,959	\$10,000	\$10,000	\$5,000	\$5,000	\$5,000	\$15,000	\$10,000	\$10,000	\$5,000	\$5,000	\$5,000	\$15,000	\$10,000	\$10,000	\$5,000	\$5,000	\$5,000	\$15,000
1.a	a. Plan Preparation	\$4,687	\$201			\$0	\$15,959	\$5,000	\$5,000				\$10,000	\$5,000	\$5,000				\$10,000	\$5,000	\$5,000				\$10,000
1.b	b. Plan Monitoring	\$8	\$1,580	\$247	\$30	\$0	\$0	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
1.c	c. Other																								
2	2. Plan Implementation	\$616,922	\$635,712	\$622,419	\$613,426	\$526,738	\$520,545	\$509,411	\$521,527	\$528,914	\$536,388	\$543,950	\$551,602	\$559,346	\$557,396	\$557,396	\$557,396	\$557,396	\$557,396	\$557,396	\$557,396	\$557,396	\$557,396	\$557,396	\$557,396
2.a	a. District Administration	\$139,366	\$129,609	\$184,255	\$140,644	\$126,068	\$127,855	\$130,361	\$132,916	\$135,521	\$138,177	\$140,885	\$143,646	\$146,462	\$146,462	\$146,462	\$146,462	\$146,462	\$146,462	\$146,462	\$146,462	\$146,462	\$146,462	\$146,462	\$146,462
2.a.1	Personnel	\$74,048	\$77,453	\$70,889	\$66,012	\$73,770	\$76,520	\$78,051	\$79,612	\$81,204	\$82,828	\$84,484	\$86,174	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898
2.a.2	Office Overhead	\$61,202	\$52,156	\$113,366	\$74,632	\$52,298	\$51,335	\$52,310	\$53,304	\$54,317	\$55,349	\$56,400	\$57,472	\$58,564	\$58,564	\$58,564	\$58,564	\$58,564	\$58,564	\$58,564	\$58,564	\$58,564	\$58,564	\$58,564	\$58,564
2.a.3	Other	\$4,116																							
2.b	b. Facility Operation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.1	MRF/Recycling Center																								
2.b.2	Compost																								
2.b.3	Transfer																								
2.b.4	Special Waste																								
2.c	c. Landfill Closure/Post-Closure	\$150,000	\$150,000	\$125,000	\$80,000	\$30,000	\$50,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
2.d	d. Recycling Collection	\$206,748	\$213,849	\$202,962	\$272,447	\$287,113	\$261,913	\$262,000	\$265,000	\$268,000	\$271,000	\$274,000	\$277,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000
2.d.1	Curbside	\$74,369	\$74,369	\$79,810	\$116,105	\$111,554	\$77,759	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000	\$80,000
2.d.2	Drop-off	\$132,379	\$139,480	\$123,152	\$156,342	\$175,559	\$183,604	\$182,000	\$185,000	\$188,000	\$191,000	\$194,000	\$197,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000	\$200,000
2.d.3	Combined Curbside/Drop-off																								
2.d.4	Multi-family																								
2.d.5	Business/Institutional																								
2.d.6	Other						\$550																		
2.e	e. Special Collections	\$0	\$0	\$0	\$750	\$390	\$0	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550	\$550
2.e.1	Tire Collection																								
2.e.2	HHW Collection																								
2.e.3	Electronics Collection																								
2.e.4	Appliance Collection																								
2.e.5	Other Collection Drives	\$0	\$0	\$0	\$750	\$390	\$0	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
2.f	f. Yard Waste/Other Organics																								
2.g	g. Education/Awareness	\$81,123	\$88,877	\$86,079	\$80,882	\$76,100	\$79,299	\$83,051	\$89,612	\$91,394	\$93,211	\$95,065	\$96,956	\$98,884	\$98,884	\$98,884	\$98,884	\$98,884	\$98,884	\$98,884	\$98,884	\$98,884	\$98,884	\$98,884	\$98,884
2.g.1	Education Staff	\$74,047	\$77,453	\$70,889	\$66,012	\$73,770	\$76,520	\$78,051	\$79,612	\$81,204	\$82,828	\$84,484	\$86,174	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898	\$87,898
2.g.2	Advertisement/Promotion	\$7,076	\$11,424	\$15,190	\$14,870	\$2,330	\$2,779	\$5,000	\$10,000	\$10,190	\$10,384	\$10,581	\$10,782	\$10,987	\$10,987	\$10,987	\$10,987	\$10,987	\$10,987	\$10,987	\$10,987	\$10,987	\$10,987	\$10,987	\$10,987
2.g.3	Other																								
2.h	h. Recycling Market Development	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.h.1	General Market Development Activities																								
2.h.2	ODNR pass-through grant																								
2.i	i. Service Contracts	\$38,729	\$50,280	\$19,335	\$36,742	\$5,658	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.j	j. Feasibility Studies																								
2.k	k. Waste Assessments/Audits																								
2.l	l. Dump Cleanup	\$956	\$3,097	\$2,288	\$1,961	\$1,409	\$1,478	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
2.m	m. Litter Collection/Education																								
2.n	n. Emergency Debris Management																								
2.o	o. Loan Payment																								
2.p	p. Other			\$2,500																					
3	3. Health Dept. Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4	4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.a	a. Maintaining Roads																								
4.b	b. Maintaining Public Facilities																								
4.c	c. Providing Emergency Services																								
4.d	d. Providing Other Public Services																								
5	5. Well Testing																								
6	6. Out-of-State Waste Inspection																								
7	7. Open Dump, Litter Law Enforcement	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7.a	a. Heath Departments																								
7.b	b. Local Law Enforcement																								
7.c	c. Other																								
8	8. Heath Department Training																								
9	9. Municipal/Township Assistance	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads																								
9.b	b. Maintaining Public Facilities																								
9.c	c. Providing Emergency Services																								
9.d	d. Providing other Public Services																								
10	10. Compensation to Affected Community (ORC Section 3734.35)																								
***Total Expenses***		\$621,617	\$637,493	\$622,666	\$613,456	\$526,738	\$536,504	\$519,411	\$531,527	\$533,914	\$541,388	\$548,950	\$566,602	\$569,346	\$567,396	\$562,396	\$562,396	\$562,396	\$572,396	\$567,396	\$567,396	\$562,396	\$562,396	\$562,396	\$572,396



A detailed explanation for each expense category is provided below. Where noted, a percentage or flat annual increase in cost was added to the planning period year.

## **1 *Plan Monitoring/Preparation***

### **1.a Plan Preparation**

2016 — 2021: Actual expenses for developing the Solid Waste Management Plan. Costs include staff salary/benefits based on hours dedicated to plan preparation, payment for consulting during plan preparation, and miscellaneous expenses such as supplies and mailing postage.

2022— 2039: This includes expenses for consultant to prepare plan update. Every five years, costs have been included for an update to the plan (\$10,000 for first year, \$5,000 the second year and \$5,000 for third year during preparation).

### **1.b Plan Monitoring**

2016 — 2021: Includes actual expenses associated with preparing the annual district report and a minimal amount budgeted for supplies and postage.

2022— 2039: Projected with an additional \$5,000 annually.

### **1.c Other**

No expenses are budgeted for this category.

## **2 *Plan Implementation***

### **2.a District Administration**

#### **2.a.1 Personnel**

2016-2021: District staff include the Assistant Wood County Administrator (40% of salary), Office Manager, and Recycling Outreach Coordinator. Because the entire staff is involved in various aspects of both administration and education, the total cost of salaries, Medicare, Ohio Public Employment Retirement System (OPERS), workers' compensation, and insurance benefits, are split equally between District Administration Personnel and Education/Awareness Staff. (Category 2.g.1).

2022-2039: A cost of living salary increase of 2% was added each year during the first six years of the planning period; values were held constant after the 6<sup>th</sup> year in the planning period. The standard amount of 2% was used as Wood County does not typically provide salary increases based on inflation.

