

SOLID WASTE MANAGEMENT PLAN

RICHLAND COUNTY REGIONAL SOLID WASTE MANAGEMENT AUTHORITY

FEBRUARY 2020

PREPARED FOR:
**RICHLAND COUNTY REGIONAL SOLID WASTE
MANAGEMENT AUTHORITY**
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RICHLAND COUNTY REGIONAL SOLID WASTE MANAGEMENT AUTHORITY

Solid Waste Management District Information

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Members of the Board of Trustees

Member Name	Representing
Darrell Banks, Richland County Commissioner (Authority Chairman)	County Commissioners
Tim Theaker, Mayor of Mansfield	Municipal Corporations
Jack Butler, Washington Twp Trustee	Townships
Joe Harrod, Director Environmental Health	Health District
Mark Martin	Generators
Gaylord Rice Jr.	Citizens
Chuck Pscholka	Public

Board of Richland County Commissioners

Marilyn John	Darrell Banks	Tony Vero
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Technical Advisory Committee

The Authority does not have a Technical Advisory Committee. The RCRSWMA Board of Trustees was involved in the development and review of this plan.

Consultant Information

The Mannik & Smith Group (MSG) has coordinated efforts with the RCRSWMA to complete this plan update.

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CHAPTER 1 INTRODUCTION

A. Brief Introduction to Solid Waste Planning in Ohio

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 These issues combined with Ohio's outdated and incomplete solid waste regulations caused Ohio's General Assembly to pass House Bill (H.B.) 592. H.B. 592 dramatically revised Ohio's outdated solid waste regulatory program and established a comprehensive solid waste planning process.

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

B. Requirements of County and Joint Solid Waste Management Districts

1. Structure

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

A SWMD is governed by two bodies. The first is the board of directors, which consists of 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

2. Solid Waste Management Plan

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

Solid waste management plans must contain the information and data prescribed in Ohio Revised Code (ORC) 3734.53, Ohio Administrative Code (OAC) Rule 3745-27-90. Ohio EPA prescribes

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

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

the format that details the information that is provided and the manner in which that information is presented. This format is very similar in concept to a permit application for a solid waste landfill.

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

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

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

C. District Overview

The formation of the Richland County Regional Solid Waste Management Authority (RCRSWMA) was approved by a vote of the political entities in Richland County. The Authority is governed by a Board of Trustees. The responsibilities of the Authority include preparing, monitoring, and updating the solid waste management plan for Richland County and administering the facilities and programs that are included in the plan.

This plan provides direction to the Authority for reducing waste and increasing recycling by continuing and expanding participation in the programs and activities the Authority has already initiated.

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 *2009 Solid Waste Management Plan* (2009 State Plan). The 2009 State Plan established nine goals as follows:

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

The SWMD shall reduce and recycle at least 25 percent of the solid waste generated by the residential/commercial sector and at least 66 percent of the solid waste generated by the industrial sector.

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.

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.

The SWMD shall provide strategies for managing scrap tires, yard waste, lead-acid batteries, household hazardous waste and obsolete/end-of-life electronic devices.

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

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.

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

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

All nine SWMD goals in this state plan are crucial to furthering solid waste reduction and recycling in Ohio. However, by virtue of the challenges posed by Goals 1 and 2, SWMDs typically have to devote more resources to achieving those two goals than to the remaining goals. Thus, Goals 1 and 2 are considered to be the primary goals of the state plan.

Each SWMD is encouraged to devote resources to achieving both goals. However, each of the 52 SWMDs varies in its ability to achieve both goals. Thus, a SWMD is not required to demonstrate that it will achieve both goals. Instead, SWMDs have the option of choosing either Goal 1 or Goal 2 for their solid waste management plans. This affords SWMDs with two methods of demonstrating compliance with the State's solid waste reduction and recycling goals. Many of the programs and services that a SWMD uses to achieve Goal 1 help the SWMD make progress toward achieving Goal 2 and vice versa.

A SWMD's solid waste management plan will provide programs to meet up to eight of the goals. Goal 8 (market development) is an optional goal. Goal 9 requires submitting annual reports to Ohio EPA, and no demonstration of achieving that goal is needed for the solid waste management plan.

See Chapter 5 and Appendix I for descriptions of the programs the SWMD will use to achieve the nine 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;
The available infrastructure for managing waste and recyclable materials within the SWMD;
The commercial businesses and institutional entities located within the SWMD;
The industrial businesses located within the SWMD; and
Any other characteristics that are unique to the SWMD and affect waste management within the SWMD or provide challenges to the SWMD.

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

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

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

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

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

A. Profile and Political Jurisdiction

1. Counties in the Solid Waste Management District

The RCRSWMA is a single county SWMD composed of Richland County and the communities within the county borders except for the Village of Crestline, which is included in the Crawford County SWMD. The RCRSWMA also includes the portion of the Village of Plymouth located within Huron County.

2. County Overview

On January 7, 1813, the Ohio government authorized the creation of Richland County. Residents named the county after its rich soil.

Richland County is located in northern Ohio. The county seat is Mansfield, which is the county's largest population center, with 49,346 residents in 2000. Richland County experienced a 2.2 percent increase in population between 1990 and 2000, raising the number of residents to 128,852 people. An average of 259 people live in each of Richland County's 497 square miles.

Richland County is heavily rural, with urban areas comprising just three percent of the county's land mass. With more than one thousand farms existing in the county, many residents find employment in agriculture; with manufacturing establishments, sales positions, and service industries also employing a large number of residents. Richland County also has a ski industry and is home to the Mansfield Correctional Facility. The county's average income was 22,721 dollars per person in 1999, with 11.5 percent of the population living in poverty at that time.

B. Population

1. Reference Year Population

The Reference Year for this plan update is 2016. The Richland County population as reported by the Ohio Development Services Agency (ODSA) for 2016 was 121,167. Ohio's solid waste law states that when a municipal corporation is located in more than one solid waste district, the entire corporation is to be included in the jurisdiction of the solid waste district where the majority of the population resides. As a result of this requirement, the RCRSWMA population has been adjusted to include the residents of Plymouth Village who reside in Huron County. A small portion of the Village of Crestline, which is primarily located in eastern Crawford County, is located in Richland County. The Village of Crestline residents that live in Richland County were subtracted from the Richland County reference year population.

The adjusted population of the RCRSWMA for the reference year (2016), is identified as 121,107 (Richland County) – 17 (Crestline in Richland County) + 880 (Plymouth in Huron County) = 123,030 total population in the RCRSWMA.

2. Population Distribution

Cities	Population
Mansfield	46,830
Ontario	6,156
Shelby	9,171

Total 62,157

Villages	Population
Bellville	1,894
Butler	924
Crestline (part)	4521
Lexington	4,766
Lucas	606
Plymouth (part)	1,836
Shiloh	637

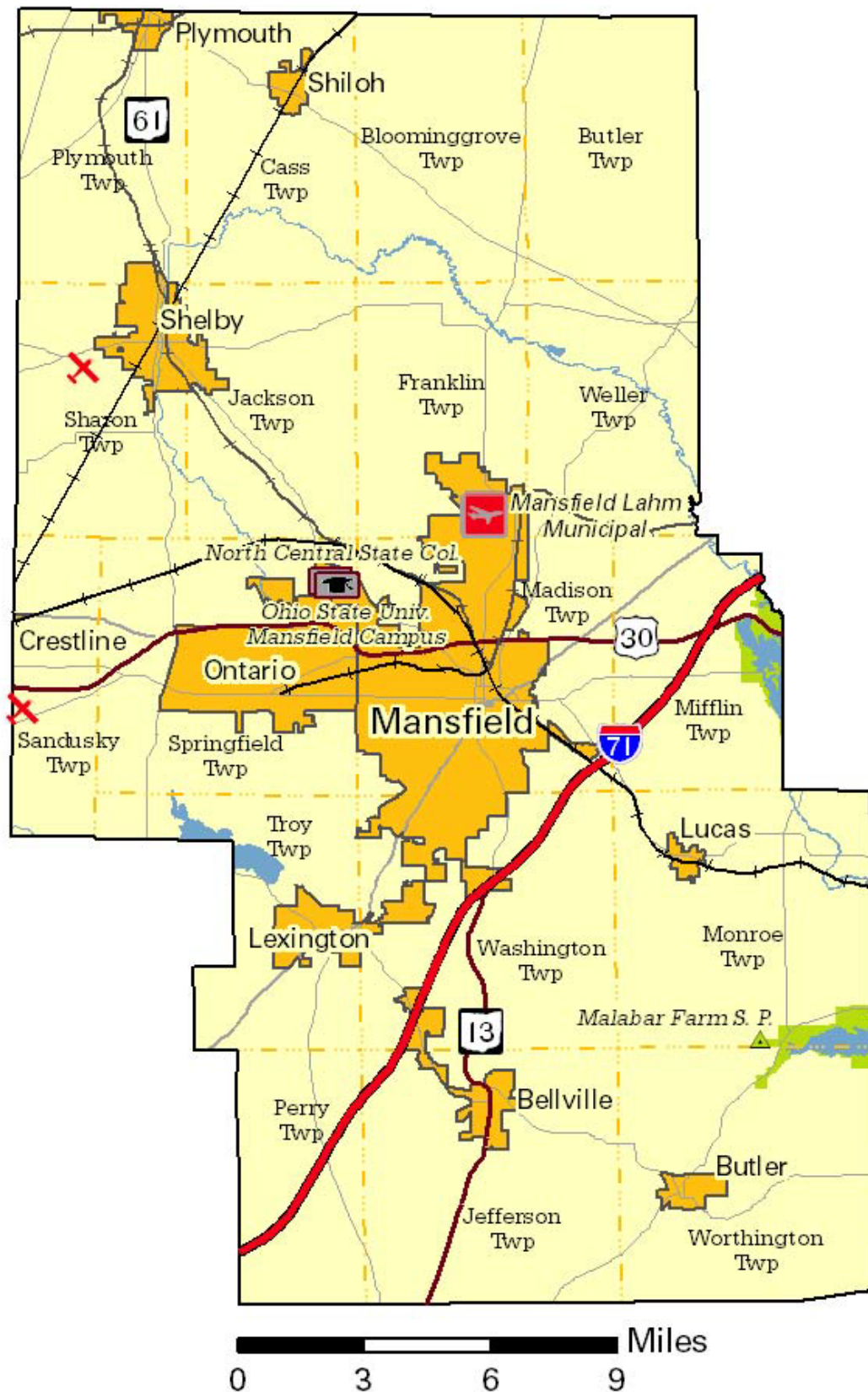
Total 15,184

Townships	Population	
	Incorp	Unincorp
Blooming Grove	1,157	0
Butler	1,386	0
Cass	1,735	1,014
Franklin	1,772	0
Jackson	3,861	2,774
Jefferson	4,531	2,773
Madison	14,680	0
Mifflin	6,218	0
Monroe	2,656	2,036
Perry	1,345	0

Townships	Population	
	Incorp	Unincorp
Plymouth	2,162	1,154
Sandusky	856	853
Sharon	9,720	991
Springfield	9,674	4,371
Troy	6,449	2,403
Washington	6,777	6,643
Weller	1,736	0
Worthington	2,791	1,870

Total 79,506 26,882

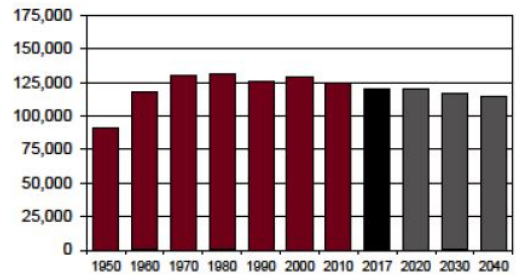
The largest political jurisdiction in Richland County is Mansfield, which has 46,830 people and accounts for 38% of the Richland County population. Approximately 63% of the county's population is located within the borders of the city and 13% are located within one of the villages. The remaining 24% of the population resides in the unincorporated portions of the townships.



3. Population Change

Total Population

Census			Estimated		
1800		1910	47,667	2012	122,625
1810		1920	55,178	2013	122,303
1820	9,169	1930	65,902	2014	121,965
1830	24,006	1940	73,853	2015	121,641
1840	44,532	1950	91,305	2016	121,167
1850	30,879	1960	117,761	2017	120,589
1860	31,158	1970	129,997	Projected	
1870	32,516	1980	131,205	2020	120,200
1880	36,306	1990	126,137	2030	116,640
1890	38,072	2000	128,852	2040	115,160
1900	44,289	2010	124,475		



Data from Ohio Development Services Agency
<https://development.ohio.gov/files/research/C1071.pdf>

The population data from ODSA indicates that the population of Richland County peaked in 1980, had a rebound in 2000, and has declined since that time. The population projections for the county indicate a continued decrease. Similar data from the same source indicates that the overall population of Ohio has steadily increased since 1950 and is projected to level off in the coming years. The population decrease in Richland County has followed the loss of industry in the county. The largest industry to note that left was General Motors in 2008.

4. Implications for Solid Waste Management

The decrease in population for Richland County can have a varied effect on the RCRSWMA's ability to manage waste in the county and maintain recycling services to the citizens. A smaller population will mean less people to generate waste from their residences and less people participating in residential recycling programs. The RCRSWMA intends to maintain the public's access to recycling so the percentage of residential participation in the recycling programs is not expected to change.

Since 2008, there has been an increase in the number of smaller businesses and industry coming into Richland County. The increase in business has led to an increase in the amount of waste generated from commercial and industrial facilities. So even though the population has decreased, the waste generation rate per person in the county has increased. This will have to be addressed in the waste projections for the planning years to ensure that waste generation is not artificially inflated.

C. Profile of Commercial and Institutional Sector

Approximately 80% of the employers in Richland County are commercial and institutional establishments in the private sector. These establishments include trade, transportation, utility businesses, financial services, professional and business services, education and health services, and leisure and hospitality. Additionally, federal, state, and local government agencies employ 9% of the county's workforce. In all, the commercial and industrial sector employs 47% of the Richland County workforce.

D. Profile of Industrial Sector

The Industrial Sector in Richland County includes steel manufactures, metal fabricators, and ancillary industry supporting automotive manufacturers. While these establishments comprise only about 20% of the Richland County employers, they employ nearly 53% of the workforce in the county.

Major & Notable Employers

AK Steel Holding Corp	Mfg
ArcelorMittal/Dofasco Tubular	Mfg
Century Link	Utility
Gorman-Rupp Co	Mfg
Jay Industries	Mfg
Mansfield City Schools	Govt
MedCentral Health System	Serv
Newman Technology/Sankei Giken	Mfg
Richland County Government	Govt
State of Ohio	Govt
Stoneridge Inc	Mfg
Therm-O-Disc/Emerson Electric Co	Mfg

CHAPTER 3 WASTE GENERATION

Purpose of Chapter 3

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

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

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

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

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

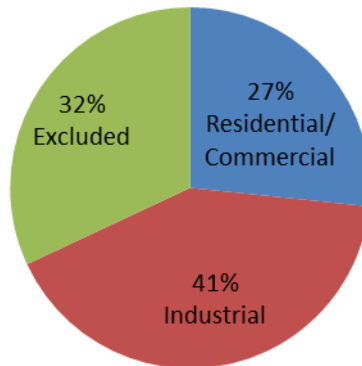
A. Solid Waste Generated in Reference Year

Table 3.1 shows the amount of residential/commercial and industrial waste generated within Richland County in 2016 (the reference year). The amount generated is defined by tons disposed in landfills plus tons recycled, composted, and otherwise diverted from the landfill.

Table 3.1 Solid Waste Generated in the Reference Year

Type of Waste	Quantity Generated (tons)
Residential/ Commercial	126,915
Industrial	197,335
Excluded	152,231
Total	476,481

Waste Type as Percentage of Total Waste Generated



Source(s) of Information: Annual District Report 2016; Ohio EPA website

1. Residential/Commercial Waste Generated in Reference Year

The nearly 127,000 tons of residential and commercial waste generated in Richland County during 2016 is calculated based on the tonnage of municipal solid waste accepted at transfer stations, disposed of through direct haul at a landfill, and recycled through the various programs that are tracked by RCRSWMA.

Based on the 2016 Facility Data Report compiled by Ohio EPA in 2016, there were five landfills that reported direct haul acceptance of 10,166 tons of municipal solid waste generated in Richland County. The Ohio EPA's 2016 Facility Data Report also listed five transfer stations that reported acceptance of 76,517 tons of municipal solid waste generated in Richland County for transfer and disposal.

The Crawford County Landfill accepted the largest portion of direct hauled waste, 8,378 tons or 82%. The Noble Road Landfill located in northern Richland County accepted 1,679 tons or 17% of the direct hauled municipal solid waste reported. The remaining 1% of waste direct hauled to a landfill went to Franklin County Sanitary Landfill (Franklin County), Sunny Farms Landfill (Seneca County) and Countywide Recycling and Disposal Facility (Stark County).

The five transfer stations reported a combined total of 76,517 tons of municipal solid waste accepted for transfer and disposal. The Richland County Transfer Station accepted 74,546 tons or 97% of the waste that was transferred prior to disposal. The other transfer stations accepting Richland County waste were Mid-State Waste Transfer (Morrow County), Huron County Transfer Station (Huron County), Republic Services – Mt Vernon Transfer Station (Knox County) and the Delaware County Transfer Station (Delaware County).