#### **2.a.2 Office Overhead**

2016-2021: This category includes expenses for supplies, equipment purchases, equipment repairs/maintenance/service, travel, and administrative advertising. Equipment costs increased in 2018 and 2019 with the purchase of several 8-yard containers for the residential 24/7 permanent recycling drop-off program. The



District applied a 1.9% inflationary rate to these expenses for the first six years of the planning period with the remaining years held constant.

2022-2039: The District does not expect to see much deviation from the current expenses, therefore a \$50,000.00 annual cost, based on 2020 and 2021 costs, is projected throughout the planning period.

2.a.3 Other

No expenses are budgeted for this category.

2.b Facility Operation

The District does not own or operate a MRF/recycling center, compost, transfer, or special waste facility. No expenses are budgeted at this time.

2.c Landfill Closure/Post-Closure

The District is projecting a \$30,000 contribution annually but will re-evaluate whether to apply a greater amount at the end of each year based on cash balance. The Landfill has been able to direct funds into the closure/post-closure fund in recent years.

2.d Recycling Collection

2.d.1 Curbside

In the beginning of 2020, there were six municipalities within the District that offered curbside recycling collection for their residents. These local governments received a \$1.50 per capita payment, based on current census numbers. By mid-2021, two municipalities discontinued their program, thus losing eligibility for the per capita payment. For the planning period, \$80,000 was estimated for this expense.

2.d.2 Drop-off

This category includes a \$1.00 per capita payment for municipalities to assist with drop-off costs expenses with a slight increase projected in 2022 due to updated census numbers.

Private contract expenses are also budgeted in this category to fund the current drop-off program contract with Republic Services. The contract involves collection, transportation and processing of recyclables from 12 rural residential recycling sites throughout the county. The current contract expires June 2023 and a request for proposals process will take place sometime in late 2022 or early 2023. For cost estimating, the District added an annual \$3,000 increase for the contracts during the first six years of the planning period; values were held constant after the 6<sup>th</sup> year in the planning period.

The District does not currently fund combined curbside/drop-off, multi-family, or business/institutional recycling collection. Educational outreach and resources are provided upon request. No expenses are budgeted at this time.

- 2.d.3 Combined Curbside/Drop-off  
No expenses are budgeted for this category.
- 2.d.4 Multi-family  
No expenses are budgeted for this category.
- 2.d.5 Business/Institutional  
No expenses are budgeted for this category.
- 2.d.6 Other  
No expenses are budgeted for this category.
- 2.e Special Collections  
The District does not directly fund tire, HHW, or electronics/appliances collections. However, through educational outreach and an expansive A-Z household recycling directory maintained on the District website, residents can obtain information for proper disposal of materials.
- 2.e.1 Tire Collection  
No expenses are budgeted for this category.
- 2.e.2 HHW Collection  
No expenses are budgeted for this category.
- 2.e.3 Electronics Collection  
No expenses are budgeted for this category.
- 2.e.4 Appliance Collection  
No expenses are budgeted for this category.
- 2.e.5 Other Collection Drives  
The District has co-sponsored an annual personal paper shredding event at the Wood County Job and Family Services since 2018. The District pays the cost of the contracted shredding services and has projected this expense throughout the planning period. Note that \$375 for 2018 was billed in 2019. In 2022, the District intends to sponsor two events each year and the cost has increased. The District projects \$2,500 for this expense for the planning period.
- 2.f Yard Waste/Other Organics  
No expenses are budgeted for this category.
- 2.g Education/Awareness
- 2.g.1 Education Staff  
The Recycling Outreach Coordinator's main task is providing educational presentations and outreach. However, the Assistant County Administrator (40% of salary), Office Manager, and Outreach Coordinator work as a team in developing and administering the overall programming of the District.

The total cost of salaries, Medicare, OPERS, workers' compensation, and insurance benefits, is split equally between Education/Awareness Staff and District Administration Personnel (Category 2.a.1).

For the first six years of the planning period, a 2% annual increase was assumed; values were held constant after the sixth year in the planning period. The standard amount of 2% was used as Wood County does not typically provide salary increases based on inflation.

2.g.2 Advertisement/Promotion

The District purchases promotional items for distribution at events and educational presentations. Advertisement and printing expenses increased for 2017 through 2019 with the promotion of the 24/7 drop-off locations and printing of educational labeling for the drop-off containers. The District projects additional costs in this category due to the new social marketing strategy required by Goal 4. The budget amount was increased to \$10,000 in 2023 and a 1.9% inflationary increase was applied for the first six years of the planning period with the remaining years held constant.

2.g.3 Other

No expenses are budgeted for this category.

2.h Recycling Market Development

2.h.1 General Market Development Activities

No expenses are budgeted for this category.

2.h.2 Ohio EPA pass-through grant

If a local entity's project is eligible for funding, applies for an Ohio EPA Market Development Grant, and funds are awarded, the District will be the fiscal manager for the grant. The reimbursement expenses will be recorded in this category; however, the District is not including projected expenses for the planning period.

2.i Service Contracts

Previously the District dedicated funding towards certain Wood County Landfill engineering expenses and projections were made through 2031. As of January 1, 2021, those expenses are paid through the Landfill's operating budget. No expenses are projected through the planning period.

2.j Feasibility Studies

No expenses are budgeted for this category.

2.k Waste Assessments/Audits

No expenses are budgeted for this category.



**2.l Dump Cleanup**

The Wood County Landfill holds an annual "Spring Township Cleanup"; during a limited time, road-side debris collected on township roads is accepted at no cost to the local government. The disposal cost is charged to the Solid Waste Management District and the total amount due is remitted to the Landfill. The cost depends on the amount of disposal and the disposal rate during that time. The projected expense for the planning period is \$1,500.00 per year.

**2.m Litter Collection/Education**

No expenses are budgeted for this category.

**2.n Emergency Debris Management**

No expenses are budgeted for this category.

**2.o Loan Payment**

No expenses are budgeted for this category.

**2.p Other**

No expenses are budgeted for this category.

**3 *Health Dept. Enforcement***

The Wood County Health District no longer offers a solid waste inspection/enforcement program. No expenses are budgeted for this category.

**4 *County Assistance***

No expenses are budgeted for this category.

**5 *Well Testing***

No expenses are budgeted for this category.

**6 *Out-of-State Waste Inspection***

No expenses are budgeted for this category.

**7 *Open Dump, Litter Law Enforcement*****7.a Heath Departments**

No expenses are budgeted for this category.

**7.b Local Law Enforcement**

No expenses are budgeted for this category.

**7.c Other**

No expenses are budgeted for this category.

**8 Heath Department Training**

No expenses are budgeted for this category.

**9 Municipal/Township Assistance****9.a Maintaining Roads**

No expenses are budgeted for this category.

**9.b Maintaining Public Facilities**

No expenses are budgeted for this category.

**9.c Providing Emergency Services**

No expenses are budgeted for this category.

**9.d Providing other Public Services**

No expenses are budgeted for this category.

**10 Compensation to Affected Community (ORC Section 3734.35)**

No expenses are budgeted for this category.