The remaining 40,235 tons of municipal solid waste generated in Richland County in 2016 were recycled by the commercial establishments in the County and through the various programs established by the RCRSWMA. More than 80% of the residential/commercial waste recycled was from the commercial establishments as determined through the 2016 RCRSWMA Annual District Report surveys and the Ohio EPA's Commercial Business Report. The five types of material that made up the largest portion of commercial waste recycled were ferrous metal (33%), corrugated cardboard (29%), yard waste (14%), non-ferrous metal (13%) and "other paper" (12%).

The remaining 20% of the recycled materials reported in 2016 by the RCRSWMA was accomplished through various programs operated in Richland County. These programs included curbside recycling in the Village of Shiloh and drop off recycling throughout Richland County.

2. Industrial Waste Generated in Reference Year

In 2016, 197,000 tons of industrial solid waste was generated in Richland County. This figure is calculated based on the tonnage of industrial solid waste accepted at transfer stations, disposed of through direct haul at a landfill and recycled by the industries generating them and tracked by the RCRSWMA.

Based on the 2016 Facility Data Report compiled by Ohio EPA in 2016, there were five landfills that reported direct haul acceptance of 86,769 tons of industrial solid waste generated in Richland County. The Ohio EPA's 2016 Facility Data Report also listed one transfer station that reported acceptance of 122 tons of industrial solid waste generated in Richland County for transfer and disposal.

The Noble Road Landfill accepted the largest portion of direct hauled industrial waste, 85,864 tons or 99%. The remaining 1% of industrial waste was direct hauled to the Crawford County Landfill (Crawford County), Cherokee Run Landfill (Logan County), American Landfill, Inc. (Stark County) and Pine Grove Regional Facility (Fairfield County). The minimal amount of transferred waste went through the Huron County Transfer Station.

The remaining 110,444 tons of industrial waste generated in Richland County in 2016 were recycled by the generators. These tonnages were reported to the RCRSWMA through the 2016 RCRSWMA Annual District Report surveys. The two types of material that made up the largest portion of commercial waste recycled were ferrous metal (50%) and corrugated cardboard (42%).

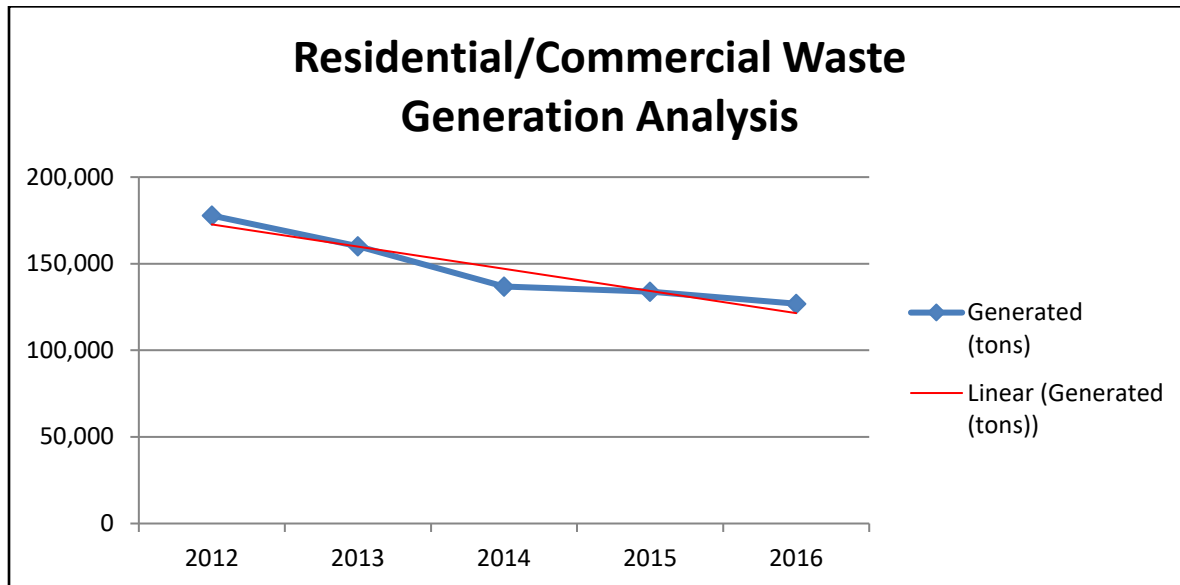
3. Excluded Waste Generated in Reference Year

In 2016, there were 152,000 tons of excluded waste generated in Richland County. Construction and demolition debris made up 14% of the excluded waste. The majority of the excluded waste was reported as exempt waste disposed at the Noble Road Landfill. It is unclear what specific waste streams made up the remainder of this exempt waste. RCRSWMA intends to work with Rumpke in the future to better understand the composition of the exempt wastes disposed at Noble Road to determine if there are avenues to recycle this material.

B. Historical Waste Generated

The period reviewed for historic waste generation includes our reference year (2016) and the four prior years (2012 – 2015). Where appropriate additional data back to 2010 was also used in the historic review period. One major event to note just prior to the review period was the exit of General Motors (GM) from Richland County in 2008. The closure of the GM plant affected the county's population and waste generation. These effects will be discussed in the following sections as well as trends noticed after GM's exit.

1. Historical Residential/Commercial Waste Generated



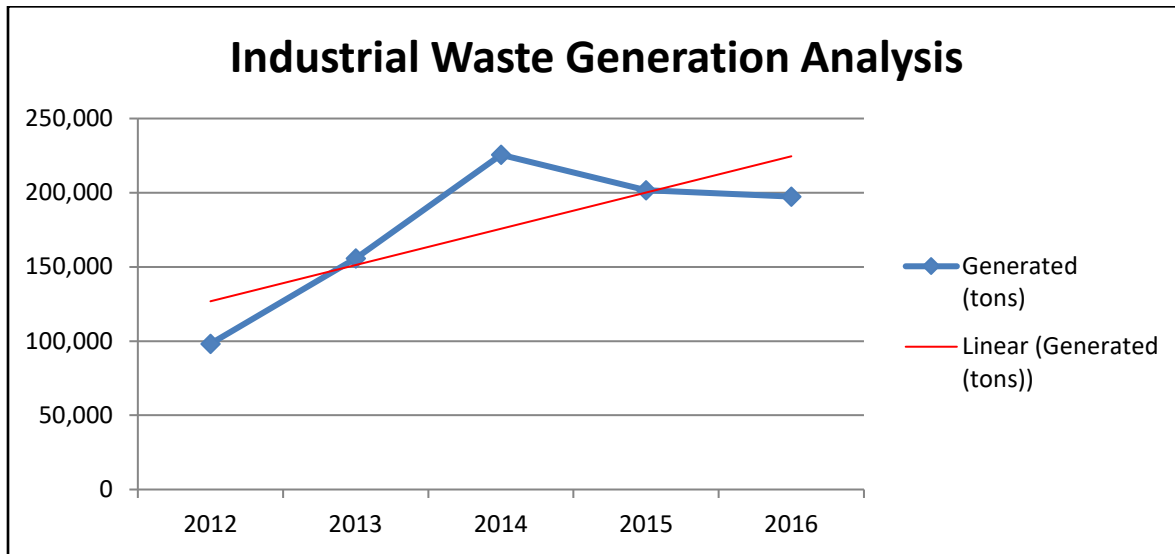
The generation of residential/commercial waste in Richland County has trended downward through the review period. The following is a list of factors that can attribute to the decrease in waste generation and a brief discussion of how the factor could contribute to the decrease.

Population – When GM left Richland County, there was an initial population decrease. Less people in the county would lead to less waste being generated. Over the five years of the review period, the overall population decreased from the high of 125,366 in 2012 to the low of 121,707 in 2015; however, there was a slight increase in 2016 to 122,656. Overall, the population change has been fairly flat though the review period. There are less people in the county, so it would be expected that there is less residential waste being generated.

Electronic records – The evolution of cloud-based-storage has led to an overall decrease in the need for paper records and hard copies. Lowering commercial reliance on the paper has likely added to the decrease in waste generation.

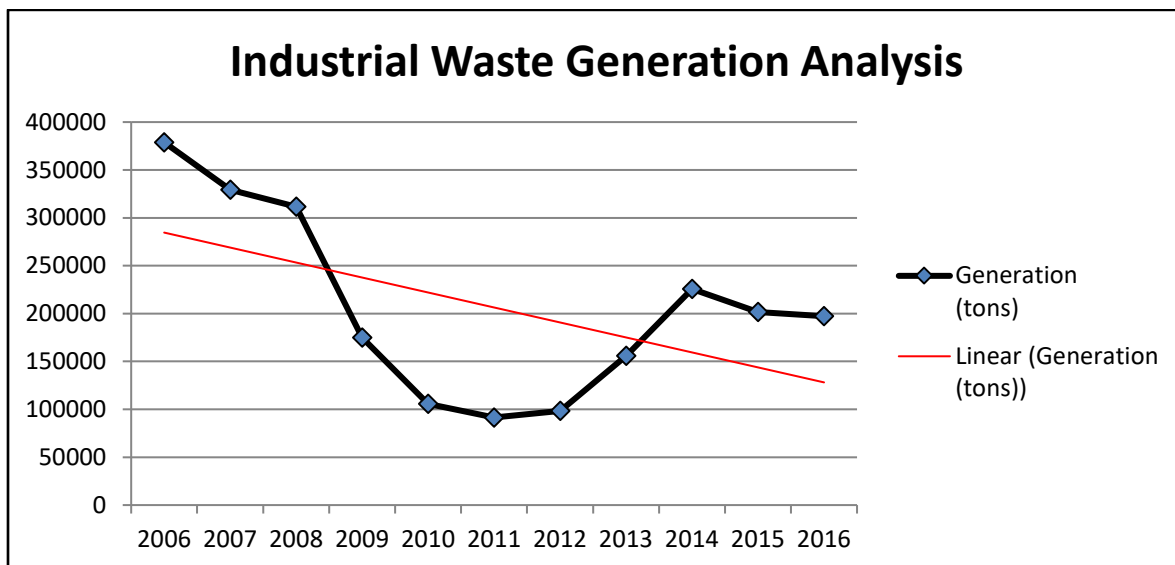
Per capita generation – Every year through the planning period there has been a drop in the per capita generation of residential/commercial waste. In 2012, the per capita generation of waste in Richland County was at 7.77 pounds per person per day. By 2016, it had dropped to 5.67 pound per person per day. Because the population over this period was mostly static, the decrease in the per capita generation is likely due to waste reductions in the commercial sector in the county.

2. Historical Industrial Waste Generated



The data collected during the review period shows that the industrial waste generation in Richland County is on an upward trend. At the beginning of the review period, Richland County was still feeling the effect of GM closing the Mansfield plant. Industry was slow and consequently the waste generation was low. But as time has passed, new industry has moved into the county and the waste generation has increased again. The sharp rise in industrial waste generation from 2012 to 2014 greatly influenced the generation rate for the review period. If we are to assume that the average rate (around 23%) is going to continue, industrial facilities in Richland County will be producing millions of tons of waste within the next 10 years. This trend is not realistic.

An analysis of industrial waste generation in Richland County from 2006 to 2016 encompasses the review period from the previous 5 Year Plan update.

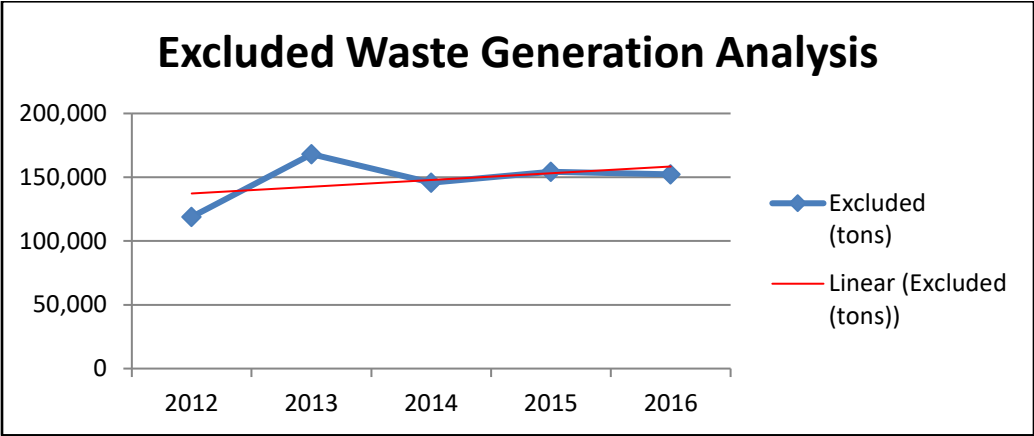


This analysis looks at industrial waste generation in the county prior to and after GM's departure. It shows the sharp decline in generation from 2008 to 2010. From 2010 to 2012 there is little change. From 2012 to 2014, there is a sharp increase in generation, followed by a decline in 2015 and 2016.

in the generation rate. In 2013 and 2014 the generation rate increases as new industrial businesses come into Richland County. In 2015 and 2016 we see the generation rates fall slightly and begin to level off.

If the disposal and recycling numbers that make up the total generation number each year are separated and analyzed individually we find that the changes in the year to year disposal are more drastic than the changes in the year to year recycling rates. During each year that was used in the analysis the majority of industrial wastes generated in Richland County were recycled.

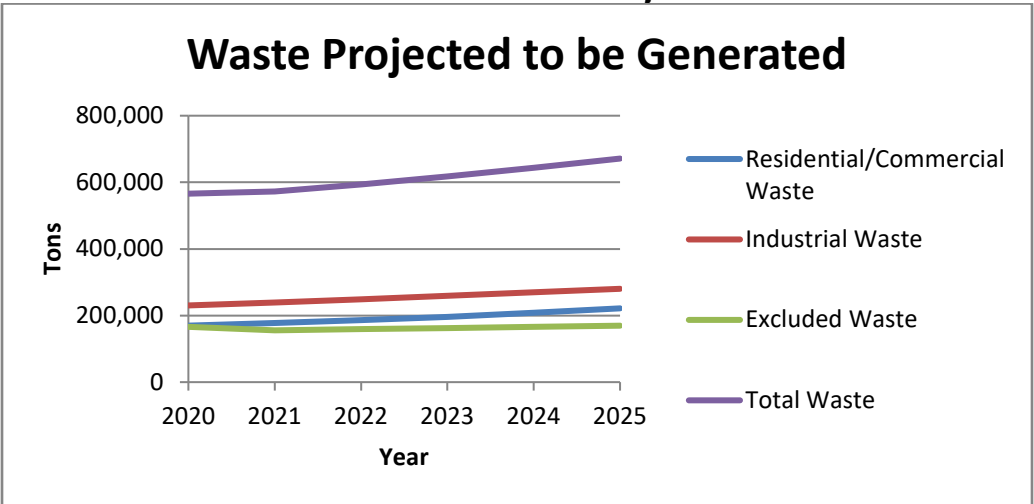
3. Historical Excluded Waste Generated



The excluded waste generated in Richland County has slowly increased through the review period. The excluded waste reported is identified as construction & demolition debris as well as and exempt waste. As stated previously, it is unclear what the specific waste streams were that made up this exempt waste. RCRSWMA intends to work with Rumpke in the future to better understand the composition of the exempt wastes disposed of at Noble Road to determine if there are avenues to recycle this material.