**Table O-8 Budget Summary**

Year	Revenue (\$)	Expenses (\$)	Annual Surplus/Deficit (\$)	Balance (\$)
2015			Ending Balance	\$690,550
2016	\$663,739	\$621,617	\$42,122	\$732,672
2017	\$626,828	\$637,493	-\$10,665	\$722,006
2018	\$626,531	\$622,666	\$3,865	\$725,871
2019	\$594,053	\$613,456	-\$19,403	\$706,467
2020	\$566,605	\$526,738	\$39,867	\$746,334
2021	\$579,660	\$536,504	\$43,156	\$789,490
2022	\$569,212	\$519,411	\$49,801	\$839,291
2023	\$559,346	\$531,527	\$27,819	\$867,110
2024	\$550,999	\$533,914	\$17,085	\$884,194
2025	\$544,088	\$541,388	\$2,700	\$886,894
2026	\$538,534	\$548,950	-\$10,417	\$876,477
2027	\$534,265	\$566,602	-\$32,337	\$844,140
2028	\$531,216	\$569,346	-\$38,130	\$806,010
2029	\$531,216	\$567,396	-\$36,180	\$769,830
2030	\$531,216	\$562,396	-\$31,180	\$738,650
2031	\$531,216	\$562,396	-\$31,180	\$707,470
2032	\$531,216	\$562,396	-\$31,180	\$676,289
2033	\$531,216	\$572,396	-\$41,180	\$635,109
2034	\$531,216	\$567,396	-\$36,180	\$598,929
2035	\$531,216	\$567,396	-\$36,180	\$562,749
2036	\$531,216	\$562,396	-\$31,180	\$531,569
2037	\$531,216	\$562,396	-\$31,180	\$500,389
2038	\$531,216	\$562,396	-\$31,180	\$469,209
2039	\$531,216	\$572,396	-\$41,180	\$428,029

The District strives to maintain at least one year's reserve to cover any budget shortfalls or sudden losses of revenue. In 2020, the District had an unexpended cash balance of \$746,335. The projection in the 2017 plan for the 2020 carryover balance was \$942,989. If

the fund balance accumulates over the planning period, the District may consider implementation of other permissive programs or expansion of existing programs.

**C. Alternative Budget**

The District does not anticipate a need for an alternative budget.

**D. Major Facility Project**

The District has no major facility projects.



# APPENDIX P DESIGNATION

## A. Statement Authorizing/Precluding Designation

The Solid Waste Management District expressly reserves the right to continue facility designations in accordance with the authority granted by ORC Section 343.014. The District may also enter into joint use agreements or other contracts beneficial to the District.

## B. Designated Facilities

Ohio law provides each SWMD the ability to control where waste generated from within the SWMD can be taken. Such control is generally referred to as flow control. In Ohio, SWMDs establish flow control by designating facilities. SWMDs can designate any type of solid waste facility, including recycling, transfer, and landfill facilities. Table P-1 shows the currently designated facilities in Wood County.

**Table P-1 Designated Facilities**

Facility Name	County	State	Facility Type	Year Designated
American Landfill, Inc.	Stark	Ohio	Landfill	2011, 2016, 2021
Carleton Farms Landfill	Wayne	Michigan	Landfill	2011, 2016, 2021
County Environmental Landfill of Wyandot	Wyandot	Ohio	Landfill	2011, 2016, 2021
Defiance County Landfill	Defiance	Ohio	Landfill	2011, 2016, 2021
Erie County Sanitary Landfill	Erie	Ohio	Landfill	2011, 2016, 2021
Evergreen Recycling & Disposal Facility	Wood	Ohio	Landfill	2011, 2016, 2021
Hancock County Landfill	Hancock	Ohio	Landfill	2011, 2016, 2021
Henry County Landfill	Henry	Ohio	Transfer Facility	2011, 2016, 2021
Marion County Transfer Station	Marion	Ohio	Transfer Facility	2011, 2016, 2021
Port Clinton Landfill	Ottawa	Ohio	Landfill	2011, 2016, 2021
Sunny Farms Landfill, LLC	Seneca	Ohio	Landfill	2011, 2016, 2021
Vienna Junction Landfill	Monroe	Michigan	Landfill	2011, 2016, 2021
Wood County Landfill	Wood	Ohio	Landfill	2011, 2016, 2021

In accordance with ORC Section 3734.53(A)(13)(a), " ... when applicable ... ", the District plan shall contain " ... an identification of the solid waste disposal, transfer, and resource recovery facilities and recycling activities contained in the plan where solid wastes generated within or transported into the District will be taken for disposal, transfer, resource recovery, or recycling ... " Ohio law permits districts to regulate where waste will be taken through the designation process. To use designation authority, the approved plan must contain a statement allowing designation and the District must hold public hearing(s), comment period(s) and adopt the appropriate resolutions, after plan approval. In 2011, the District followed the process set forth in ORC Section 343.014 to establish facility designations. Currently, the District has designated 13 facilities.

The District currently implements a facility designation program; any entity wishing to deliver solid waste generated within the District to an undesignated facility must submit a written request for waiver of designation to the Board of Directors that complies with the following waiver process. The waiver request shall include the following:

- The name, address, telephone number and email address of the person requesting the waiver.
- The source and name of the generator of the solid waste included in the waiver request.
- The name, address, telephone number, and email address of the undesignated solid waste transfer, disposal, recycling, or resource recovery facility where solid waste generated within the District will be delivered if the waiver is approved by the Board of Directors.
- The estimated annual tonnage of the solid waste that will be delivered to the undesignated solid waste transfer, disposal, recycling, or resource recovery facility covered by the waiver request.
- An explanation describing how approval of the waiver request is not inconsistent with the projections contained in the District's amended solid waste management plan under divisions (A)(6) and (7) of section 3734.53 of the Revised Code.
- An explanation describing how the approval of the waiver request will not adversely affect implementation and financing of the District's amended solid waste management plan pursuant to the implementation schedule contained in the District's amend plan under division (A)(13)(a) of section 3734.53 of the Revised Code.

The Solid Waste Management District office will review the request and may request additional information if necessary. Any waiver granted by the Board of Directors shall be in the form of a waiver agreement between the Board and the entity seeking the waiver. The waiver agreement shall contain the terms and conditions upon which the waiver was granted and the payment by the grantee of the waiver fee, if any, assessed on each ton of solid waste covered by the waiver.

### **C. Documents**

The Solid Waste Management District, under authority of the Board of Commissioners for Wood County, implemented a designation contract fee of \$2.00 per ton for municipal solid waste on October 1, 2011. This assures that all municipal solid waste generated in Wood County, whether disposed within or outside the County, supports state-mandated programs and the solid waste management plan. It allows for a more equal playing field among generators, haulers and facilities and assists the District in maintaining sufficient revenue for its programs. The District currently holds designation contracts with 13 facilities. Over the past five years, annual contract fee revenue averaged \$72,662.

The designation contracts with existing facilities were renewed on October 1, 2016, and then again on October 1, 2021 for an additional five-year term. The current agreement may be renewed again for an additional five-year term in 2026. Both the current and renewal contracts allow the District to increase or decrease the designation fee amount.

# **APPENDIX Q DISTRICT RULES**

## **A. Existing Rules**

According to Ohio Revised Code Section 3734.53(C), "the solid waste management plan of a county or joint district may provide for the adoption of rules under division (G) of section 343.01 of the Revised Code after approval of the plan under section 3734.521 or 3734.55 of the Revised Code." The District reserves the right for the Board to adopt rules under the authority of this provision of the Ohio Revised Code.

The District does not have any existing rules. There are no current plans to adopt new rules at the time of the development of this Plan Update.

## **B. Proposed Rules**

To date, no rules have been proposed by the District. During the planning period, the District may adopt rules under this authority.

The Board of County Commissioners shall consider the following process when adopting solid waste management rules.

1. Provide a Public Notice of the solid waste management rules in a daily newspaper operating in the District.
2. Establish a 30-day public comment period for review of the proposed rules.
3. Hold a Public Hearing on the proposed rules (Commissioners meetings will suffice as public hearing).
4. If appropriate, incorporate the feedback from the Public Hearing.

After the above process has been followed, the Board of County Commissioners shall adopt the rules of the Solid Waste Management District.



# APPENDIX R BLANK SURVEY FORMS AND RELATED INFORMATION



Dear Commercial Business,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Wood County 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 commercial businesses recycled in the Wood County Solid Waste Management District and Ohio in 2019. Your company's survey response **will not** be reported individually; all data will be summarized by the North American Industry Classification System (NAICS) category.

For assistance completing this form or any questions related to the survey, please contact Hannah Smith, the Wood County Solid Waste Management District's Recycling Outreach Coordinator, at [hsmith@woodcountyoio.gov](mailto:hsmith@woodcountyoio.gov) or by phone at 419-354-1515.

Please complete and submit this survey no later than 3/5/2020.

## Options for Returning the Completed Survey

- Email directly to Hannah Smith at [hsmith@woodcountyoio.gov](mailto:hsmith@woodcountyoio.gov), Subject Line: 2020 Commercial Survey
- Mail to Hannah Smith, Solid Waste Management District, at 1 Court House Square, Bowling Green, OH 43402

## 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 Wood County Solid Waste Management District to contact you in the future to discuss your recycling needs.

Table A: Company Information		
Name:	County:	Store I.D.
Address:	City:	Zip:
Contact Person:	Title:	
Email:	Telephone Number (include area code): ( ) —	
Primary NAICS:	Secondary NAICS:	Number of full-time employees:
Would you like to be contacted by your local solid waste management district for recycling assistance? <input type="checkbox"/> Yes <input type="checkbox"/> No		

## Instructions for completing Table B:

**Table B** provides a list of common materials that are recycled by 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.

## Appendix R Blank Survey Forms and Related Information

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 Wood County Solid Waste Management District may also be able to provide you with assistance.

[illegible]

Table C: Please provide any additional information, comments, suggestions, questions etc.

Thank you again for taking the time to complete this survey. Please contact Hannah Smith with any questions.

Hannah Smith, Recycling Outreach Coordinator  
Wood County Solid Waste Management District  
Phone: 419-354-1515  
Email: [hsmith@woodcountyohio.gov](mailto:hsmith@woodcountyohio.gov)

## Materials Cheat Sheet

### Food

- Compostable food waste
- Food donations

### Glass

- Bottles (any color)
- Jars

### Ferrous Metals

- Mild Steel
- Carbon Steel
- Stainless Steel
- Cast Iron
- Wrought Iron

### Non-Ferrous Metals

- Aluminum
- Copper
- Brass
- Silver
- Lead
- Misc. Scrap Metals

### All Other Paper

- Office paper
- Paperboard
- Newspapers
- Folders
- Telephone Books
- Magazines
- Catalogs
- Junk Mail

### Plastics

- Plastics #1-7
- Plastic Bottles
- Plastic Jugs
- Shrink Wrap
- Plastic Films
- Coat Hangers

### Textiles

- Fabrics
- Clothes
- Carpet

### Wood

- Bark
- Woodchips
- Sawdust
- Scrap Wood
- Shipping Pallets
- 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 are some common conversion factors 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 Pounds per Year
- 2,000 pounds = 1 ton

For more assistance, contact your solid waste management district.



## Appendix R Blank Survey Forms and Related Information



Dear Industrial Facility,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Wood County 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 industrial businesses recycled in the Wood County Solid Waste Management District and Ohio in 2020. Your company's survey response **will not** be reported individually; all data will be summarized by the North American Industry Classification System (NAICS) category.

For assistance completing this form or any questions related to the survey, please contact Hannah Smith, the Wood County Solid Waste Management District's Recycling Outreach Coordinator, at [hsmith@woodcountyohio.gov](mailto:hsmith@woodcountyohio.gov) or by phone at 419-354-1515.

**Please complete and submit this survey no later than 3/5/2021.**

### Options for Returning the Completed Survey

- Email directly to Hannah Smith at [hsmith@woodcountyohio.gov](mailto:hsmith@woodcountyohio.gov), Subject Line: 2020 Industrial Survey
- Mail to Hannah Smith, Solid Waste Management District, at 1 Court House Square, Bowling Green, OH 43402

### 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 Wood County Solid Waste Management District to contact you in the future to discuss your recycling needs.

Table A: Company Information		
Name:		County:
Address:		City: Zip:
Contact Person:		Title:
Email:		Telephone Number (include area code): ( ) —
Primary NAICS:	Secondary NAICS:	Number of full-time employees:
Would you like to be contacted by your local solid waste management district for recycling assistance? <input type="checkbox"/> Yes <input type="checkbox"/> No		

### Instructions for completing Table B:

**Table B** provides a list of common materials that are recycled by industrial 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.

## Appendix R Blank Survey Forms and Related Information

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 Wood County Solid Waste Management District may also be able to provide you with assistance.

Table B: Quantities of Recycled Materials			
Recyclable Material Category	Amount Recycled in 2020	Units	Name of hauler or processor that takes the material/other comments
Food		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Glass		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Ferrous Metals		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Non-Ferrous Metals		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Corrugated Cardboard		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
All Other Paper		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Plastics		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Textiles		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Wood		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Rubber		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Commingled Recyclables		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Ash (recycled ash only)		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Non-Excluded Foundry		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Flue Gas Desulfurization		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
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Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/> yd <sup>3</sup>	

**Table C: Please provide any additional information, comments, suggestions, questions etc.**

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Thank you again for taking the time to complete this survey. Please contact Hannah Smith with any questions.

Hannah Smith, Recycling Outreach Coordinator  
Wood County Solid Waste Management District  
Phone: 419-354-1515  
Email: [hsmith@woodcountyohio.gov](mailto:hsmith@woodcountyohio.gov)

## Solid Waste Management District

Carri L. Stanley, Assistant County Administrator

A department under the Board of County Commissioners  
Doris I. Herringshaw, Ed.D. Craig LaHote Dr. Theodore H. Bowlus



TO: Wood County Local Governments

FROM: Carri L. Stanley, Assistant County Administrator *CLS*

DATE: February 12, 2021

RE: 2020 Annual District Reporting Survey

Enclosed please find the Wood County Solid Waste Management District Annual District Reporting Form. Please use this form to report your community's recycling activities for calendar year 2020. We will use this information to prepare the Wood County Solid Waste Management District's annual report.

In order to qualify for the 2021 annual per capita residential recycling subsidy, please submit a completed copy of the attached survey form by **March 31, 2021**. Late or incomplete forms may impact your funding. Per the District's Solid Waste Management Plan, a penalty of 10% of your organization's total annual per capita funding will be deducted each month after March 31 until the report is received.

The Solid Waste Management Plan's report/per capita allocation schedule is below:

Report Received	Per Capita Allocation
Up to March 31	100%
April 1 – 30	90%
May 1 – 31	80%
June 1 – 30	70%
July 1 – 31	60%
August 1 – 31	50%
September 1 – 30	40%
October 1 – 31	30%
November 1 – 30	20%
December 1 – 31	10%
After December 31	0

For those local governments whose per capita is paid to the community group maintaining the 24/7 permanent recycling location, the group's site visit reporting requirement must be met to receive per capita funding. Drop-off per capita will be paid in late November.

The District will base the per capita allocation payment on your population as of the 2010 federal census. If you wish to have your per capita payment sent directly to the group serving your recycling drop-off site, please sign and check the box at the bottom of the *Annual District Reporting Form 2020 Recycling Activities*.

One Courthouse Square • Bowling Green, Ohio 43402 • Phone 419-354-9297 • Fax 419-354-1620  
solidwastedistrict@woodcountyohio.gov • www.recyclewoodcounty.org



## Appendix R Blank Survey Forms and Related Information

You are not required to provide recycling information for the Wood County 24/7 Residential Mixed Recycling Drop-off locations as this data will be provided by Republic Services. If a section of the survey form does not apply to your organization, please mark it "N/A."

If you previously received Solid Waste Management District grant funds for the purchase of equipment, please be reminded that the District must be informed of any change in status of the equipment, including any changes regarding use, ownership, location, or condition (e.g., unrepairable or unusable).

Please contact Patti Bowsher, Office Manager, at [pbowsher@woodcountyohio.gov](mailto:pbowsher@woodcountyohio.gov) or (419) 354-4297 if you have questions.

Thank you for your assistance in providing this information.

Enclosure

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## **APPENDIX S SITING STRATEGY**

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

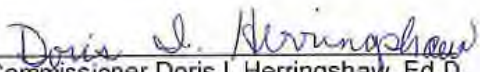
The District Policy Committee has determined that sufficient disposal capacity exists for the entire planning period. The District does not anticipate constructing any solid waste facilities or contracting with a private entity to do so on behalf of the District. As such, and in accordance with the Format 4.1, no siting criteria is necessary for this Plan Update.