C. Waste Generation Projections

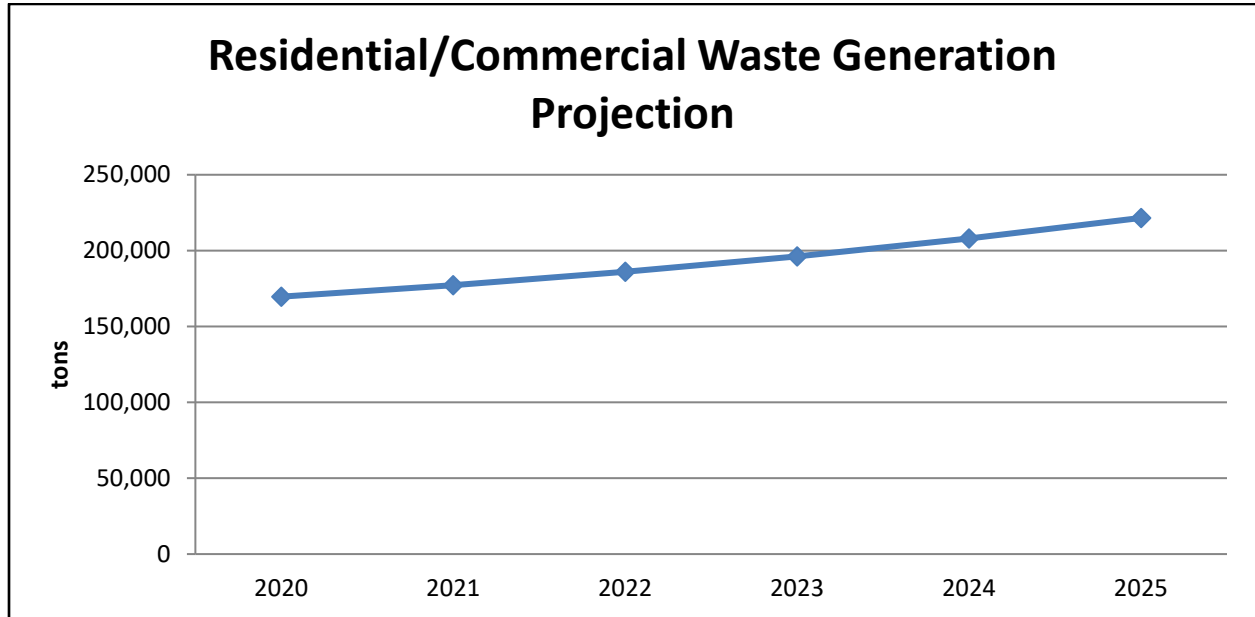
Table 3.2 Waste Generation Projections



Source(s) of Information: Annual District Report 2016; Ohio EPA website

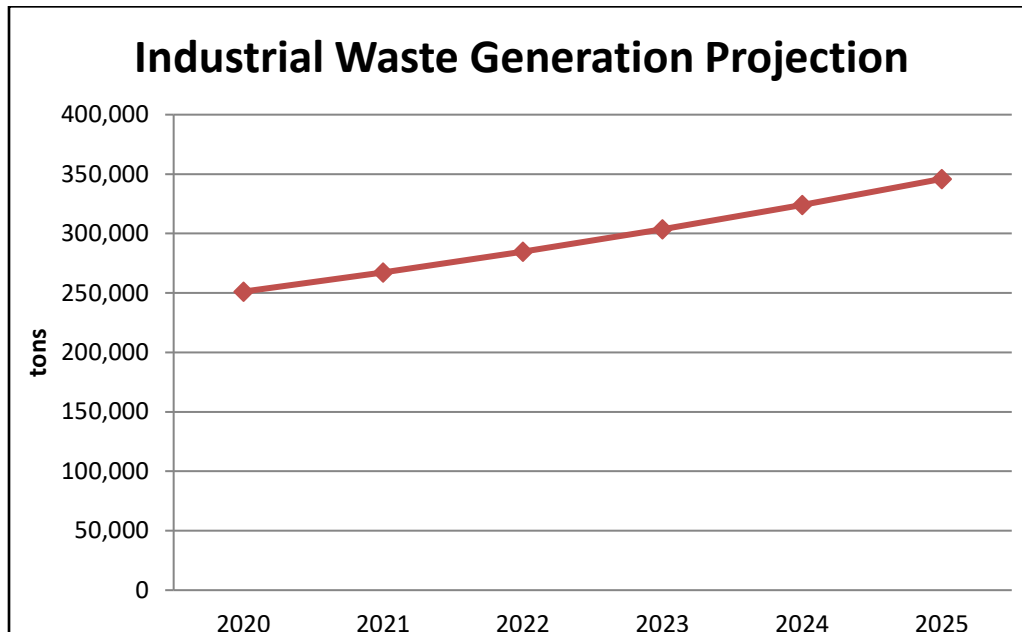
Assumptions: The projected industrial waste generation shown in the graphic was calculated based on the data collected for the 2006 through 2016 RCRSWMA ADR. The additional data points were added to better estimate the rate of change.

1. Residential/Commercial Waste Projections



During the review period, we saw a decrease in the amount of residential/commercial waste generated. Specifically the amount of residential/commercial waste being landfilled decreased; however, the amount being recycled increased. Projecting into the future, the rate at which waste was recycled during the planning period increases faster than the rate at which disposal was decreasing. These two factors result in an overall increase in the generation of solid waste when projected into the future. It is likely that the residential portion will continue to fall as the population falls. However, the commercial aspect of waste generation will be more variable depending on business entering or leaving the county. In order to plan adequately for what may happen in the future, the RCRSWMA is using these numbers, as they should be conservative.

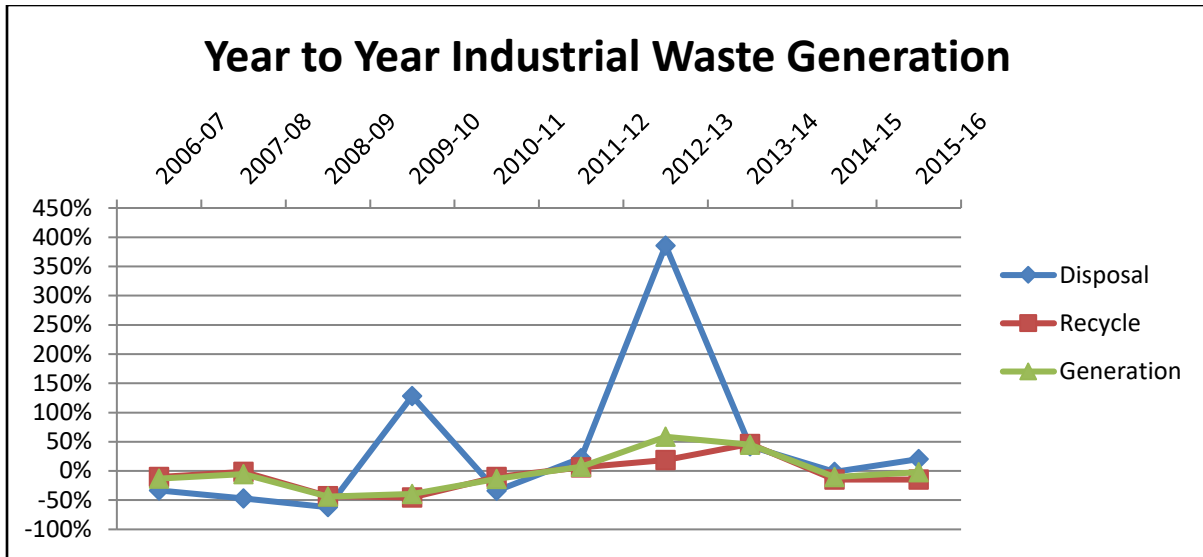
2. Industrial Waste Projections



The data analyzed for the review period (2012 to 2016) indicated an unrealistic rate of increase for industrial waste generation in Richland County. To better analyze the trend of industrial waste generation, data from 2006 to 2011 were added to the review period. This addition indicated that the overall industrial waste generation in Richland County dropped. There was actually a sharp decline after the GM plant closed but a subsequent increase once new industries started coming into the county. Although waste generation did not return to the level it was in 2006.

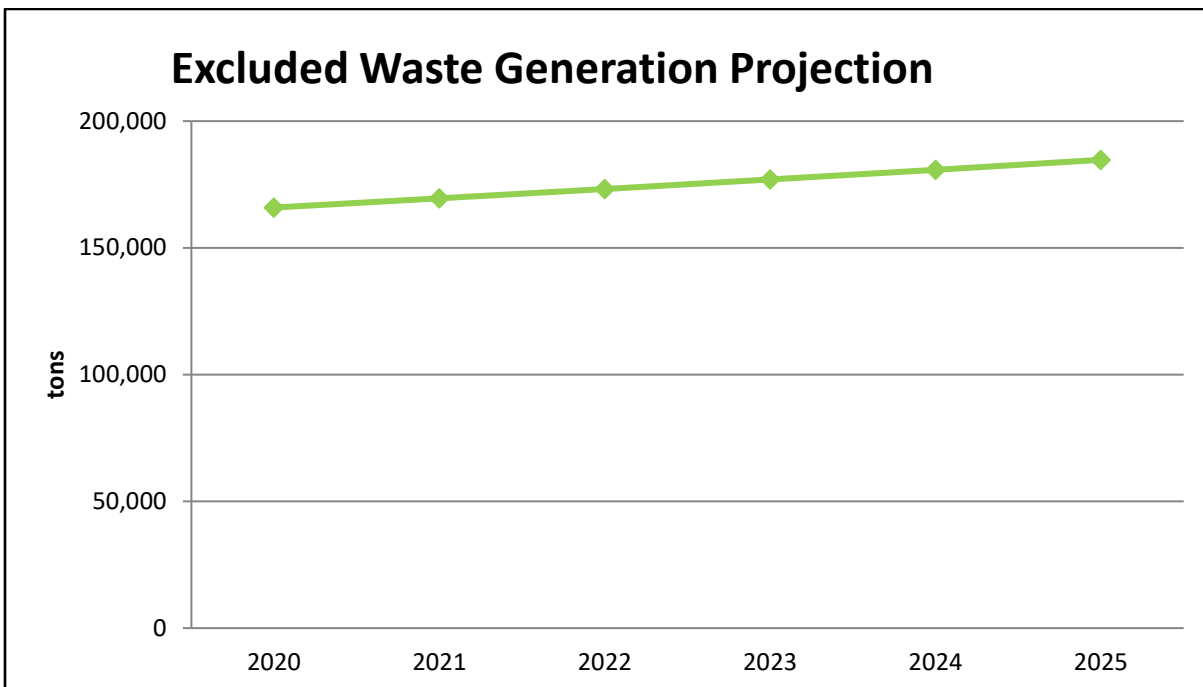
Because the drop in industrial waste generation was attributed to GM's exit from Richland County, and there has been an increase in industry and waste generation since that event, this solid waste plan is using data that shows an increasing rate of industrial waste generation. However, the data has been manipulated to try and calculate a more realistic generation rate increase. As stated above in Section B.2 (Historical Industrial Waste Generated), the initial generation rate calculated for industrial waste was a 23% average yearly increase. This number is not realistic.

When the disposal and recycling numbers were analyzed separately, it was noted that the year-to-year changes in disposal were skewing the overall generation rate. Specifically 2009-10 (128% increase) and 2012-13 (386% increase). These two data points appear to be outliers and have been eliminated from the calculation projecting an industrial waste generation rate for the planning period. To offset the elimination of two years of positive data the two greatest drops in waste disposal (2008-09 (-62%) and 2007-08 (-47%)) were also eliminated from the calculation.



The final calculation for the Industrial waste disposal rate included the year to year changes for 2006-07, 2010-11, 2011-12, 2013-14, 2014-15 and 2015-16. This resulted in a 2.54% projected annual rate increase for disposal during the planning period; add this to an estimated 5% annual increase for recycling during the planning period and the total industrial waste generation rate is estimated to increase annually by 4%.

3. Excluded Waste Projections



The projected generation rate for excluded waste in Richland County is estimated to be 2% year to year. This rate is consistent to that observed during the review period. As part of this plan, RCRSWMA intends to review the excluded waste generation in the county and ensure that all avenues of reduction, reuse and recycling are being considered.

CHAPTER 4 WASTE MANAGEMENT

Purpose of Chapter 4

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

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

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

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

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

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

A. Waste Management Overview

The solid waste generated within Richland County is managed by four major categories: recycling, composting, processing at transfer facilities, and landfilling. The waste delivered to transfer facilities is ultimately sent to landfills for disposal. These methods of waste management are anticipated to continue handling the Authority's waste throughout the planning period. Table 4-1 shows the projections for each management method for first six years of the planning period and indicates that disposal will continue to comprise the largest category.

Table 4.1 Methods for Managing Waste

Year	Generate ¹	Recycle ²	Compost ³	Transfer ⁴	Landfill ⁵
2020	637,285	244,538	3,496	97,305	291,946
2021	663,524	255,848	3,375	101,068	303,233
2022	691,138	267,739	3,258	105,027	315,114
2023	720,196	280,213	3,145	109,194	327,617
2024	750,772	293,383	3,036	113,580	340,773
2025	673,441	307,202	2,930	118,194	354,619

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

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

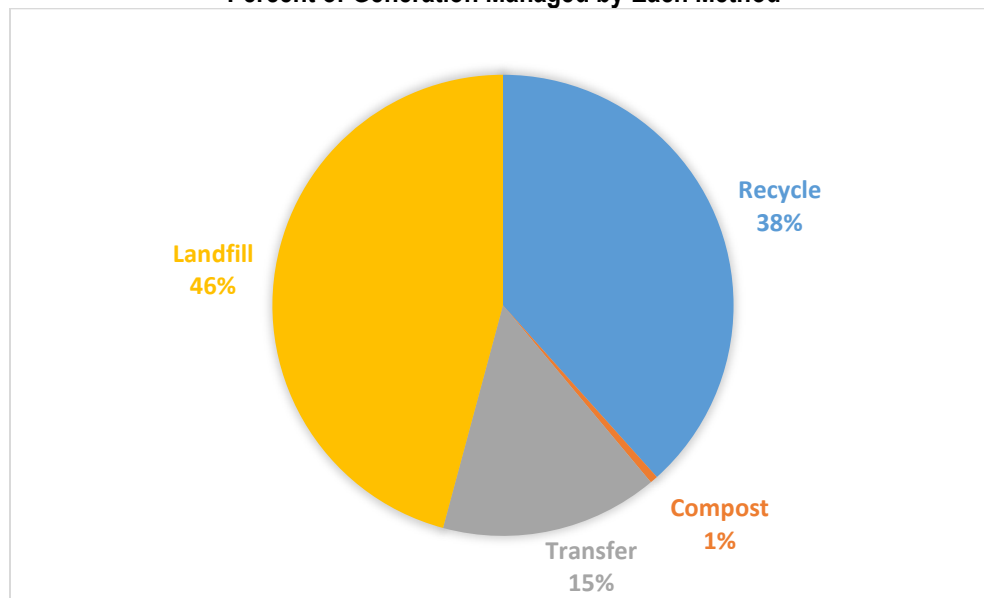
3 "Transferred" is the amount sent to transfer stations prior to delivery to a landfill.

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

The following pie chart shows that recycling as a percentage of total generation for 2020 is projected to be 38%; transferred waste as a percentage of total generation is projected to be 15%; composted material as a percentage of the total generation is projected to be 1%; and the remaining materials that are landfilled are projected to be at 46% of the total generation.

By 2025, recycling as a percentage of total generation is projected to increase to 39 percent and compost is projected to remain at 1 percent while the amount of waste sent to transfer stations prior to final disposal in a landfill is projected to remain at 15 percent. The tonnage sent directly to landfills for disposal is projected to decrease to 45 percent of total generation.

Percent of Generation Managed by Each Method



B. Profile of Waste Management Infrastructure and Solid Waste Facilities used in the Reference Year

The RCRSWMA has one solid waste landfill and one transfer stations within Richland County. There multiple composting and recycling facilities located in the county. All the facilities used by the Authority during 2014 are discussed below.

1. Landfill Facilities

All the landfills which received waste directly (without first being processed at a transfer station) from the Authority during the reference year (2016) are shown in Table 4-2 below. This table illustrates that the majority (90%) of the direct hauled waste was disposed at the Noble Road Landfill, which is publicly available and privately owned. Nobel Road Landfill had 5.3 years of remaining capacity at the end of 2016. The nine other landfills that accepted Richland County waste through direct haul had much greater capacity at the end of 2016 and are identified below. The Noble Road Landfill is in the process of obtaining an expansion permit and anticipates additional capacity will be authorized within the first year of the planning period if not before.

Table 4.2 Landfill Facilities Used by the Authority in the Reference Year

Landfill Name	Location		Waste Accepted from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Crawford County Sanitary Landfill	Crawford	OH	8,378	832	13,155	22,365
Erie County Sanitary Landfill	Erie	OH	0	0	7	7
Franklin County Sanitary Landfill	Franklin	OH	1	0	0	1
Cherokee Run Landfill	Logan	OH	0	14	0	14
Noble Rd Landfill	Richland	OH	1,679	85,864	132,284	219,827
Sunny Farms Landfill	Seneca	OH	85	0	0	85
Countywide Recycling & Disposal Facility	Stark	OH	23	0	6	29
American Landfill, Inc.	Stark	OH	0	30	1972	2,002
Kimble Sanitary Landfill	Tuscarawas	OH	0	0	1	1
Pine Grove Regional Facility	Fairfield	OH	0	29	0	29
Total			10,166	86,769	147,425	244,360

2. Transfer Facilities

The transfer facilities receiving waste from RCRSWMA entities during 2016 are listed in Table 4-3. A smaller percentage of the total waste ultimately sent for disposal was processed by transfer stations compared to the amount of waste which was directly hauled to landfills.

Table 4.3 Transfer and Processing Facilities Used by the Authority in the Reference Year

Facility Name	Location		Waste Received from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Huron County Transfer Station	Huron	OH	217	122	24	363
Richland County Transfer Station	Richland	OH	74,546	0	4,201	78,747
Republic Services - Mt Vernon Transfer Station	Knox	OH	86	0	218	304
Delaware County Transfer Station	Delaware	OH	3	0	0	3
Mid-State Waste Transfer	Morrow	OH	1,665	0	363	2,028
Total			76,517	122	4,806	81,445

3. Compost Facilities

Seven different composting facilities accepted Richland County waste and are identified below in Table 4-4.

Table 4.4 Composting Facilities Used by the Authority in the Reference Year

Facility Name	Publicly Accessible (Y/N)	Location	Food Waste (tons)	Yard Waste (tons)	Total
Willodell Yard Waste	Y	1398 US Route 42 Ashland, OH	0	351	351
Crestline Composting SW		E Bucyrus St & State Rte 181 Crestline, OH	0	59	59
City of Mansfield Public Works Division	Y	480 Park Ave E Mansfield, OH	0	1,539	1,539
Richland County Compost Center	Y	441 Cairns Rd Mansfield, OH	0	2,071	2,071
Mansfield Correction Institution	N	1150 N Main St Mansfield, OH	22	6	28
Richland Correction Institution	N	1001 Olivesburg Rd Mansfield, OH	0	0	0
Hanley Road	N	Hanley Rd W Lexington, OH	0	0	0
Total			22	4,026	4,048

4. Processing Facilities

Table 4-5 shows the companies and facilities which reported processing recyclables from Richland County during the reference year. The list was compiled by analyzing data resulting from the Authority's survey efforts, as well as data published by the Ohio EPA.