## APPENDIX T MISCELLANEOUS PLAN DOCUMENTS

### A. Certification Statement for Draft Solid Waste Management District Plan

#### Certification Statement for the Draft Plan


We as representatives of the policy committee for the Wood County Solid Waste Management District (District) do hereby certify that to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the District's solid waste management plan (Plan) are accurate and are in compliance with the requirements in the *District Solid Waste Management Plan Format*, version 4.1, the *2020 State Solid Waste Management Plan*, and the Ohio Revised Code.

  
Commissioner Doris I. Herringshaw, Ed.D.  
Wood County, Ohio

5-2-2022  
Date Signed

  
Mayor Mike Aspacher  
City of Bowling Green, Ohio

5-2-2022  
Date Signed

  
Jim Rossow  
Township Representative

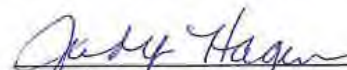
5-2-2022  
Date Signed

  
Lana Glone  
Health Commissioner Designee

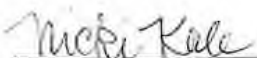
5-2-2022  
Date Signed

ABSENT  
Lori Carson  
Solid Waste Generator Representative

\_\_\_\_\_  
Date Signed

  
Judy Hagen  
Member Representing General Interests  
of Citizens

5-2-22  
Date Signed

  
Nicki Kale  
Public Representative

5/2/2022  
Date Signed



## B. Resolution Adopting the Solid Waste Management District Plan

### RESOLUTION

In the matter of adopting the Draft, Amended	)	Wood County Solid Waste
Wood County Solid Waste Management District	)	Management District
Plan	)	Policy Committee
	)	Wood County, Ohio
	)	April 3, 2023

WHEREAS, this Policy Committee completed the draft, amended solid waste management plan and submitted it to the Ohio Environmental Protection Agency for review and comment on May 16, 2022. The Ohio Environmental Protection Agency provided comments in a non-binding advisory opinion issued on June 29, 2022; and

WHEREAS, this Policy Committee reviewed the non-binding advisory comments received from the Ohio Environmental Protection Agency and took into consideration these comments and incorporated changes into the draft, amended solid waste management plan where necessary; and

WHEREAS, the Policy Committee conducted a 30-day public comment period and held a public hearing on February 8, 2023 to provide the public an opportunity to have input into the draft, amended solid waste management plan.

NOW, THEREFORE, BE IT RESOLVED that the Policy Committee for the Wood County Solid Waste Management District:

1. Adopts the draft, amended solid waste management plan for the Wood County Solid Waste Management District; and
2. Certifies to the best of its knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the District's draft, amended solid waste management plan, and the availability of and access to sufficient solid waste management facility capacity to meet the solid waste management needs of the Authority for the planning period covered by the Plan, are accurate and are in compliance with the requirements in the *District Solid Waste Management Plan Format*, version 4.1, the *2020 State Solid Waste Management Plan*, and the Ohio Revised Code.

Policy Committee Member Lana Glore moved and Policy Committee Member Mayor Mike Aspacher seconded the foregoing resolution, and the roll being called on its adoption, the vote resulted as follows:

# Appendix T Miscellaneous Plan Documents

NAME:	YES/NO	SIGNATURE:
COMMISSIONER DORIS I. HERRINGSHAW, ED.D.	<u>yes</u>	<u>Doris I. Herringshaw</u>
MAYOR MIKE ASPACHER	<u>YES</u>	<u>MZ AZ</u>
JIM ROSSOW TOWNSHIP TRUSTEE	<u>YES</u>	<u>James A Rossow</u>
LANA GLORE HEALTH COMMISSIONER DESIGNEE	<u>Yes.</u>	<u>Lana Glore</u>
NICKI KALE PUBLIC REPRESENTATIVE	<u>YES</u>	<u>Nicki Kale</u>
JUDY HAGEN MEMBER REPRESENTING GENERAL INTERESTS OF CITIZEN	<u>      </u>	<u>Absent</u>
LORI CARSON SOLID WASTE GENERATOR REPRESENTATIVE	<u>yes</u>	<u>Lori Carson</u>

DATE: April 3, 2023

This is to certify that the foregoing is a true and correct copy of the resolution passed by the policy committee for the Wood County Solid Waste Management District on the 3<sup>rd</sup> day of April, 2023.

April 3, 2023  
Date

Dan Scherger  
Dan Scherger  
Solid Waste Director  
Wood County Solid Waste  
Management District

## C. Resolution Certifying Ratification of the Solid Waste Management District Plan

### RESOLUTION

In the matter of certifying the Draft, Amended	)	Wood County Solid Waste
Wood County Solid Waste Management District	)	Management District
Plan was ratified	)	Policy Committee
	)	Wood County, Ohio
	)	July 31, 2023

WHEREAS, this Policy Committee adopted the draft, amended solid waste management plan by resolution on April 3, 2023; and

WHEREAS, this Policy Committee received copies of resolutions and ordinances approving the draft, amended solid waste management plan from the board of county commissioners, the legislative body of the largest municipality within the District, and from legislative jurisdictions representing at least 60 percent of the residential population within the District.

NOW, THEREFORE, BE IT RESOLVED that the Policy Committee for the Wood County Solid Waste Management District hereby:

1. Declares that the draft, amended solid waste management plan for the Wood County Solid Waste Management District was ratified in accordance with Section 3734.55 of the Ohio Revised Code; and
2. The Policy Committee shall submit the draft, amended solid waste management plan to the director of the Ohio Environmental Protection Agency for review.

Policy Committee Member Joe Fawcett moved and Policy Committee Member Lori Carson seconded the foregoing resolution, and the roll being called on its adoption, the vote resulted as follows:

NAME:	YES/NO	SIGNATURE:
COMMISSIONER DORIS I. HERRINGSHAW, ED.D.	<u>Yes</u>	<u>Doris I. Herringshaw</u>
CITY OF BOWLING GREEN DESIGNEE, JOE FAWCETT	<u>Yes</u>	<u>[Signature]</u>
JIM ROSSOW TOWNSHIP TRUSTEE	<u>Yes</u>	<u>[Signature]</u>

\\SOLID WASTE MANAGEMENT DISTRICT\PLAN UPDATE\Plan 2023\Policy Committee Resolutions\Resolution Certifying the Draft Final was Ratified.docx



## Appendix T Miscellaneous Plan Documents

LANA GLORE  
HEALTH COMMISSIONER  
DESIGNEE

Absent

NICKI KALE  
PUBLIC REPRESENTATIVE

Absent

JUDY HAGEN  
MEMBER REPRESENTING  
GENERAL INTEREST OF  
CITIZEN

Absent

LORI CARSON  
SOLID WASTE GENERATOR  
REPRESENTATIVE

yes

*Lori Carson*

DATE: July 31, 2023

This is to certify that the foregoing is a true and correct copy of the resolution passed by the policy committee for the Wood County Solid Waste Management District on the 31<sup>st</sup> day of July, 2023.