Table 4.5 Processing Facilities Used by the Authority in the Reference Year

Facility Name	County	State	Type of Facility	Tons of Material Accepted from SWMD (tons)
Walmart Recycling in Ohio	Richland	Ohio	Commercial	1,736
Lowe's Companies, Inc.	Richland	Ohio	Commercial	231
Home Depot Corporation	Richland	Ohio	Commercial	238
Meijer Corporation	Richland	Ohio	Commercial	562
Target Corporation	Richland	Ohio	Commercial	273
Dollar General Corporation	Richland	Ohio	Commercial	231
Big Lots Corporation	Richland	Ohio	Commercial	46
Aldi Inc Hinckley Division	Richland	Ohio	Commercial	4
Aldi Inc Hinckley Division	Richland	Ohio	Commercial	114
Kohl's Corporate Office & Headquarters	Richland	Ohio	Commercial	112

Facility Name	County	State	Type of Facility	Tons of Material Accepted from SWMD (tons)
Rumpke Waste Recycling	Richland	Ohio	Recovery Facility	3,205
Milliron Industries Recycling & Waste Mgt.	Richland	Ohio	Recovery Facility	6,383
Richland County Recycling & Transfer Facility	Richland	Ohio	Recovery Facility	
Total				13,135

5. Other Waste Management Facilities

The Authority did not identify any other methods used for waste management during the reference year.

C. Solid Waste Facilities Used in the Planning Period

In general, the RCRSWMA anticipates that facilities which were used to manage Authority-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 Authority's needs. The Noble Road Landfill which received a substantial percentage of Authority-generated waste during 2016 is estimated to have a minimum of 5 years remaining capacity but is actively pursuing an expansion permit that is anticipated to be issued prior to the first year of the planning period.

Transfer stations have processed a substantial percentage of the Authority's waste in past years, and are expected to do so throughout the planning period. No information currently available to the RCRSWMA suggests that the existing transfer stations used by Richland County generators will close in the near future.

The amount of materials composted throughout the planning period is expected to decline. However, the projected decrease should not be significant. As the number of operating composting facilities processing the majority of yard waste from Richland County is not expected to change, composting facility capacity should be adequate throughout the planning period.

D. Siting Strategy

Purpose of the Siting Strategy

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

Although unlikely, the policy committee can conclude that 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.

The RCRSWMA does not plan to site or build any RCRSWMA owned or financed solid waste transfer or disposal facilities during the planning period. The RCRSWMA does not plan to site any privately owned transfer or solid waste disposal facilities to serve RCRSWMA needs.

If a private owner decides to site a waste disposal facility or transfer station in Richland County, which requires a permit, the RCRSWMA will review the permit applications that are submitted to Ohio EPA and will actively participate in the public review and comment process. RCRSWMA has chosen not to include a siting strategy in this plan because the RCRSWMA does not believe that it has the necessary authority to approve or deny facility siting.

The RCRSWMA does not believe that a formal siting process is necessary for facilities that do not require solid waste facility permits, like recycling facilities. These facilities are subject to local zoning and building regulations and should be treated like other manufacturing and processing facilities.

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.

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

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

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

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

1. Description of the SWMD's Designation Process

Authorization Statement to Designate

The Board of Directors of the Richland County Regional Solid Waste Management Authority is hereby authorized to establish facility designations in accordance with ORC Section 343.014 of the Ohio Revised Code after this plan has been approved by the director of the Ohio Environmental Protection Agency.

Description of the SWMD's Designation Process

Decisions regarding designation or the granting of a designation waiver shall be made by the Authority, following a review of the request by the Board of Directors.

Where the Authority designates facilities, it may grant a waiver to a non-designated entity to provide solid waste disposal, transfer or resource recovery facilities or activities at any time after the plan update is approved and in accordance with the criteria specified in ORC 343.01(I)(2). The Board of Directors will evaluate each request for designation or waiver based upon, at least, the following general criteria:

- The facility's compatibility with the Authority's Solid Waste Management Plan.
- The facility's compliance with all rules promulgated by the Authority and the Authority's Solid Waste Management Plan

2. List of Designated Facilities

At the present time, the Richland County Regional Solid Waste Management Authority has not designated facilities to which RCRSWMA waste must be taken. However, RCRSWMA reserves the right to designate a facility or facilities in the future.

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 14 analyses that allowed the policy committee to obtain a holistic understanding of the SWMD by answering questions such as:

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

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

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

The RCRSWMA believes that the highest priorities identified during this Plan Update process were to continue implementation of all existing programs, work with local businesses and industry to improve the annual survey responses and enhance its education, awareness and outreach programs. The Authority reserves the right to ensure the implementation of these programs and initiatives first and before all other secondary new programs or initiatives. The RCRSWMA also realizes that the existing staff resources and budgetary constraints are limited and can also be a reason that certain newly identified programs or initiatives may or may not be implemented. This explains why many of the newly identified programs and initiatives contained in Appendix I and this Chapter may be considered for implementation versus will be implemented.

A. Program Evaluations and Priorities

1. Strategic Analysis

All existing RCRSWMA programs have been evaluated qualitatively in terms of the suggestions included within Ohio EPA's guidance document (i.e., Format v4.0), and the strengths and

weaknesses identified for each program. For programs which have data available, quantitative evaluations were incorporated, also. The Authority conducted additional analyses for subject areas or issues not necessarily related to an existing program where appropriate.

The following table lists the 14 analyses conducted by the Authority, and defines the programs which were evaluated within each analysis. For example, the first analysis involved evaluating programs as well as topics/needs for residential recycling infrastructure. This analysis was subdivided into sections addressing drop-off recycling, curbside recycling, and recycling provided through special collections. Two existing programs were evaluated under drop-off recycling:

- Drop-off Recycling for Public Sites; and
- SCRAP Trailer at the Schools and Community locations

Listing of Authority's 14 Analyses: Strategic Evaluation

#	Section Name	Subsection	Authority Program or Topic Name/Description
1	Residential Recycling Infrastructure Analysis	A. Drop-off Recycling	Drop-off Recycling for Publicly Available Sites
			SCRAP Trailer at Schools and Community Host locations
		B. Curbside Recycling	Village of Shiloh non-subscription Curbside Recycling Program
			City of Mansfield subscription Curbside Recycling Program
			City of Lexington subscription Curbside Recycling Program
			City of Ontario subscription Curbside Recycling Program
			Tons Recovered
		C. Special Collections	Mid-Ohio Recycling Facility
2	Commercial/Institutional Sector Analysis		
3	Industrial Sector Analysis		
4	Residential/Commercial Waste Composition Analysis		
5	Economic Incentive Analysis		
6	Restricted and Difficult to Manage Waste Streams	A. Scrap Tires	
		B. HHW	
		C. Lead-Acid Batteries	
		D. Appliances	
7	Diversion Analysis	A. Residential/Commercial Sector	
		B. Industrial Sector	
8	Special Program Needs Analysis		
9	Financial Analysis	A. Revenues	
		B. Expenditures	
		C. Balances	
10	Regional Analysis		
11	Population Analysis		
12	Data Collection Analysis	A. Data Reporting Program	
13	Education/Outreach Analysis		
14	Recyclable Material Processing Capacity Analysis		

Each of the Authority's programs or topics listed in the table above were evaluated using information which was available. For drop-off recycling, the Authority examined:

- The locations of drop-offs to determine if the current number of sites is adequate and convenient for residents in each city, village, and township;
- The types of materials accepted at each drop-off;
- The operation of the drop-off program;
- The education and awareness efforts used to inform residents how to use the program effectively

2. Conclusions and Priorities

The strategic analysis conducted by the RCRSWMA identified strengths and weaknesses for existing programs and challenges the Authority faces to improve certain programs. The topics or issues potentially needing to be addressed through some type of new initiative were also identified through this process.

After compiling a list of all the existing programs and the new initiatives, the Authority staff and the Board of Directors employed a ranking system to prioritize solid waste management efforts within Richland County. Each existing program and new initiative were scored from 1 to 5 based upon its importance and feasibility/ease of implementing. All programs and initiatives with a score of "4" or "5" are recommended for implementation, as well as some with a ranking of "3." All others are not recommended at this time.

The ranking process recommends that all existing programs be continued through the planning period associated with this Plan Update (2020 – 2034). Several new initiatives are also recommended for potential implementation, and are listed in the following table. For a complete listing of all existing programs and initiatives, including those with a ranking of "1", "2", or "3", see Appendix I. In many cases, the new initiatives are intended to address problems identified for an existing program, or to enhance an existing program.

A complete listing and description of all Authority programs and new initiatives recommended for implementation with this Plan Update is provided below in Section B, "Program Descriptions".

Program Category	Action or Program Name
<i>Residential Recycling Infrastructure</i>	
Curbside Recycling Services	Continue existing programs
	Facilitate implementation of non-subscription curbside collection in villages and townships
	Facilitate the formation of collection consortiums
Drop-off Recycling: Publicly Available Sites	Continue existing program
	Minimize contamination and littering
Drop-off at Schools	Continue existing program
<i>Commercial/Institutional Sector Reduction/Recycling</i>	
Drop-off Recycling	Continue existing program

Program Category	Action or Program Name
Education/Awareness	Continue existing program
Industrial Sector Reduction/Recycling	
Recycling Center	Continue existing program
Waste Assessments and Audits	Continue existing program
Restricted/Difficult to Manage Wastes	
Scrap Tires	Explore ways of reducing collection event costs
	Encourage residents to turn in old tires at dealers
HHW	Explore collection options for HHW materials not accepted locally
Lead Acid Batteries	Continue existing program
E-Waste	Continue existing program
	Develop sustainable options for collection of TVs
	Evaluate cost containment options
Appliances	Continue existing program
Household Batteries	Continue existing program
Bulk Items	Continue existing program
Outreach, Education, Awareness, and Technical Assistance	
Authority Website	Track the number of visits to the website.
Authority Website	Minimize the website's "down time" by fixing pages that are under construction as quickly as possible.
Presentations	Promote availability of presentations to non-school groups (civic groups) using a variety of means, such as posting on the Authority website and employing the support of related organizations to promote presentations to members, such as the Chamber of Commerce.
Presentations	Begin tracking the number of individuals reached by each presentation and the name of each school so the Authority can identify the number of students and schools reached each year.
Presentations	Request that educators or group leaders complete a feedback form after a presentation has been completed.
Presentations	If available, track recycling tonnage from schools with recycling programs to estimate if there is a correlation between presentations given and waste diverted.
Adopt-a-Road	Identify groups that have a volunteer requirement or organizations that typically perform community service and target these groups to receive information about the Authority's Adopt-a-Road program.

Program Category	Action or Program Name
Adopt-a-Road	Begin tracking additional program statistics, such as the number of bags collected, weight of bags collected, and/or number of hours volunteered.
Educational Displays	Ensure promotional items display the Authority's contact information and that flyers for each target audience are available at the display.
Educational Displays	Begin tracking or estimating the total publications that are distributed at each event each year, the total number of events attended, and/or increased traffic to the Authority's website following an event.
Contests	Inform more school districts about contests to increase participation.
Contests	Add additional measures of effectiveness, such as tracking whether contests change behavior by tracking whether recycling tonnage increases at participating schools and/or track number of locations where contest winners' posters are displayed.
Business/Industrial Sector Waste Audits	Increase number of businesses that participate in waste audits by identifying top generators in the Authority from annual ADR survey results and reach out to businesses directly to inquire about interest in receiving an audit.
Business/Industrial Sector Waste Audits	Follow up with entities who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis.
Business/Industrial Sector Waste Audits	Request feedback from establishments that participated in an audit to identify how the Authority can further serve this audience more effectively.
Funding	
Funding	Continue existing funding sources
Grants	Promote community development grant to communities and institutions
	Promote market development grant to businesses
Economic Incentives	
Technical Assistance	Continue existing program
Facilities	
Recyclables	Continue existing program
Data Collection	
Data Collection	Contact set number of businesses annually

B. Program Descriptions

1. Residential Recycling Infrastructure

Curbside Recycling Services

The existing non-subscription curbside recycling services available to residents of the Authority in the reference year are expected to continue. The two programs are shown below in the following table. Rumpke operates the curbside recycling programs in Shiloh, Mansfield, Lexington and Ontario. The materials which residents can recycle through curbside collection include:

- Newspaper
- Magazines
- Books
- Miscellaneous paper/shredded paper
- Boxboard, cereal boxes, etc.
- Corrugated cardboard
- Aluminum/steel/tin cans, glass – all colors- and #1 - #7 plastic containers

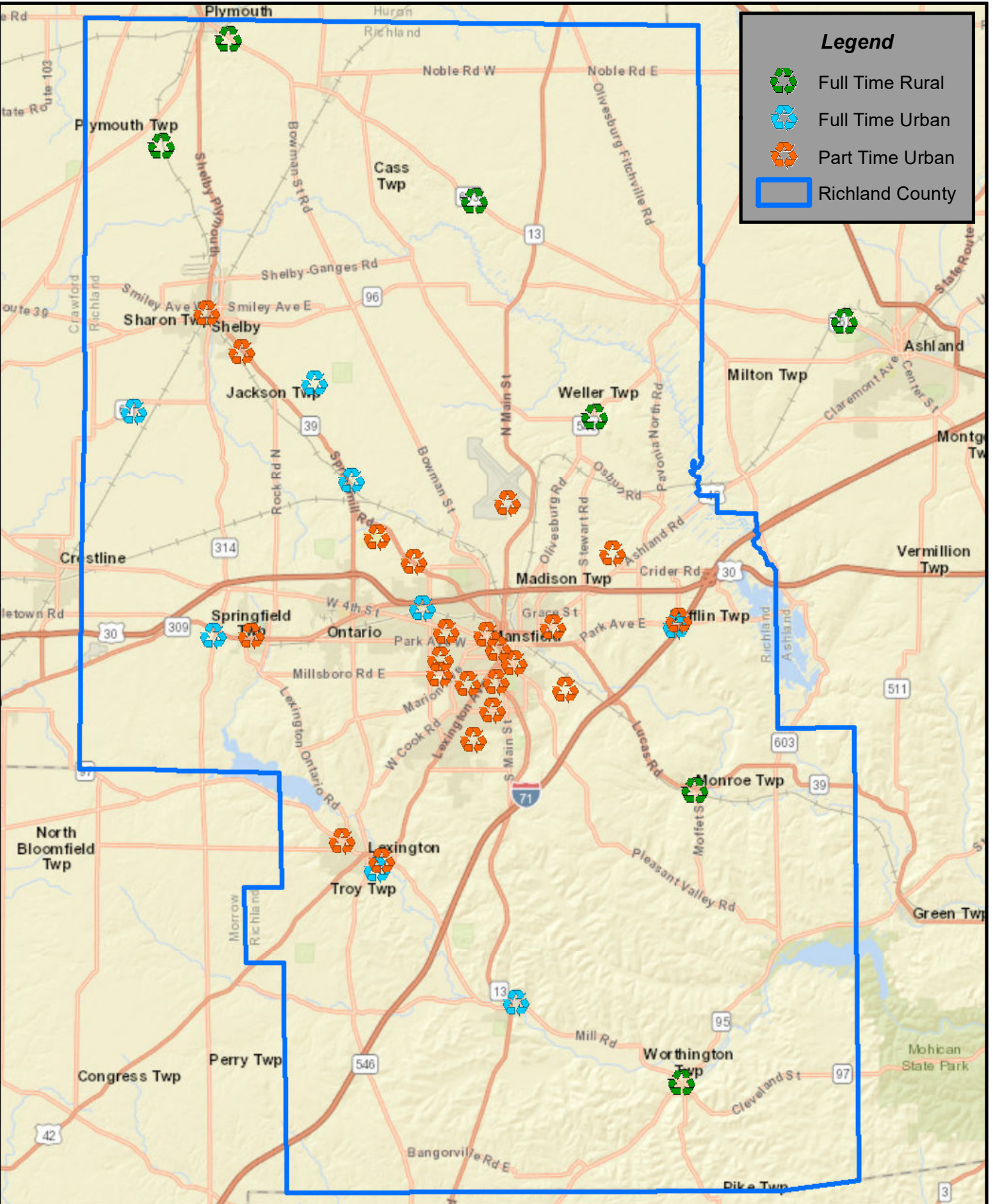
For additional details regarding these curbside programs, see Appendix B.

In addition to the existing curbside programs, the Authority's strategic analysis and ranking process identified two programs/initiatives to be considered for implementation during the planning period:

- Facilitate implementation of non-subscription curbside collection in villages and townships.
Communities that are interested in implementing non-subscription curbside programs can come to the Authority for assistance. The Authority will work with these communities to prepare a cost benefit analysis to be used in the decision making process of whether or not to implement non-subscription curbside.
- Facilitate the formation of collection consortiums.
The Authority will work with interested communities in Richland County to help them determine if there is a beneficial partnership that can be created to increase the efficiency of waste and recyclable collection while hopefully reducing costs.

Drop-off Recycling: Publicly-Available Sites

The drop-off recycling program for publicly-available sites will continue. A map of drop-off recycling sites within Richland County is shown below as well as a listing of those sites in the following table.



The publicly-available drop-off program includes eight sites categorized as “full-time urban” (one of these is located at the Mid-Ohio Recycling Facility) and seven sites which are “full-time rural.” All of these locations except the one at the Mid-Ohio Recycling Facility are open seven days per week for 24 hours each day. Twenty-one additional sites are part of the SCRAP Trailer program and are classified as part-time urban. These SCRAP Trailer sites are available on a rotating basis, generally one day per month. One additional part time urban site is located at the Ohio Air National Guard base. This facility is open to the guard base.

The Authority will continue to evaluate the potential to add, the need to remove, or adjust sites on an ongoing basis.