July 31, 2023  
Date

*Dan Scherger*  
Dan Scherger  
Solid Waste Director  
Wood County Solid Waste Management  
District

# APPENDIX U      RATIFICATION RESULTS

Table U-1      Ratification Summary

Board of County Commissioners	Wood		Date Resolution Adopted
	Approved	Rejected	
	Yes		7/6/2023
Community	Population		Date Resolution Adopted
	Approved	Rejected	
Cities			
City of Bowling Green	30,808		6/29/2023
City of Northwood	5,160		6/22/2023
City of Perrysburg	25,041		6/20/2023
City of Rossford	6,299		5/8/2023
Townships			
Bloom Township			
Center Township	1,140		7/17/2023
Freedom Township	1,318		6/14/2023
Grand Rapids Township	661		5/22/2023
Henry Township	711		7/10/2023
Jackson Township	482		6/6/2023
Lake Township	6,956		5/16/2023
Liberty Township	1,565		5/17/2023
Middleton Township	4,366		7/5/2023
Milton Township	614		5/23/2023
Montgomery Township	1,804		5/16/2023
Perry Township	1,437		6/6/2023
Perrysburg Township	13,571		6/21/2023
Plain Township			
Portage Township			
Troy Township	3,088		6/14/2023
Washington Township	1,477		6/21/2023
Webster Township	1,230		5/8/2023
Weston Township	669		5/8/2023
Villages			
Village of Bairdstown			
Village of Bloomdale	665		5/9/2023
Village of Cygnet	543		5/15/2023
Village of Jerry City	454		6/13/2023
Village of Pemberville	1,326		6/20/2023
Grand Rapids Village			
Village of North Baltimore	3,369		7/18/2023
Village of Hoytville			
Village of Millbury	1,193		5/8/2023
Village of Walbridge			
Portage Village	398		5/1/2023
Village of Haskins	1,245		6/5/2023
Custar Village	178		7/12/2023
Village of Milton Center			
Village of Bradner			
Village of Risingsun			
Village of Wayne	841		6/7/2023
Village of West Millgrove	131		7/13/2023
Village of Luckey			
Village of Tontogany	387		6/5/2023
Village of Weston	1,455		6/20/2023
Total	120,582	0	
County Population	131,156		
Ratification percentage	92%		

## **APPENDIX V      INVENTORY OF OPEN DUMPS AND OTHER DISPOSAL FACILITIES**

### **A.      Existing Open Dumps and Waste Tire Dumps**

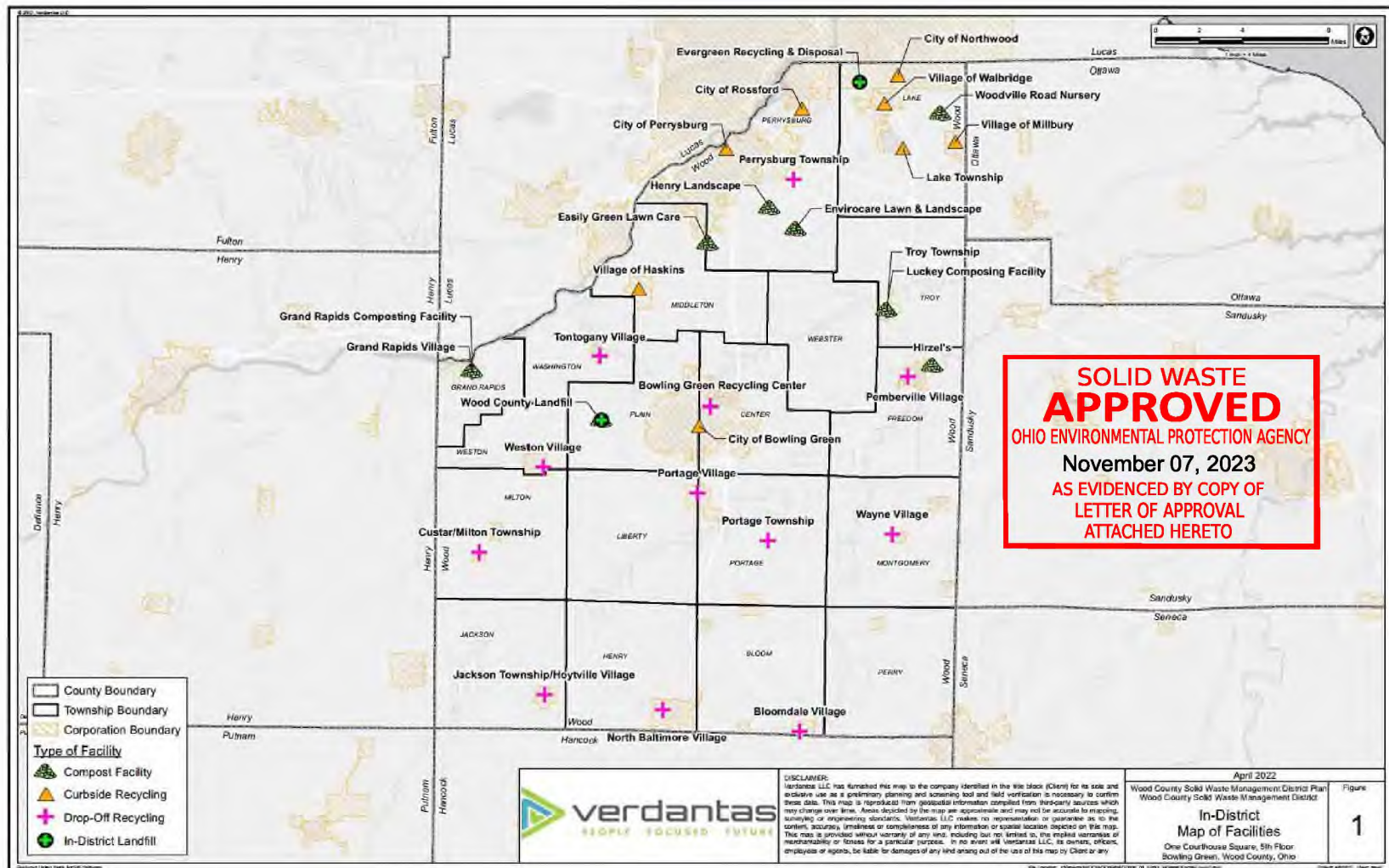
There are no existing open dumps or waste tire dumps in the District

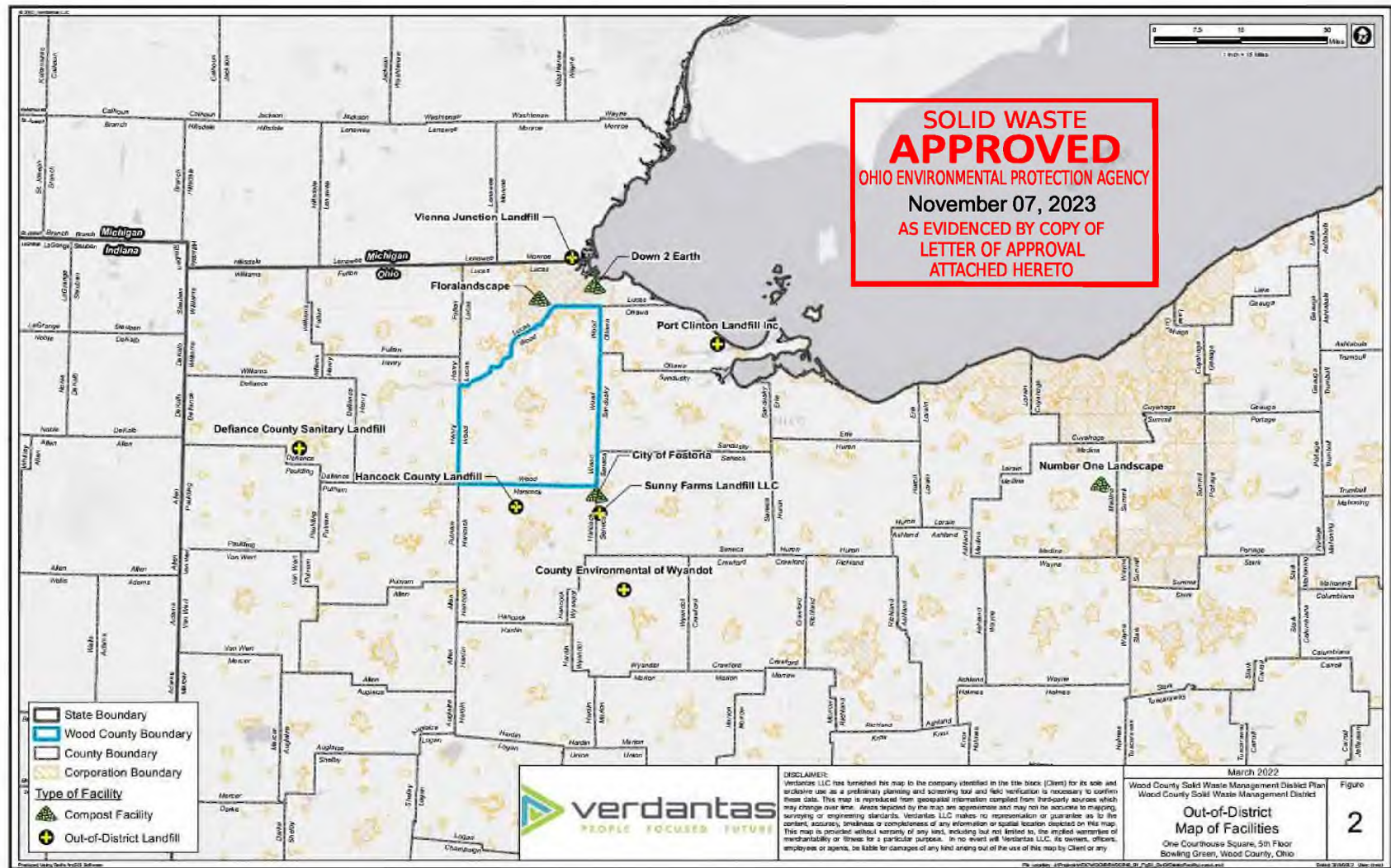
### **B.      Ash, Foundry Sand, and Slag Disposal Sites**