Residential Recycling Infrastructure Programs: 2018-2032

Program	Sub Category	ID	Description	Start Date	End Date	Goal(s)
Curbside Recycling Services	Non-Subscription Curbside Recycling	NCS1	Village of Shiloh	Ongoing	Ongoing	1, 2,7
	Subscription Curbside Recycling	SC1	Mansfield	Ongoing	Ongoing	1,2,7
		SC2	Lexington			
		SC3	Ontario			
	Technical Assistance		Encourage implementation of non-subscription curbside collection in villages and townships	As communities show interest		1,2,7
	Technical Assistance		Encourage the formation of collection consortiums as appropriate	As communities show interest		3,4
Drop-off Recycling	Full Time Urban	FTU1	RCSWMA Recycling Drop-off Facility	Ongoing	Ongoing	1,2,7
		FTU2	Jackson Township Garage	Ongoing	Ongoing	1,2,7
		FTU3	Jefferson Twp. & Washington Twp.	Ongoing	Ongoing	1,2,7
		FTU4	Lexington Village Maintenance Garage	Ongoing	Ongoing	1,2,7
		FTU5	Mifflin Township Fire Department	Ongoing	Ongoing	1,2,7
		FTU6	Sharon Township Garage	Ongoing	Ongoing	1,2,7
		FTU7	Milliron Industries	Ongoing	Ongoing	1,2,7
		FTU8	Richland County Recycling & Transfer Facility	Ongoing	Ongoing	1,2,7
		FTU9	Springfield Township Road Department	Ongoing	Ongoing	1,2,7
	Part-Time Urban	PTU1	Auburn Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7

Program	Sub Category	ID	Description	Start Date	End Date	Goal(s)
		PTU2	Brinkerhoff Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU3	Discovery School SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU4	Dowds Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU5	Early Childhood Center SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU6	Eastern-Lexington SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU7	Eastview Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU8	Madison Jr. High School SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU9	Madison South Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU10	Malabar Middle School SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU11	Mansfield Christian School SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU12	Mifflin School SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU13	Ontario United Methodist Church SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU14	Newman Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU15	Foundations Academy of Mansfield SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU16	Prospect Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU17	Shelby Central School SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU18	Sherman Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU19	St. Peters Elementary SCRAP Trailer	Ongoing	Ongoing	1,2,7
		PTU20	Western Elementary	Ongoing	Ongoing	1,2,7
		PTU21	Woodland Elementary	Ongoing	Ongoing	1,2,7
		PTU22	Ohio National Guard	Ongoing	Ongoing	1,2,7
	Full-Time Rural	FTR1	Bloomington Twp.	Ongoing	Ongoing	1,2,7
		FTR2	Weller Township at Crestview High School	Ongoing	Ongoing	1,2,7
		FTR3	Monroe Twp. and Lucas Village	Ongoing	Ongoing	1,2,7

Program	Sub Category	ID	Description	Start Date	End Date	Goal(s)
		FTR4	Plymouth Twp.	Ongoing	Ongoing	1,2,7
		FTR5	Plymouth High School	Ongoing	Ongoing	1,2,7
		FTR6	Weller Twp.	Ongoing	Ongoing	1,2,7
		FTR7	Worthington Township in Butler Village	Ongoing	Ongoing	1,2,7
	Add, remove or adjust sites as needed			2020	2034	1,2,7
	Minimize contamination and littering through additional education and signage			2020	2034	N/A

2. Commercial/Institutional Sector Reduction and Recycling Programs

Drop-Off Recycling: Small Businesses

The Authority's drop-off collection services for small businesses will continue. This service will be evaluated throughout the planning period to determine the need for additional collections or modifications to existing service.

Waste Assessments/Waste Audits

The Authority will continue to offer waste assessment and waste audits to businesses within the County. No changes are anticipated for this program.

Commercial/Institutional Sector Authority Programs: 2018-2032

Program	ID	Description	Start Date	End Date	Goal(s)
<i>Collection Service</i>	8961	RCSRWMA government and institution collection route. *Although the Authority plans to continue this service, it is not a required part of this Plan and may substitute drop-off facilities for commercial paper and OCC in conjunction with residential drop-offs in convenient locations for commercial recyclers.	Ongoing	Ongoing	1,2,7
	Add, remove or adjust collection route as needed		Ongoing	Ongoing	1,2,7
<i>Waste Audits and Assessments</i>	NA	Continue providing waste audits and assessments	2020	2034	3,4
		Follow up with entities who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis.	2020	2034	3,4
		Request feedback from establishments that participated in an audit to identify how the Authority can further serve this audience more effectively.	2020	2034	3,4

3. Industrial Sector Reduction and Recycling Programs

The waste assessment/waste audit program will continue for the industrial sector. The Authority will implement a follow up process with companies that have completed a waste audit or

assessment to determine if any changes in their waste management practices were implemented and what benefits they realized from the changes.

Program	ID	Description	Start Date	End Date	Goals
Waste Audits and Assessments	NA	Continue providing waste audits and assessments	2020	2034	3,4
		Follow up with entities who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis.	2020	2034	3,4
		Request feedback from establishments that participated in an audit to identify how the Authority can further serve this audience more effectively.	2020	2034	3,4

4. **Restricted/Difficult to Manage Wastes**

Yard Waste

The Authority anticipates that all of the yard waste programs which operated during the reference year will continue. The existing yard waste programs which will continue include the field spreading of leaves by cities, villages and townships. The Authority will continue to offer education and information to the through the website and printed materials regarding yard waste management and composting.

Household Hazardous Waste

The Authority will continue to provide education and information to the public regarding the proper disposal of household hazardous wastes. In addition, the Authority will hold limited HHW and “difficult to manage waste collections as funds are available.

Scrap Tires

The Authority will continue to offer education and outreach to the public through its website and other means with regard to the proper management of scrap tires. Scrap tire collections will also continue. The Authority will explore ways of reducing costs for collection events and encourage residents to turn in old tires at dealers when buying new tires.

Electronic Equipment

The Authority will continue to publicize the collection of electronic equipment at the Mid-Ohio Recycling Facility. Reduction of collection costs are continuously explored by the Authority.

Lead-Acid Batteries

The Authority provides information on its website and in paper flyers, which list numerous businesses that accept lead-acid batteries. Collection programs and education for residents for proper management of lead-acid batteries will continue at the Mid-Ohio Recycling Facility.

Appliances

The Authority will continue to publicize the collection of appliances at the Mid-Ohio Recycling Facility. Reduction of collection costs are continuously explored by the Authority.

Program	Description	ID	Start Date	End Date	Goals
Household Hazardous Waste	Education program for HHW, electronics, and lead-acid batteries		Ongoing	Ongoing	3,4
	Limited HHW and “difficult to manage waste” events. *Optional events to be held to meet identified needs if funds are available.	6589	Ongoing	Ongoing	2,5,7
Scrap Tires	Year-round tire collection at RCRSWMA Mid-Ohio Recycling facility	6586	Ongoing	Ongoing	2,5,7
	Explore ways of reducing collection event costs	N/A	Ongoing	Ongoing	5
	Encourage residents to turn in old tires at dealers	N/A	2020	2034	3,4
Electronics	RCRSWMA Mid-Ohio Recycling Facility Year-Around Electronics, Appliance and Tire Collection *Anticipated service of RCRSWMA but may be discontinued if private sector alternatives are available and if RCRSWMA funds are available.	6569	Ongoing	Ongoing	5,7
	Evaluate cost containment options	N/A	2020	2034	5,7
Lead-Acid Batteries	Lead-acid battery collection at RCRSWMA Mid-Ohio Recycling Facility	6594	Ongoing	Ongoing	2,5,7
Appliances	Appliance collection at RCRSWMA Mid-Ohio Recycling Facility	6569	Ongoing	Ongoing	2,5,7
Yard Waste	RCRSWMA Compost Facility	6597	Ongoing	Ongoing	2,5
	Mansfield compost facility	8962	Ongoing	Ongoing	2,5
	Field spreading of leaves by cities, villages and townships	8963	Ongoing	Ongoing	2,5
	Composting and “don’t bag it” education provided by RCRSWMA staff and programs	6596	Ongoing	Ongoing	5

5. Funding/Grants

The Authority will continue to implement their current funding sources and apply for grants as necessary to improve the implementation of the recycling and waste management programs in

Richland County. The Authority will continue to assist the Richland County Health Department with funding to offset the cost of implementing their programs to monitor the management of solid waste in Richland County.

As appropriate, the Authority will promote community development grants and market development grants to the communities and businesses of Richland County.

Economic Incentives

The Authority will communicate with the communities and businesses in Richland County regarding recycling opportunities or marketing information to which they become aware. Opportunities to partner or foster partnerships that enhance the Authority's programs will be encouraged.

The Authority will continue to provide technical assistance to communities and businesses with regard to the design of recycling and waste reduction programs. As part of the technical assistance, the Authority promotes the use of collection strategies, which provide economic incentives encouraging waste reduction.

Program	Description	ID	Start Date	End Date	Goals
<i>Funding/Grants</i>					
<i>Funding</i>	Continue existing funding sources	N/A	Ongoing	Ongoing	
	Health Department funding	6602	Ongoing	Ongoing	
<i>Grants</i>	Promote community development grant to communities and institutions	N/A	Ongoing	2034	Varies
	Promote market development grant to businesses	6584	Ongoing	Ongoing	3,4
<i>Economic Incentives</i>					
<i>Technical Assistance</i>	Guidelines and methodology for performing waste audits	6582	Ongoing	Ongoing	3,4
	Communicate recycling opportunities, goals and marketing information to industrial, commercial and residential sectors	8978 6585	Ongoing	Ongoing	3,4

6. Facilities

The Authority will continue to operate the Mid-Ohio Recycling Facility throughout the planning period.

The post-closure activities at the closed Richland County Landfill will be ongoing throughout the planning period. In the past, the costs to manage this facility have been somewhat unpredictable. The Authority will continue to monitor the landfill and try to predict funding needs in an attempt to plan and budget for necessary projects.

7. Data Collection

The Authority collects data each year from entities located both within Richland County and facilities located outside the County. Disposal data is reported to the Authority by solid waste

facilities which remit fees to the Authority. The Authority also receives data from Ohio EPA each year.

Each year the Authority also conducts a survey to obtain recycling data, composting data, and hauling information as a part of preparing the annual district report to be submitted to the Ohio EPA. The Authority will continue its existing data collection program, which is described in detail in Appendix H. In addition, the Authority intends to contact a set number of businesses each year to facilitate data collection and provide technical assistance.

Program	Description		ID	Start Date	End Date	Goals
Data Reporting Program	Annual Surveying	Authority sends surveys to commercial and industrial businesses annually.	8959 8960	Ongoing	Ongoing	9
	Survey Follow-Up	Contact set number of businesses annually	N/A	2020	2034	9

8. Outreach, Education, Awareness, and Technical Assistance

Web Page

The Authority maintains a website to provide many different types of information to the public. The website will continue, and the Authority will continue to improve the usefulness of the website by improving the ease of its use and evaluating its use.

Resource Guide

Each year and as changes occur, the Authority updates the Recycling Guide, which is a comprehensive list identifying recycling opportunities for residents and businesses. The guide is available on the website and the Authority will continue to make printed copies available for distribution at community events and presentations.

Education Provider

During the reference year, the Authority employed an Education Coordinator to perform education and outreach activities. The Education Coordinator conducts in-school and civic group presentations, organizes and runs recycling contests for students, plans and manages recycling facility tours, and participates in special community events, such as hosting a booth at the county fair. These activities are expected to continue and will be enhanced by promoting the availability of presentations to non-school groups (civic groups) using a variety of means, such as posting on the Authority's website and employing the support of related organizations to promote presentations to members, such as the Chamber of Commerce.

Program	Description	ID	Start Date	End Date	Goals
<i>Outreach, Education, Awareness, and Technical Assistance</i>					
<i>Web Page</i>	Authority website	8965	Ongoing	Ongoing	3,4
	Track the number of visits to the website.	N/A	2020	2034	3,4
	Minimize the website's "down time" by fixing pages that are under construction as quickly as possible.	N/A	Website experiences little "down time" repairs made as necessary		3,4
	Include the Recycling Guide online as a downloadable, printable PDF.	N/A	Ongoing	Ongoing	3,4
<i>Presentations</i>	Environmental education coordinator	8969 8970	2001	Ongoing	3,4
	Promote availability of presentations to non-school groups (civic groups) using a variety of means, such as posting on the Authority website and employing the support of related organizations to promote presentations to members, such as the Chamber of Commerce.	N/A	2020	2034	3,4
	Begin tracking the number of individuals reached by each presentation and the name of each school so the Authority can identify the number of students and schools reached each year.	N/A	2020	2034	3,4
	Request that educators or group leaders complete a feedback form after a presentation has been completed.	N/A	2020	2034	3,4
	In-service training for teachers and youth leaders	8972	Ongoing	Ongoing	3,4
	Resource library for teachers and youth leaders	8973	Ongoing	Ongoing	3,4
	Grade appropriate classroom presentations in environmental classroom or in schools	8974	Ongoing	Ongoing	3,4
<i>Adopt-a-Road program</i>	Continue to operate Adopt-a-Road program	6605	Ongoing	Ongoing	3,4
	Identify groups that have a volunteer requirement or organizations that typically perform community service and target these groups to receive information about the Authority's Adopt-a-Road program.	N/A	2020	2034	3,4
	Begin tracking additional program statistics, such as the number of bags collected, weight of bags collected, and/or number of hours volunteered.	N/A	2020	2034	3,4

Program	Description	ID	Start Date	End Date	Goals
Educational Displays	Continue hosting education displays at fairgrounds and community events	187	1995	Ongoing	3,4
	Ensure promotional items display the Authority's contact information and that flyers for each target audience are available at the display.	N/A	2020	2034	3,4
	Comprehensive resource guide	8967 8968	Ongoing	Ongoing	3,4,5
	Marketing plan updated annually that includes at a minimum a) Materials to be used for public information and education, b) educational displays and exhibits, c) advertising and public service announcements d) special promotional events and activities.	8971	Ongoing	Ongoing	3,4
	Annually provide one public outreach activity that engages local elected officials and other community leaders designed to increase recycling opportunities for communities	8976	Ongoing	Ongoing	3,4
Contests	Annual poster contest	8975	Ongoing	Ongoing	3,4
	Inform more school districts about contests to increase participation.	N/A	2020	2034	3,4
Tours	The Authority will continue to host tours at solid waste and recycling facilities.	N/A	Ongoing	Ongoing	3,4

Outreach and Marketing Plan

The Authority evaluated the existing education and outreach programs in terms of effectiveness and in the context of the State Plan's minimum requirements for reaching the required target audiences. The following table provides a summary of the evaluation, and shows for instance, that the Authority's website addresses four of the five target audiences. The Authority will continue to offer all the existing education and outreach programs to residents of Richland County.

Existing Programs	Target Audience				
	Residents	Schools	Industries	Institutions & Commercial Businesses	Communities & Elected Officials
Website	✓	✓	✓	✓	✓
Presentations	✓	✓	✓	✓	✓
Contests	✓	✓			✓
Adopt-a Road	✓	✓		✓	
Educational Displays	✓	✓	✓	✓	
Business/Industrial Sector Waste Audits		✓	✓	✓	
Total Program per Group	5	6	4	5	3

Other Programs

Health Department Support

Richland Public Health: The Authority provides funds to the Richland County Health Department that are intended to help them administer the solid waste program in Richland County. Areas of the solid waste program that the Authority helps fund include inspections at the landfill, tire facilities, compost facilities, etc., trash haulers inspection and registration, and dump site investigations.

County Assistance - Maintaining Roads

An annual budgeted amount for this program is not being proposed but if a request for funding is submitted to the Authority under this program the Board may consider the request. If a determination is made to provide the funding, the dollars will come from the Authority's reserve funds. All requests will be based on budgetary availability. Approval of road repair funding will require a minimum reserve of 1.25 million in the Authority's budget and not exceed \$150,000 per year.

County Assistance – Sheriff Litter Patrol

There is a potential to reintroduce this program during the planning period if funding is available. The RCRSWMA would hire a Deputy Sheriff to patrol for and respond to litter complaints. This Deputy would be responsible for enforcing the litter laws in Richland County. The emphasis would be on roadside dumping but the Deputy could also respond to or refer open dumping complaints to the Health Department or Ohio EPA.

C. Waste Reduction and Recycling Rates

1. Residential/Commercial Recycling in Richland County

Waste reduction and recycling in the residential/commercial sector is expected to increase slightly during the first six years of the planning period based upon the tons collected (see following table).