To the District's knowledge, there are no dedicated sites in the District that currently accept ash, foundry sand, or slag.



# APPENDIX W DISTRICT MAP







## APPENDIX X OUTREACH AND MARKETING MATERIALS



# Recycle Right

### Tips to Reduce Contamination in Your Recycling

#### 1. Know what to throw

Contact Wood County Solid Waste Management District or your local recycling hauler

#### 2. Plastics

Plastic jugs & bottles from your kitchen, laundry, and bathroom  
No bulky, rigid plastics or flexible plastic (can poke your finger through)

#### 3. Clean, Empty, & Dry

#### 4. Do not bag

Keep recyclables loose. If it looks like trash, it gets thrown away like trash!

#### 5. Nothing smaller than a credit card

#### 6. Other recycling

Electronics, Household Hazardous Waste, Tires - WCSWMD Household Recycling Options  
Flexible Plastic - take back to the store  
Clothing/Textiles, Organic Waste - donated, composted

#### 7. When in doubt, throw it out!

#### 8. Create less waste in the first place! **REDUCE & REUSE**

Wood County SWMD   Hannah Bumb, Recycling Outreach Coordinator   419-354-1515  
hbumb@woodcountyoio.gov   www.recyclewoodcounty.org





## WOOD COUNTY SOLID WASTE MANAGEMENT DISTRICT EDUCATIONAL PRESENTATION GUIDE 2020–2021

### All Ages

- **Recycle Right:** Learn how to recycle right to maximize sustainability efforts, reduce contamination, and ensure that what goes in the recycling bin belongs there.
- **Compost 101:** Learn the basics of backyard composting: what goes in the bin, various compost methods, and how to troubleshoot common issues.
- **Home Safe Home:** A guide to the possible hazards of using chemical cleaners and discover safe and effective alternatives with cleaning recipes.
- **Recycled Arts & Crafts:** Includes newspaper pots, paper-making, and a DIY bird feeder.

### Pre-school & Kindergarten

- **Happy Recyclables:** Young learners will hear about the basics of recycling as recyclables come to life. [OLS K.PS.1]
- **Litter Playground:** Learn how litter harms the earth and the importance of recycling through cleaning a playground scene. [OLS K.PS.1]
- **Michael Recycle:** The *Michael Recycle* book is read followed by a discussion of the benefits of recycling and waste reduction. Students can make their own capes and hats with old newspapers like Michael.

### Elementary

- **The 3 R's:** Participants review the three "chasing arrows" that comprise the recycling symbol followed by a "This Becomes That" presentation. A short story on recycling is read along with a recycling worksheet. [OLS 1.PS.1]
- **Landfills:** Learn about landfill operations and alternative means of waste disposal. Students play a waste stream game and learn about waste reduction. [OLS 2.LS.1]
- **Green Washing:** Students learn about eco-friendly products paired with an investigative game and a discussion on resources. [OLS 3.ESS.5]
- **Resources:** A review of renewable and non-renewable resources. Students learn how recycling helps conserve non-renewable resources and play the game "Show Em Sherlock" to understand properties of various recyclables. [OLS 4.LS.1]
- **Recycling Review:** Students divide into teams for a recycling review game. The presentation concludes with a virtual tour of a Materials Recovery Facility. [OLS 5.LS]
- **Recycle Right Relay:** This interactive activity gets kids racing for recycling! Groups are divided into two and must sort through items and place them in the proper disposal bin.

### Middle and High School

- **Compost and Soil:** Students learn about compost and its ecological benefits. Various soil samples are examined and analyzed. A discussion on renewable and non-renewable resources underscores the importance of protecting local soil systems. [OLS 6.ESS.4]
- **Watersheds and Biomes:** Students participate in the "Fred the Fish" activity and discuss the impact of non-point source and point source pollution and litter on watersheds. [OLS 7.LS.2]
- **Edible Landfills and Trashology 101:** Participants learn how trash is managed with an emphasis on sanitary landfills. They will build their own landfill that can be eaten at the end of the presentation!
- **Solid/ Hazardous Waste:** Students learn about modern disposal of solid and hazardous waste. They will build a simulated landfill and predict decomposition rates while learning about unsustainable mining practices. Discussion on the benefits and challenges of recycling. Students will complete a consumption diary to track their daily impact on the planet. [OLS ENV.ER.4]

PROGRAMS CAN BE ADAPTED FOR SYNCHRONOUS AND ASYNCHRONOUS INSTRUCTION. LOAN BOXES MAY BE AVAILABLE.

CONTACT HANNAH SMITH, RECYCLING OUTREACH COORDINATOR, TO SCHEDULE A PRESENTATION  
HSMITH@CO.WOOD.OH.US  
419-354-1515  
WWW.RECYCLEWOODCOUNTY.ORG

# Wood County Complex Recycling

 Please recycle **ONLY** these items! 



## PLASTIC BOTTLES

empty & rinse

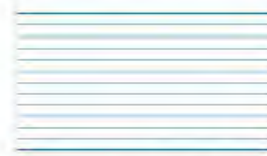
*top smaller than body*

**NO OTHER PLASTIC!**



## ALUMINUM BEVERAGE CANS

empty & rinse



## PAPER

office paper: white & colored,  
envelopes, file folders, index  
cards, labels/stamps/sticky notes,  
staples & clips OK

newspaper: phonebooks,  
inserts & ads OK

magazines: remove plastic wrap



## CARDBOARD

**PLEASE FLATTEN!**

*Questions? Call the SWMD Recycling Coordinator 419.354.1515*



# East Gypsy Lane Recycling Accepted Items List

*Please make sure recyclables are empty, dry, and clean!  
NO plastic bags, food or liquid, or items placed outside of bin*



**metal cans**



**wax cartons**



**glass bottles  
and jars**



**flattened carboard  
mixed paper and fiber**



**plastic bottles, jugs, and tubs  
(lids on)**

*For questions or to report issues please contact:  
Wood County Solid Waste Management District at (419) 354-9297*



**RECYCLE WOOD COUNTY! 24 HR DROP OFF**

<b>Mixed Recycling = No Sort.</b> <b>Expanded Recycling Options Available</b>	<b>Report Illegal Dumping: 419.354.9297</b> <b>No Bagged Recyclables! No Styrofoam!</b>	
<p><b>PLASTIC - #1 through #7</b> <span style="color: red;">Only items listed are accepted.</span>          food and beverage bottles, containers or packaging          bottles such as laundry detergent, fabric softener, shampoo, dish detergent, etc.  <span style="color: red;">NO</span> polystyrene egg cartons or motor oil containers</p> <p><b>FLATTENED CARDBOARD</b>          cardboard boxes, cardboard rolls (paper towel/gift wrap), file folders, frozen food boxes,          milk cartons, poster board</p> <p><b>PAPER</b>          paper (staples okay), newspaper, envelopes, junk mail, phone books, brochures, magazines</p> <p><b>ALUMINUM/METAL</b>          aluminum beverage cans; food cans; pots, pans, tins &amp; utensils; household scrap metal,  <span style="color: red;">NO</span> construction or automotive parts</p> <p><b>GLASS</b>          beverage containers, glass food jars, <span style="color: red;">NO</span> window glass</p> <p><b>WAX CARTONS (ASEPTIC CONTAINERS)</b>          milk and orange juice cartons only  <span style="color: red;">NO</span> polystyrene egg cartons</p>	<div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 30%; text-align: center;"> </div> <div style="width: 30%; text-align: center;"> <p><b>No Garbage!</b></p> </div> <div style="width: 30%; text-align: center;"> <p><b>No Plastic Bags!</b> (return to retail)</p> </div> <div style="width: 30%; text-align: center;"> <p><b>No Food or Liquid</b> (empty all containers)</p> </div> <div style="width: 30%; text-align: center;"> <p><b>No Clothing or Linens</b> (use donation programs)</p> </div> <div style="width: 30%; text-align: center;"> <p><b>No Tangles</b> (no hoses, wires, etc.)</p> </div> </div> <p style="font-size: small; text-align: right;">Graphics provided by The Recycling Partnership</p>	

**Additional Questions? Contact the Solid Waste Management District!**


**419.354.9297 or visit [www.recyclewoodcounty.org](http://www.recyclewoodcounty.org)**

**RECYCLE WOOD COUNTY! 24 HR DROP OFF**

**7 DAYS A WEEK**

**FREQUENTLY ASKED QUESTIONS**

### Locations for Your Convenience



1. Bloomdale: Watershed (Near Water Tower)
2. Custar/Milton Township: Village Park (Superior St.)
3. Grand Rapids: 17460 Sycamore Rd.
4. Jackson Township/Hoytville: Township Building
5. Pemberville: Public Works Yard, 408 Sherman St.
6. Perrysburg Township: 26609 Lime City Rd.
7. Portage: 110 West Walnut Street
8. Portage Township: 9720 Mermill Rd.
9. Troy Township: Across from Township Building
10. Tontogany: Town Hall on Main St.
11. Wayne: 125 Schoolhouse Street
12. Weston: Old Elementary Parking Lot

### What types of plastic are accepted?

The Recycle Wood County! 24 HR Drop Off Locations are now accepting all number #1 through #7 plastic food containers, packaging and beverage bottles. Please empty and rinse all containers and replace the lid before recycling. (Examples include: plastic water bottles, milk jugs, yogurt and butter tubs, plastic produce/deli containers, soap bottles, laundry detergent containers, etc.)  
Do NOT put plastic bags, film plastic of any kind, or Styrofoam in these containers!

### Should I bag my recyclables?

NO! Recyclables are collected loose in the container and then transported to a location where they can be sorted. Plastic bags cause expensive damage to sorting equipment.

### Why are the items accepted at these locations different than other programs?

The contracted hauler is transporting the materials to a large Materials Recovery Facility (MRF). This facility is accepting additional materials that others are not able to process.

### Do I have to sort my recyclables?

No. All accepted recyclables can be put into the container mixed. No need to bag and no need to sort. This should reduce the number of collection bins needed in your home and add convenience.

---


### Other 24/7 Drop Off Locations (Sorting materials required-no change in materials):

Bowling Green Recycling Center: 1040 N. College Dr., Bowling Green (independent facility)

## For information, call 419.354.9297

## or visit [www.recyclewoodcounty.org](http://www.recyclewoodcounty.org)

Brought to you by the Wood County Solid Waste Management District,  
a department of the Wood County Commissioners  
Special thank you to our host communities.





# Plastic Film Recycling Guide

**Recycle plastic film at these participating retailers. Look for a drop-off bin near the front of the store!**

 Churchill's  Kazmaier's  Kroger  Meijer  Target  Walmart

*Plastic film must be clean and dry!*



**thick plastic bags**



**thin plastic bags**



**food storage bags**



**bread bags**



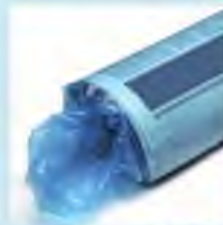
**produce bags**



**case wrap**



**dry cleaning bags**



**newspaper bags**



**air pillows**



**product overwrap**



**plastic shipping envelopes**



**bubble wrap**

*Remove paper labels*



[www.recyclewoodcounty.org](http://www.recyclewoodcounty.org)

**Wood County Solid Waste**

**Management District**





# ELECTRONICS RECYCLING



## **AIM ECYCLING (Toledo)**

419-517-2055

[aimecycling.com](http://aimecycling.com)

- accepts computers and electronics
- no TVs, CRT monitors, or Freon or mercury containing items

## **ENVIRONMENTAL RECYCLING GROUP (Bowling Green)**

419-354-6110

[ergenvironmental.com](http://ergenvironmental.com)

- \$.75 per pound, \$20 minimum

## **RECYCLE I.T. USA (Toledo)**

833-419-2989

[recycleitusatoledo.com](http://recycleitusatoledo.com)

- accepts computers, fax machines, monitors, printers, copiers, small electronics, cell-phones, keyboards, mice, and wires for free
- Perrysburg Township drop-off site
- LCD, LED, and plasma TVs \$10 for <32", \$20 for larger

## **STATE, PAPER, AND METAL (Toledo)**

419-243-5567

[statepaperandmetal.com](http://statepaperandmetal.com)

- most electronics for free
- TVs \$25-\$30

## **RECELL ONE (Toledo)**

419-724-9045

[recellone.com](http://recellone.com)

- recycle anything with a cord for free
- no TVs

*Accepted items and charges subject to change*

# WCSWMD Holiday Recycling Guide

Nice



empty, flattened  
boxes



uncoated  
wrapping  
paper/cards



uncoated  
gift bags



cut trees -  
check your community  
for Tree-Cycling!



Naughty



styrofoam



film packaging  
*take back to the store!*



bows and ribbons



glossy or  
embellished  
wrapping  
paper/cards



artificial trees  
and decor





# Wood County Tree-Cycle 2020

*Please remove all decorations, lights, and bags from trees!*



## City of Bowling Green

curbside pickup week of 1/4  
trees out by 7 am

## City of Northwood

curbside pickup beginning 12/31

## City of Perrysburg

curbside pickup week of 1/11

## City of Rossford

curbside pickup first 2 weeks of January

## Lake Township

drop off at 3800 Ayers Road in January

## Milton Township

drop off at Recycling Center until 1/10

## Montgomery Township

drop off at Township Hall between buildings

## Perrysburg Township

curbside pickup week of 1/4

## Village of Grand Rapids

curbside pickup week of 1/4

## Village of Haskins

curbside pickup week of 1/4

## Village of Luckey

curbside pickup during January

## Village of North Baltimore

curbside pickup first 2 weeks of January

## Village of Pemberville

curbside pickup

## Village of Portage

curbside pickup during January

## Village of Walbridge

curbside pickup

## Village of Walbridge

curbside pickup

## Wood County Landfill

1 free tree per customer during January

## Wood County Park District

drop off at Park District Headquarters,  
Otsego Park, WW Knight Preserve, William  
Henry Harrison Park, Slippery Elm Trail in  
North Baltimore 12/26 - 1/31



*Happy holidays from Wood County  
Solid Waste Management District*

*[www.recyclewoodcounty.org](http://www.recyclewoodcounty.org)*