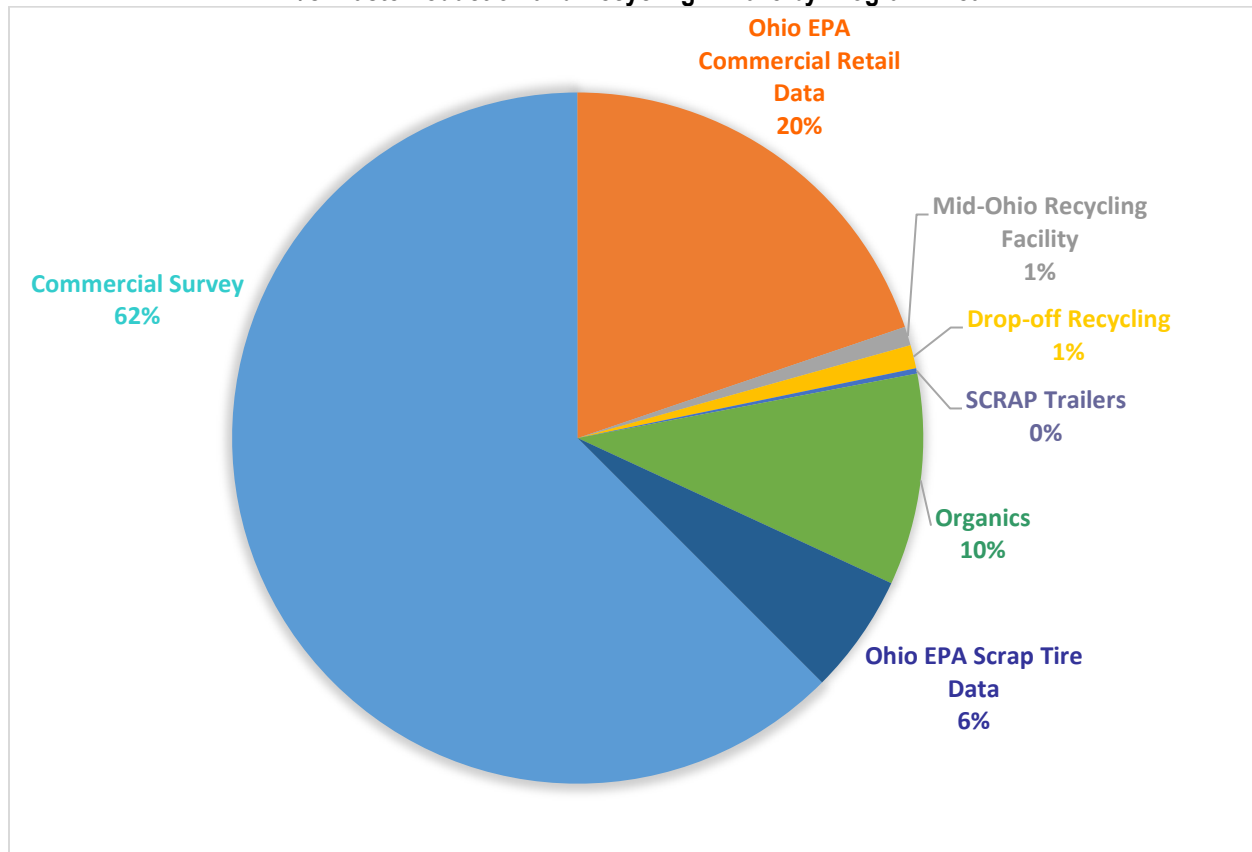
Table 5.1 Residential/Commercial Waste Reduction and Recycling Rate

Year	Projected Quantity Collected	Residential/ Commercial WRR¹
2020	42,444	33%
2021	43,099	34%
2022	43,799	34%
2023	44,547	35%
2024	45,344	35%
2025	46,193	36%

¹WRR = Waste Reduction and Recycling Rate

The program areas expected to provide the waste reduction and recycling for the amounts shown in the table above are depicted in the following figure. The largest amount of reduction and recycling is projected from the category entitled, "Organics" which includes yard waste composting and food waste recovery.

R/C Waste Reduction and Recycling in 2018 by Program Area



2. Industrial Recycling in Richland County

The following table shows the projected amount of waste reduction and recycling for the industrial sector during the first six years of the planning period. The waste reduction and recycling rate is expected to be 64 percent, which is just under the State Plan industrial sector goal of 66 percent. The Authority believes that the industrial sector will actually exceed the state goal of 66 percent; and intends to show this through an increased survey effort.

Table 5.2 Industrial Waste Reduction and Recycling Rate

Year	Projected Quantity Collected	Industrial WRR ¹
2020	205,590	64%
2021	216,124	64%
2022	227,197	64%
2023	238,838	64%
2024	251,075	64%
2025	263,939	64%

¹WRR = Waste Reduction and Recycling Rate

CHAPTER 6 BUDGET

Purpose of Chapter 6

Ohio Revised Code Section 3734.53(B) requires a solid waste management plan to present a budget. This budget accounts for how the 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

During the 2016 reference year, the Authority's overall revenue was \$1,436,025. In the first year of the planning period (2020), revenue is projected to be \$1,457,958. Revenue is projected to increase annually to \$1,711,550 in 2026. Current revenue is generated through generation fees, designation fees, recycling revenue and user fees.

Projected expenditures were developed based on the programmatic needs identified in Appendix H, I, and L. During the first five years of the planning period, annual expenditures range from approximately \$1,231,395 to \$1,426,233. Based on projections, the Authority will have ample revenue to finance the implementation of the programs and initiatives described throughout this Plan Update. The Authority is projected to begin the planning period in 2020 with a carryover balance of approximately \$1,816,771 and end the planning period with a carryover balance of approximately \$3,075,274.

B. Revenue

Overview of How Solid Waste Management Districts Earn Revenue

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

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

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

Disposal fees are collected on each ton of solid waste that is disposed at landfills in the levying SWMD. There are

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

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

The in-district fee must be at least \$1.00 and no more than \$2.00;

The out-of-district fee must be at least \$2.00 and no more than \$4.00; and

The out-of-state fee must be equal to the in-district fee.

Generation fees (see Ohio Revised Code Section 3734.573)

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

Rates and Charges (see Ohio Revised Code Section 343.08)

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

Contracts (see Ohio Revised Code Sections 343.02 and 343.03)

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

Other Sources of Revenue

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

Revenue from the sale of recyclable materials;

User fees (such as fees charged to participate in scrap tire and appliance collections);

County contributions (such as from the general revenue fund or revenues from publicly-operated solid waste facilities (i.e. landfills, transfer facilities)); Interest earned on cash balances; Grants; Debt; and Bonds.

1. Disposal Fees

The Authority does not have a disposal fees.

2. Generation Fees

The RCRSWMA collects a Generation Fee on each ton of solid waste generated within Richland County. The generation fee in effect in 2016 was \$7.50 per ton. The Authority will continue to collect a generation fee of \$7.50 until the thirteenth year of the planning period. On January 1, 2032, the fee will be raised to \$8.50. Implementation of the \$8.50 generation fee in January 2032 will occur as a result of the ratification and approval of this Solid Waste Management Plan. The RCRSWMA will reassess the generation fee level that is required to support the Authority's planned programs when the next five-year plan update is prepared.

3. Fees Collected via Designation Agreements

The RCRSWMA has not designated any solid waste facilities and does not intend to during this planning period.

4. Other Funding Mechanisms

Grants – Grants obtained by the District are competitive and therefore not a guaranteed source of revenue. Potential revenue from future grants has been excluded from the projections in Table O-5

Recycling Revenue – This revenue came from the sale of commodities processed at the Mid-Ohio Recycling Facility.

Contracts – the Authority receives \$1.00 for each ton of out-of- district waste and \$2.00 on each ton of out-of-state waste disposed of in the Noble Road Landfill by contract with the facility's owner, Rumpke. The contract is expected to continue for the entire planning period.

User Fees – User fees are collected at the Mid-Ohio Recycling Facility for special materials or items such as electronics, tires, and Freon-containing appliances. There is also a user fee charged at the RCRSWMA operated compost facility.

Miscellaneous – This category includes revenue from workshop registration fees, refunds and rebates, and other small payments that do not fit in any of the other program categories. The amount of revenue generally realized from these miscellaneous sources is not consistent or predictable. Therefore, it has not been included in the budget for the planning period.

5. Summary of Revenue

The following table presents the District's total revenue by source for the 2016 reference year and the first six years of the Plan (2020 to 2025).

Table 6.1 Summary of Revenue

Year	Generation Fees	Contract Fees	Other Revenue			Total Revenue
			Recycling Revenue	Mid-Ohio Facility Use Fee	Compost Facility Fees	
Reference Year						
2016	\$868,077	\$482,999	\$42,451	\$28,047	\$14,452	\$1,436,025
Planning Period						
2020	\$823,526	\$595,371	\$29,738	\$30,488	\$16,830	\$1,495,953
2021	\$839,997	\$619,186	\$26,764	\$32,012	\$17,672	\$1,535,631
2022	\$856,797	\$643,953	\$24,088	\$33,613	\$18,555	\$1,577,006
2023	\$873,933	\$669,711	\$21,679	\$35,294	\$19,483	\$1,620,099
2024	\$891,411	\$696,500	\$19,511	\$37,058	\$20,457	\$1,664,937
2025	\$909,239	\$724,360	\$17,560	\$38,911	\$21,480	\$1,711,550

Source(s) of Information: Plan Tables O-3 and O-5

C. Expenses

Overview of How Solid Waste Management Districts Spend Money

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

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

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

- salaries and benefits;
- purchasing and operating equipment (such as collection vehicles and drop-off containers);
- operating facilities (such as recycling centers, solid waste transfer facilities, and composting facilities);
- offering collection programs (such as for yard waste and scrap tires);
- providing outreach and education;
- providing services (such as curbside recycling services); and
- paying for community clean-up programs.

Table 6-2 presents a summary of expenses for the 2014 reference year and for the first six years of the planning period (2020 to 2053) broken into specific expense categories.

Table 6.2 Summary of Expenses

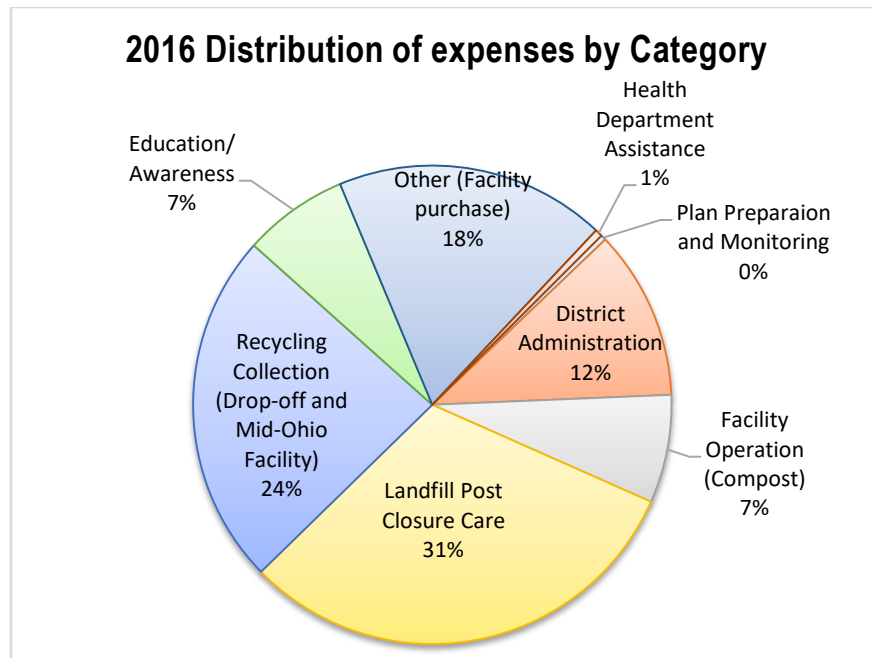
Expense Category	Year						
	Reference	Planning Period					
	2016	2020	2021	2022	2023	2024	2025
Plan Preparation and Monitoring	\$5,500	\$5,665	\$5,835	\$6,010	\$21,640	\$32,126	\$6,567
District Administration	\$173,022	\$150,430	\$155,695	\$161,144	\$166,784	\$172,622	\$178,663
Facility Operation (Compost)	\$110,161	\$65,319	\$67,279	\$69,297	\$71,376	\$73,517	\$75,723
Landfill Post Closure Care	\$468,208	\$530,797	\$549,375	\$568,603	\$588,504	\$609,102	\$630,420
Recycling Collection (Drop-off, SCRAP Trailer and Mid-Ohio Facility)	\$360,466	\$375,432	\$386,695	\$398,296	\$410,245	\$422,552	\$435,229
Education/Awareness	\$107,012	\$95,251	\$98,232	\$101,317	\$104,510	\$107,815	\$111,235
Other (Facility purchase)	\$275,969	\$0	\$0	\$0	\$0	\$0	\$0
Health Department Assistance	\$7,493	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
Total Expenses	\$1,507,831	\$1,231,395	\$1,271,611	\$1,313,167	\$1,371,559	\$1,426,233	\$1,446,337

Source(s) of Information: Plan Table O-7

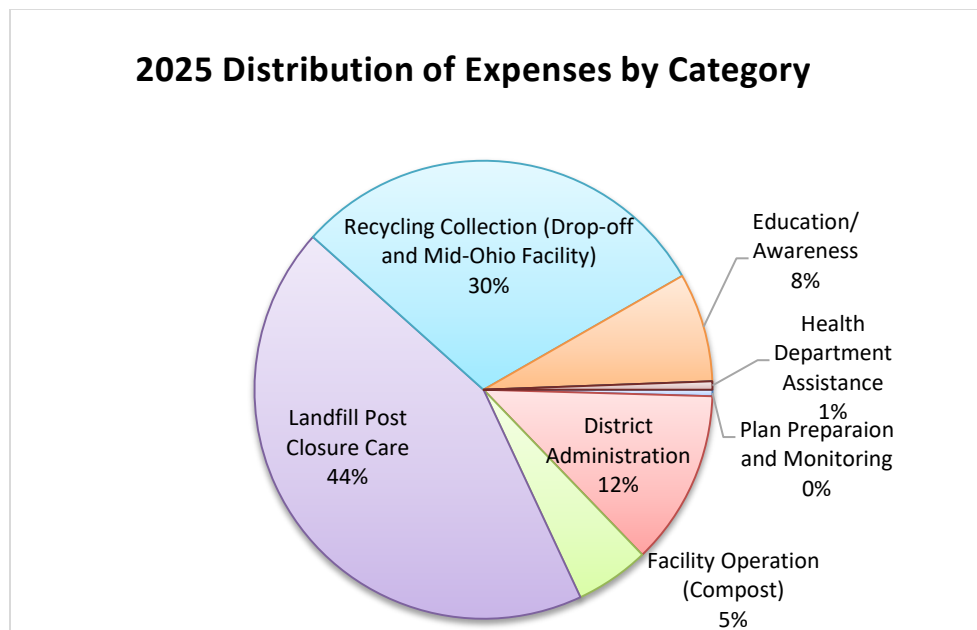
Expense categories in Table 6-2 include the following:

- **Plan Preparation/Monitoring** – Represents expenditures for assistance from consultants with developing solid waste plan updates and preparing the annual district report
- **Direct Administration** – Budget includes expenditures for salaries, OPERS, FICA, unemployment compensation, workers' compensation, health insurance, and office overhead such as postage, office rent, utilities, telecommunications, and other supplies.
- **Facility Operation (Compost)** – Reflects the base operating budget, which includes one FTE for 9 months, fuel and maintenance.
- **Landfill Post-Closure Care** – The maintenance and monitoring of the Closed Richland County Landfill includes wages and benefits for approximately 2.5 FTE employees and equipment maintenance and fuel for the equipment necessary to maintain the closed landfill. This line also includes payment for outside services for maintenance and remediation that does not fall under the consulting, monitoring and engineering contract. These costs are often unpredictable due to the nature of the facility.
- **Recycling Collection (Drop-off, SCRAP Trailer and Mid-Ohio Facility)** – The cost for collection and processing of recyclable materials in Richland County by the RCRSWMA are contained in three programs, drop-off collections, SCRAP Trailer and Mid-Ohio Facility. The costs for these programs consist of 3.5 FTE employees, vehicles and fuel, utilities and maintenance and the collections contract for picking up the recyclables.
- **Education/Awareness** – Reflects expenditures for education staff, advertisement, and promotion costs.
- **Health Department Financial Assistance** – Reflects funding allocated to the County Health Department for solid waste enforcement activities.
- **Other** – In 2016, the Authority purchased the building housing the Mid-Ohio Facility. This line item is not included in the planning period due to the unknown and infrequent use.

In 2016, 38% of the Authority's regular expenses (neglecting the purchase of the Mid-Ohio Facility) were attributed to the post-closure care of the closed Richland County landfill.



Throughout the first six years of the planning period, the distribution of expenses among categories remains nearly the same. As the precise cost for post-closure care of the closed Richland County Landfill continues to be an unknown throughout the planning period, the percentage of budget allocated to the landfill remains the largest cost.



D. Budget Summary

Table 6-3 presents a summary of the budget for the 2016 reference year and the first six years of the planning period (2020 to 2025). The summary includes revenue, expenditures, net balance, and year-end fund balance. Revenue increases from 2020 at \$1,457,958 to \$1,644,937 in 2025; expenses are also predicted to grow from \$1,231,395 in 2020 to \$1,446,337 in 2025. The Authority's ending balance during the first six years of the planning period increases from \$2,043,334 in 2020 to \$3,108,052 in 2025. Ample funding should be available to operate the programs outlined throughout this Plan.

Table 6.3 Budget Summary

Year	Revenue	Expenses	Net Difference	Ending Balance
Reference Year				
2016	\$1,436,025	\$1,507,831	-\$71,806	\$772,757
Planning Period				
2020	\$1,457,958	\$1,231,395	\$226,563	\$2,043,334
2021	\$1,495,953	\$1,271,611	\$224,343	\$2,267,676
2022	\$1,535,631	\$1,313,167	\$222,463	\$2,490,140
2023	\$1,577,006	\$1,371,559	\$205,446	\$2,695,586
2024	\$1,620,099	\$1,426,233	\$193,866	\$2,889,452
2025	\$1,664,937	\$1,446,337	\$218,600	\$3,108,052

APPENDIX A MISCELLANEOUS INFORMATION



A. Reference Year

The reference year for this solid waste management plan is 2016.

B. Planning Period (first and last years)

The planning period for this solid waste management plan is 2020 to 2034.

C. Goal Statement

The SWMD will achieve the following Goal(s):

The Richland County Regional Solid Waste Authority (RCRSWA) will achieve Goal # 1 from the 2009 State Solid Waste Management Plan.

Goal #1 – The SWMD shall ensure that there is adequate infrastructure to give residents and commercial businesses opportunities to recycle solid waste.

The RCRSWMA will comply with the requirements of Goal #1. The Authority will show adequate infrastructure to give to residents and commercial businesses opportunities to recycle solid waste. The opportunities that exist in Richland County consist of subscription and non-subscription curbside pick-up, and drop off recycling. In addition, commercial businesses are contracting to recycle packaging and other materials generated as part of their operations. The commercial numbers used in this report were directly reported to Ohio EPA by the individual businesses.

In order to meet the adequate infrastructure goal, RCRSWMA intends to keep the present recycling drop-off activities including the recycling bins that have been around the county and the SCRAP Trailer which provides monthly recycling collection opportunities at twenty-one locations in Mansfield, Shelby, Lexington and Ontario. In addition to these programs run by the RCRSWMA, the recycling opportunities provided by Milliron Recycling and Rumpke will contribute to the adequate infrastructure goal.

RCRSWMA is proud of the education and public awareness programs that provide waste reduction and recycling education for children and adults. The Authority intends to continue these programs and their focus on increasing waste reduction and recycling. The Authority will also share information and provide technical assistance to help business and industry reduce waste.

D. Explanations of Differences between Data Previously Reported and Data Used in the Solid Waste Management Plan

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

The data previously reported by the Richland County Regional Solid Waste Management Authority was used to prepare this plan.

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

The data previously reported by the Richland County Regional Solid Waste Management Authority was used to prepare this plan.

E. Material Change in Circumstances/Contingencies

Process to Determine Material Change in Circumstances

Ohio law [ORC Section 3734.56(D)] requires district plans to be updated when the District Board of Directors (in this case the Authority's Board of Trustees) determines that circumstances materially changed from those of the approved plan. If a plan update is required due to a material change in circumstances, the plan update must address those portions of the plan that need to be modified due to the change.

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

The RCRSWMA will use its normal operational procedures to monitor plan implementation and determine whether and when a material change in circumstances has occurred in the Authority's jurisdiction, which requires a plan amendment. The Authority Board of Trustees meets at least quarterly to receive updates on the implementation of the Plan, and thoroughly reviews the implementation of the plan annually. The Board of Trustees meets frequently enough to detect and respond to changing circumstances.

Circumstances which may result in a material change

Circumstances which may result in a material change include, but are not limited to, the following:

reduction in the available capacity of the publicly-available landfills used for disposal of solid waste generated in the boundaries of the RCRSWMA, including the landfills identified in Appendix M, so that total available daily disposal capacity of those landfills is less than 150% of the average daily amount of solid waste generated in RCRSWMA that is disposed of in landfills;

changes in strategies for waste reduction or recycling including the closing of a facility or facilities or the discontinuation of a service or services which will result in the RCRSWMA not providing 90% recycling access as required to meet Goal #1 of the State Plan.

A decrease in the amount of waste generated for disposal substantial enough to cause a decrease in revenue or any other circumstance which causes a decrease in revenue such that there is inadequate funding to maintain the programs of the Authority; or delay of more than six months in the implementation of programs and/or activities included in the Schedule of Facilities and Programs that is included in this plan.

Procedure and timetable to address a material change.

Should any member of the Board of Trustees believe that a material change has occurred, the member will notify the Chairperson of the Board of Trustees and the Authority's Executive Director and place an item on the agenda for the next upcoming meeting or schedule a special meeting, as appropriate. The Board will review the changed circumstances, and using any applicable criteria described above, or based on the estimated impact of the change on the projections, activities, timetables, and programs contained in the approved plan, approve or disapprove a resolution to recommend the preparation of a plan amendment. The Board of Trustees may refer this matter to the Authority's staff for additional analysis or for preliminary recommendation.

Unless this time period is formally extended by the Board, the Board will make a determination on whether to prepare a plan amendment within 90 days after the matter is first placed on its agenda, and will provide

press releases to newspapers of general circulation within Richland County, informing the public of its decision. The Board will also notify the Ohio Environmental Protection Agency.

If a recommendation for a plan amendment is adopted, the Board of Trustees, with the assistance of any standing or special committees, as appropriate, will prepare the plan amendment to address the material change of circumstances. The schedule for development of the plan amendment, approval, ratification, and implementation, will be established by the Board of Trustees, depending upon the extent of the amendment required to address the change in circumstances. For example, an amendment which only affects elements of the plan required by Section 3734.53(B) or (E) of the Revised Code will not require approval of the Director of Ohio EPA, and may be processed in a much shorter time than other types of plan amendments.

APPENDIX B

RECYCLING INFRASTRUCTURE INVENTORY



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

Curbside Recycling Services

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

ID #	Name of Curbside Service	Service Provider	County	How Service is Provided	Collection Frequency	Materials Collected ⁽¹⁾	Type of Collection	PAYT (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
NCS1	Shiloh Village Curbside	Rumpke	Richland	Waste Collection Contract	weekly	Paper; mixed, office, news, magazine, brown paper, cardboard, paperboard; plastic bottles #1-#7; aluminum and steel cans; glass bottles of all colors	Non-Subscription	N	*	Y
Total									0	

In 2011, the village of Shiloh made non-subscription curbside recycling available in conjunction with a waste collection contract with Rumpke. This service is provided to all residential waste collection customers as part of the regular service. Payment for the service is included in the rate paid by the customer and is not optional.

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

ID #	Name of Curbside Service	County	How Service is Provided	Collection Frequency	Materials Collected	Type of Collection	PAYT (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
SC1	Mansfield Subscription Recycling	Richland	Provided to waste collection customers with collection services	weekly	Paper: mixed, office, news, magazine, brown paper, cardboard, paper board; plastic bottles #1 - #7, aluminum and steel cans, glass bottles all colors	Subscription	Y	*	Y
SC2	Lexington Subscription Recycling	Richland	Provided to waste collection customers with collection services	weekly	Paper: mixed, office, news, magazine, brown paper, cardboard, paper board; plastic bottles #1 - #7, aluminum and steel cans, glass bottles all colors	Subscription	Y	*	Y
SC3	Ontario Subscription Recycling	Richland	Provided to waste collection customers with collection services	weekly	Paper: mixed, office, news, magazine, brown paper, cardboard, paper board; plastic bottles #1 - #7, aluminum and steel cans, glass bottles all colors	Subscription	Y	*	Y
Total								0	

Rumpke offers curbside recycling as an option for residential waste collection customers in Mansfield, Lexington and Ontario. This service can be added onto the regular collection service for an additional fee.

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 ⁽¹⁾	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	RCRSWMA Recycling Drop-off Facility 1125 National Parkway Mansfield, OH 44906 419-774-5861	RCRSWMA	Richland	Drop Off	Tues-Sat 8am to 4:30pm	AIC, APP, BrG, Books, CIG, GrG, Elec, Mag, OCC, OffP, ONP, P#1, P#2, StC, Tires	Y	345	Y
FTU2	Jackson Township Garage 3761 Plymouth-Springmill Rd. Shelby, OH 44875	RCRSWMA	Richland	Drop Off	24 Hours, 7 Days	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
FTU3	Bellville/Jefferson Township Garage 89 School St. & Ogle Bellville, OH 44813	RCRSWMA	Richland	Drop Off	24 Hours, 7 Days	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
FTU4	Lexington Village Maintenance Garage 205 Mill Street Lexington, OH 44904	RCRSWMA	Richland	Drop Off	24 Hours, 7 Days	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
FTU5	Mifflin Township Fire Department 2326 Park Avenue East Mansfield, OH 44903	RCRSWMA	Richland	Drop Off	24 Hours, 7 Days	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
FTU6	Sharon Township Garage 5141 St. Rt. #61 Shelby, OH 44875	RCRSWMA	Richland	Drop Off	24 Hours, 7 Days	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
FTU7	Springfield Township Road Department 8 St. Rt. #314 S. Mansfield, OH 44903	RCRSWMA	Richland	Drop Off	24 Hours, 7 Days	AIC, OCC, ONP, P#1, P#2, StC	Y	459	Y
FTU8	Milliron Industries Mansfield City	Milliron Industries	Richland	Drop Off	Mon-Fri 8AM – 5PM Sat 8AM – 12PM	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
Total								804	

RCRSWMA maintains six recycling drop-off locations in the urban areas of Richland County. These drop-off locations are available 24 hours a day, seven days a week. The recycling bins are serviced by a private contractor. The contractor routinely collects the recyclables to process and market the materials. The RCRSWMA monitors the drop-off locations to assure that the areas are kept clean and to notify the contractor if the bins need to be emptied. The materials collected at these locations include aluminum and bi-metal cans, newspaper, corrugated cardboard, plastic containers #1 & #2.

In addition to the six 24/7 drop off locations, RCRSWMA also operates a collection facility at their headquarters on National Parkway in Mansfield. The available hours for this facility are Tuesday through Saturday 8:00AM to 4:30 PM. Materials accepted at this facility include everything that can be recycled at the drop-off locations and, glass, electronics, appliances and tires. A fee is charged for some difficult to manage items.

Milliron Recycling, a private recycler, also has a recycling facility open to the public. The hours of operation for Milliron Recycling are Monday through Friday from 8:00AM to 5:00PM and Saturday from 8:00AM to 12:00 PM. Materials accepted at Milliron include: aluminum, brass, copper, stainless steel, auto batteries, junk cars (to shred), iron and auto radiators.

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 ⁽¹⁾	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	Auburn Elementary SCRAP Trailer 109 Auburn Ave. Shelby, Ohio	RCRSWMA	Richland	Drop Off	Second Tuesday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU2	Brinkerhoff Elementary SCRAP Trailer Corner of South Linden and Oakwood Drive - Maple Lake Park, Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Second Wednesday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU3	Discovery School SCRAP Trailer 855 Millsboro Road Mansfield, Ohio	RCRSWMA	Richland	Drop Off	First Thursday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU4	Dowds Elementary SCRAP Trailer 18 Seneca Drive, Shelby, Ohio	RCRSWMA	Richland	Drop Off	Fourth Tuesday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU5	Early Childhood Center SCRAP Trailer 255 Hedges Avenue Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Second Monday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU6	Eastern-Lexington SCRAP Trailer 155 Castor Road Lexington, Ohio	RCRSWMA	Richland	Drop Off	First Friday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU7	Eastview Elementary SCRAP Trailer 1262 Eastview Drive, Mansfield, Ohio	RCRSWMA	Richland	Drop Off	First Monday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ⁽¹⁾	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU8	Madison Jr. High School SCRAP Trailer 690 Ashland Road, Mansfield, Ohio	RCRSWMA	Richland	Drop Off	First Wednesday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU9	Madison South Elementary SCRAP Trailer 690 S. Illinois Ave. Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Third Monday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU10	Malabar Middle School SCRAP Trailer 205 West Cook Road Mansfield, Ohio	RCRSWMA	Richland	Drop Off	First Tuesday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU11	Mansfield Christian School SCRAP Trailer 500 Logan Road Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Fourth Monday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU12	Mifflin School SCRAP Trailer 441 Reed Road Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Third Friday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU13	Ontario United Methodist Church SCRAP Trailer 3540 Park Ave. W Ontario, Ohio	RCRSWMA	Richland	Drop Off	One week per month	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU14	Newman Elementary SCRAP Trailer 124 N. Linden Road Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Fourth Wednesday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU15	Foundations Academy of Mansfield SCRAP Trailer Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Fourth Friday 9:30am to 3:30pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	N

ID#	Name of Drop-off Site	Service Provider	County	How Service is Provided	Days and Hours Available to the Public	Materials Collected ⁽¹⁾	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU16	Prospect Elementary SCRAP Trailer Prospect Park Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Third Tuesday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU17	Shelby Central School SCRAP Trailer 25 High School Ave. Shelby, Ohio	RCRSWMA	Richland	Drop Off	Third Wednesday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU18	Sherman Elementary SCRAP Trailer 1138 State Route 39 Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Third Thursday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU19	St. Peters Elementary SCRAP Trailer 63 South Mulberry Street Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Second Friday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	N
PTU20	Western Elementary SCRAP Trailer 385 West Main Street Lexington, Ohio	RCRSWMA	Richland	Drop Off	Second Thursday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
PTU21	Woodland Elementary SCRAP Trailer 460 Davis Rd. Mansfield, Ohio	RCRSWMA	Richland	Drop Off	Fourth Thursday 2pm to 4pm	AIC, OCC, ONP, P#1, P#2, StC	Y	107	Y
PTU22	Ohio National Guard 1947 Harrington Memorial Road Mansfield, Ohio 44906		Richland	Drop Off	only open to ANG	AIC, OCC, ONP, P#1, P#2, StC	Y	*	Y
Total								107	

In the reference year, 2016, there were 21 organizations participating in the SCRAP (Schools and Communities Recycling as Partners) Trailer program. The participating organizations were in Mansfield, Lexington, Ontario and Shelby. The trailer is owned and operated by the RCRSWMA. It is made available for

recycling at the participating organization's location one day per month. RCRSWMA funds the program operations and the proceeds from the material sales are returned to the sponsoring school or organization. Some of these locations are considered rural, but they are included in this list because they are all operated under the same RCRSWMA program.

Since 2016, there have been some changes to the participating organizations. There are currently 17 participants.

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⁽¹⁾	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	Bloomingrove Township Garage 1575 St. Rt. 96 Shiloh, OH 44878	RCRSWMA	Richland	Drop Off	24 Hours 7 Days	AIC, OCC, P#1, P#2, ONP, StC	Y	*	Y
FTR3	Crestview High School Pleasant St. & Union Ashland, OH 44805	RCRSWMA	Richland	Drop Off	24 Hours 7 Days	AIC, OCC, P#1, P#2, ONP, StC	Y	*	Y
FTR3	Lucas/Monroe Township Garage Pleasant St. & Union Lucas, OH 44843	RCRSWMA	Richland	Drop Off	24 Hours 7 Days	AIC, OCC, P#1, P#2, ONP, StC	Y	*	Y
FTR4	Plymouth Township Garage 7025 Kuhn Road Shelby, OH 44875	RCRSWMA	Richland	Drop Off	24 Hours 7 Days	AIC, OCC, P#1, P#2, ONP, StC	Y	*	Y
FTR5	Plymouth High School 400 Trux Street Plymouth, OH 44865	RCRSWMA	Richland	Drop Off	24 Hours 7 Days	AIC, OCC, P#1, P#2, ONP, StC	Y	*	Y
FTR6	Weller Township Garage Adario and St. Rt. 545 Mansfield, OH 44903	RCRSWMA	Richland	Drop Off	24 Hours 7 Days	AIC, OCC, P#1, P#2, ONP, StC	Y	*	Y
FTR7	Butler Village Garage Traxler Street Butler, OH 44822	RCRSWMA	Richland	Drop Off	24 Hours 7 Days	AIC, OCC, P#1, P#2, ONP, StC	Y	398	Y
Total								398	

RCRSWMA maintains seven recycling drop-off locations in the rural areas of Richland County. These drop-off locations are available 24 hours a day, seven days a week. The recycling bins are serviced by a private contractor. The contractor routinely collects the recyclables to process and market the materials. The RCRSWMA monitors the drop-off locations to assure that the areas are kept clean and to notify the contractor if the bins need to be emptied. The materials collected at these locations include aluminum and bi-metal cans, newspaper, corrugated cardboard, plastic containers #1 & #2.

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⁽¹⁾	Drop-off Meets All Minimum Standards? (Y/N)	Weight of Materials Collected from the SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
Total								0	

There are four participating organizations in the SCRAP Trailer program that would be considered rural. They are the Eastern and Western Elementary Schools in Lexington, the Madison South Elementary School in Mansfield and the Mifflin Elementary School in Mansfield. Because these four recycling opportunities are all part of the SCRAP Trailer program, they were included in Table B-2b.

Table B-3 Mixed Solid Waste Material Recovery Facility

There are no Mixed Solid Waste Material Recovery Facilities in Richland County.

Curbside Recycling and Trash Collection Service Providers

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

Name of Provider	Counties Served	Trash Collection Services				Curbside Recycling Services		
		PAYT (Y/N)	Residential	Commercial	Industrial	Residential2	Commercial2	Industrial 2
B & C Rubbish	Richland	Y	Y	Y	Y			
Buckeye Refuse, Inc.	Richland	Y	Y	Y	Y			
E & T Trucking	Richland	Y	Y	Y	Y			
Great Lakes Refuse	Richland	Y	Y	Y	Y			
Kurtzman Sanitation	Richland	Y	Y	Y	Y			
Milliron Waste Management	Richland	Y	Y	Y	Y			
Monn's Trash Removal	Richland	Y	Y	Y	Y			
Rumpke	Richland	Y	Y	Y	Y	Y		
Shasky Sanitation Roll-Off	Richland	Y	Y	Y	Y			
Shaw & Co.	Richland	Y	Y	Y	Y			
Stantz Enterprises, LLC	Richland	Y	Y	Y	Y			
Trash Master's	Richland	Y	Y	Y	Y			
Wright's Refuse	Richland	Y	Y	Y	Y			

RCCSWMA relies on private haulers to collect the solid wastes generated by Richland County residents and businesses. The City of Mansfield registers the haulers that provide this service in the city. The Richland County Health Department does not register or license waste haulers.

Compost 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
Willodell Yard Waste	IV	Y	1398 US Route 42 Ashland, OH	0	351	351
Crestline Composting SW	IV		E Bucyrus St & State Rte 181 Crestline, OH	0	59	59
City of Mansfield Public Works Division	IV	Y	480 Park Ave E Mansfield, OH	0	1,539	1,539
Richland County Compost Center	IV	Y	441 Cairns Rd Mansfield, OH	0	2,071	2,071
Mansfield Correction Institution	II	N	1150 N Main St Mansfield, OH	22	6	28
Richland Correction Institution	II	N	1001 Olivesburg Rd Mansfield, OH	0	0	0
Hanley Road	IV	N	Hanley Rd W Lexington, OH	0	0	0
Total				22	4,026	4,048

There were seven compost facilities in 2016 that managed yard waste and other compostable materials generated in Richland County. RCRSWMA operated one of the seven, a class IV compost facility on Cairns Road. This facility accepts leave, grass, limbs and garden wastes from March through November. The material is processed and the compost product is sold to the public. Two of the seven facilities are operated by the prisons located in the county and are not available to the public. The other four class IV compost facilities that accepted Richland County material are privately operated businesses that are open to the public. These facilities also accept leaves, grass, limbs and other yard wastes and process the material into a compost product that is used on site or sold depending on their license conditions.

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)
Kroger/Walmart	Composting	Richland	273	0
Total			273	

Kroger and Walmart reported to the State of Ohio that their Richland county operations diverted 273 tons of food waste from the landfill.

Material handling Facilities Used by the SWMD in the Reference Year

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

Facility Name	County	State	Type of Facility	Weight of Material Accepted from SWMD (tons)
Walmart Recycling in Ohio	Richland	Ohio	Commercial	1,736
Lowes Companies, Inc.	Richland	Ohio	Commercial	231
Home Depot Corporation	Richland	Ohio	Commercial	238
Meijer Corporation	Richland	Ohio	Commercial	562
Target Corporation	Richland	Ohio	Commercial	273
Dollar General Corporation	Richland	Ohio	Commercial	231
Big Lots Corporation	Richland	Ohio	Commercial	46
Aldi Inc Hinckley Division	Richland	Ohio	Commercial	4
Aldi Inc Hinckley Division	Richland	Ohio	Commercial	114
Kohl's Corporate Office & Headquarters	Richland	Ohio	Commercial	112
Rumpke Waste Recycling	Richland	Ohio	Recovery Facility	3,205
Milliron Industries Recycling & Waste Mgt.	Richland	Ohio	Recovery Facility	6,383
Richland County Recycling & Transfer Facility	Richland	Ohio	Recovery Facility	
Total				13,135

APPENDIX C POPULATION DATA



A. Reference Year Population

Table C-1a Reference Year Population Adjustments

	Richland County
Before Adjustment	121,167
Additions	
Plymouth	880
Subtractions	
Crestline	17
After Adjustment	122,030

2016 population data obtained from the Ohio Department of Services Agency.

Based on the 2010 population numbers for Plymouth, Ohio and the 2010 solid waste plan, it was estimated that 49% of the residents of Plymouth live in Huron County.

2010 population of Plymouth, Ohio = 1854

Number of Plymouth residents in Huron County in 2010 = 909 (2013 Solid waste plan)

$909/1854 = 49\%$ of the population is in Huron County

To estimate the number of residents to add to the Richland County population we have assumed that 49% of the 2016 population of Plymouth lives in Huron County.

2016 population of Plymouth Ohio = 1795

$1795 \times 49\% = 880$ residents that will be added to the 2016 Richland County population.

Based on the 2010 population numbers for Crestline, Ohio and the 2010 solid waste plan, it was estimated that 0.4% of the residents of Crestline live in Richland County.

2010 population of Crestline, Ohio = 4628

Number of Crestline residents in Richland County in 2010 = 18 (2013 solid waste plan)

$18/4628 = 0.4\%$ of the population is in Richland County

To estimate the number of residents to subtract from the Richland County population we have assumed that 0.4% of the 2016 Crestline population lives in Richland County.

2016 population of Crestline = 4250

$4250 \times 0.4\% = 17$ residents that will be subtracted from the 2016 Richland County population.

Table C-1b Total Reference Year Population

Unadjusted Population	Adjusted Population
121,167	122,030

B. Population Projections

Table C-2 Population Projections

Year	Adjusted Richland County Population
2016	122,030
2017	121,928
2018	121,639
2019	121,351
2020	121,063
2021	120,661
2022	120,259
2023	119,857
2024	119,455
2025	119,053
2026	118,743
2027	118,433
2028	118,123
2029	117,813
2030	117,503
2031	117,257
2032	117,011
2033	116,765
2034	116,519

Source(s) of Information: Population estimates from Ohio Development Services Agency were used to calculate the population change for Richland County during the planning period.

Sample Calculations: The default method described in the Appendix C general instructions was used to project the population for Richland County during the planning period. Table C-3 below shows the estimated population for each five-year period and the estimated change for the years between.

Table C-3

Year	Annual Change persons/year	Richland County
2015	121,641	122,504
2016	-288	122,216
2017	-288	121,928
2018	-288	121,639
2019	-288	121,351
2020	120,200	121,063
2021	-402	120,661
2022	-402	120,259
2023	-402	119,857
2024	-402	119,455
2025	118,190	119,053
2026	-310	118,743
2027	-310	118,433
2028	-310	118,123
2029	-310	117,813
2030	116,640	117,503
2031	-246	117,257
2032	-246	117,011
2033	-246	116,765
2034	-246	116,519
2035	115,410	116,273
2036	-52	115,358
2037	-52	115,306
2038	-52	115,254
2039	-52	115,202
2040	115,150	116,013
2041	-24	115,126
2042	-24	115,102
2043	-24	115,078
2044	-24	115,054
2045	115,030	115,893

Community Additions
Community Subtractions

880

17

APPENDIX D DISPOSAL DATA



A. Reference Year Waste Disposed

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

Facility Name	Location		Waste Accepted from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Crawford County Sanitary Landfill	Crawford	OH	8,378	832	13,155	22,365
Erie County Sanitary Landfill	Erie	OH	0	0	7	7
Franklin County Sanitary Landfill	Franklin	OH	1	0	0	1
Cherokee Run Landfill	Logan	OH	0	14	0	14
Noble Rd Landfill	Richland	OH	1,679	85,864	132,284	219,827
Sunny Farms Landfill	Seneca	OH	85	0	0	85
Countywide Recycling & Disposal Facility	Stark	OH	23	0	6	29
American Landfill, Inc.	Stark	OH	0	30	1,972	2,002
Kimble Sanitary Landfill	Tuscarawas	OH	0	0	1	1
Pine Grove Regional Facility	Fairfield	OH	0	29	0	29
Total			10,166	86,769	147,425	244,360

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

Source(s) of Information: Ohio EPA, 2016 Ohio Solid Waste Facility Data Report, Table 14.

There were ten disposal facilities in 2016 that accepted direct haul waste from Richland County. Noble Road Landfill and Crawford County Sanitary Landfill accepted the majority of the direct hauled waste. Excluded waste made up over 50% of the direct hauled waste. The majority of this material was taken to Noble Road Landfill.

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

There are no captive landfills in Richland County.

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

Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total
10,166	86,769	147,425	244,360

Table D-2: Waste Transferred in Reference Year¹

Facility Name	Location		Waste Received from the SWMD			
	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Huron County Transfer Station	Huron	OH	217	122	24	363
Richland County Transfer Station	Richland	OH	74,546	0	4,201	78,747
Republic Services - Mt Vernon Transfer Station	Knox	OH	86	0	218	304
Delaware County Transfer Station	Delaware	OH	3	0	0	3
Mid-State Waste Transfer	Morrow	OH	1,665	0	363	2,028
Total			76,517	122	4,806	81,445

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

Source(s) of Information: Ohio EPA, 2016 Ohio Solid Waste Facility Data Report, Table 14.

There were five transfer facilities in 2016 that accepted waste from Richland County. The Richland County Transfer Station operated by Rumpke accepted the majority of the waste for transfer. The majority of the waste accepted for transfer was residential and was transferred to Noble Road Landfill for disposal.

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

There are no incinerators or waste-to-energy facilities in Richland County and no waste from Richland 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	10,166	86,769	147,425	244,360	75%
Transferred	76,517	122	4,806	81,445	25%
Incinerated	0	0	0	0	0%
Total	86,683	86,891	152,231	325,805	100%

Percent of Total	27%	27%	47%	
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Source(s) of Information: Ohio EPA, 2016 Ohio Solid Waste Facility Data Report, Table 14.

The majority of Richland County waste sent for disposal ended up in the Noble Road Landfill. The majority of the waste generated in the county that was disposed was excluded waste.

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

	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)		% of Excluded Waste Disposed
Direct Hauled	10,166	86,769	147,425	244,360		60%
Transferred	76,517	122	4,806	81,445		6%
Incinerated	0	0	0	0		0%
Total	86,683	86,891	152,231	325,805		47%

Source(s) of Information: Ohio EPA, 2016 Ohio Solid Waste Facility Data Report, Table 14.

The Noble Road Landfill accepted a large amount of excluded waste in the reference year. In subsequent years, they have continued to dispose of large amounts of excluded waste. This material is mostly C&DD as well as auto shredder residue that is currently being used for daily cover.

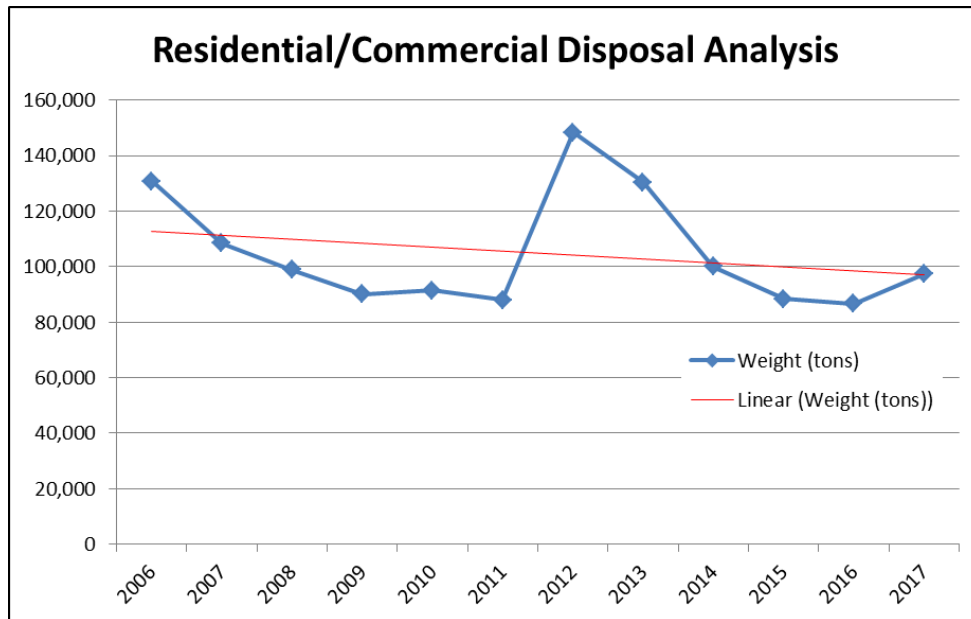
B. Historical Waste Analysis

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)²	Weight (tons)³	Weight (tons)⁴
2006	126,398	5.67	130,821	43,425		268,290
2007	126,039	4.71	108,454	28,848		231,346
2008	125,081	4.33	98,940	15,250		208,234
2009	124,490	3.97	90,135	5,790		189,969
2010	124,161	4.03	91,357	13,208	94,044	198,609
2011	123,130	3.92	87,975	8,716	119,822	216,513
2012	125,366	6.49	148,411	10,624	118,904	277,939
2013	122,673	5.82	130,405	51,618	168,060	350,083
2014	123,517	4.44	100,105	73,375	145,709	319,189
2015	121,707	3.98	88,367	72,187	154,254	314,808
2016	121,970	3.89	86,683	86,891	152,231	325,805
2017	121,574	4.39	97,400	101,790	119,157	318,347

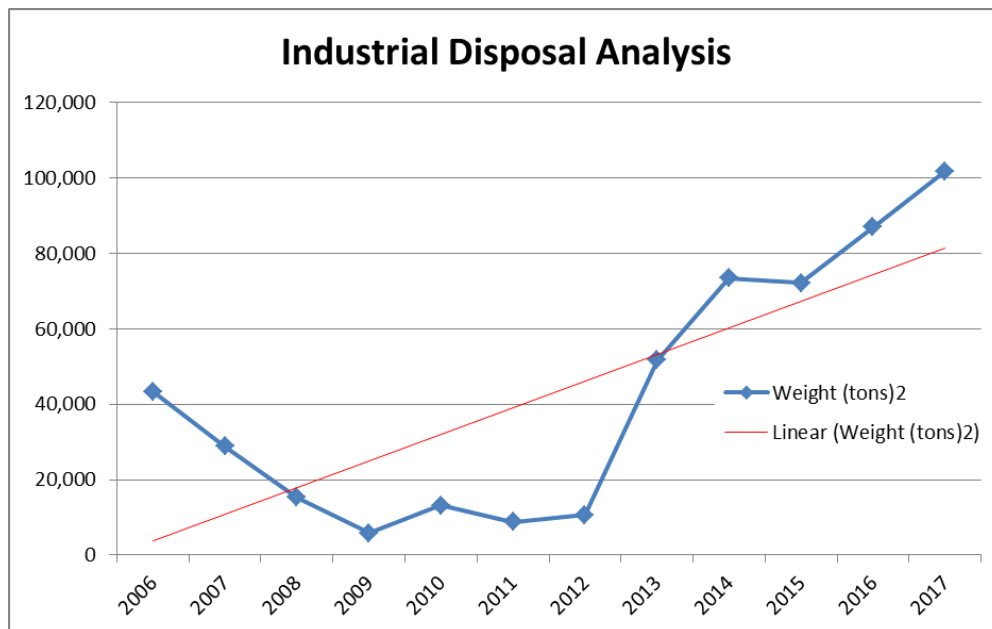
Source(s) of Information: Ohio EPA, 2016 Ohio Solid Waste Facility Data Report, Table 14.

Residential /Commercial Waste



The annual amount of residential waste disposed from Richland County has been fairly consistent since 2007. The amounts from 2006, 2012 and 2013 are higher than the other years, but would appear to be outliers based on the trend line from the data. The trend line indicates a decline in the annual tons of waste disposed.

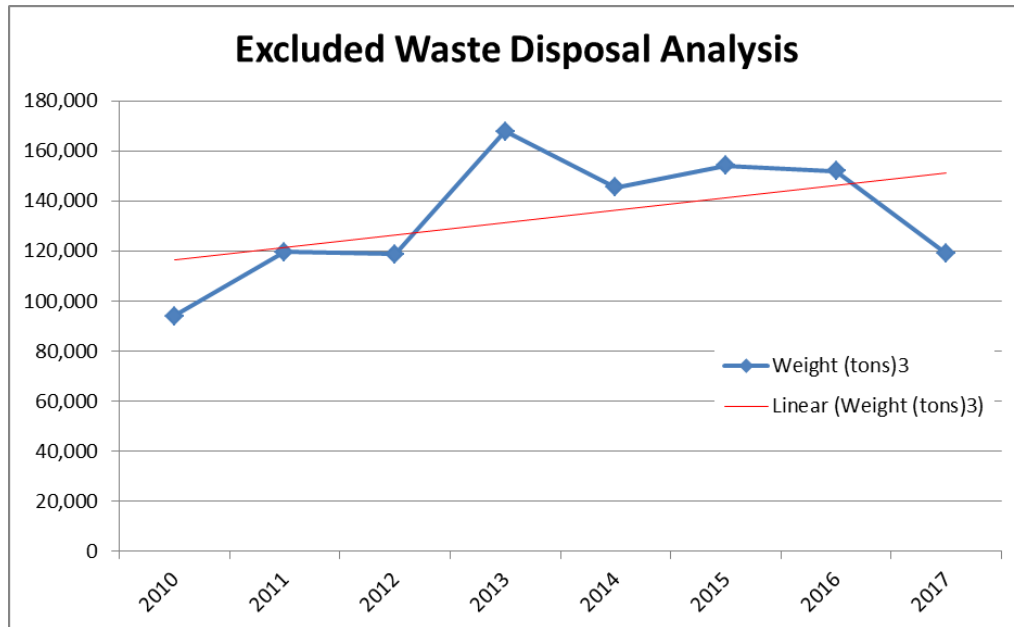
Industrial Waste



The amount of industrial waste disposed in Richland County since 2006 has varied based on the economy. From 2006 to 2009, the annual disposal of industrial waste was down due to the economic down turn of 2008. The rate stayed mostly steady through 2012. In 2013 and beyond, Richland County began to see a

resurgence of manufacturing; and the industrial disposal rates increased as a result. The trend line represented by this increase is not indicative of a long term trend. The RCRSWMA believes that the disposal amount will begin to level off and possibly begin to decrease with the potential for additional recycling within the industrial community.

Excluded Waste



The majority of the excluded waste in Richland County is the auto shredder residue from Milliron industries. This material is currently being used as an alternate daily cover at the Noble Road Landfill. As this material is not recyclable, its use as a daily cover at the landfill is beneficial to the environment in that less soil is used in the landfill preserving as much airspace as possible for waste disposal.

C. Disposal Projections

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 (tons)	Weight (tons)	Weight (tons)	Weight (tons)	Weight (tons)
2016	86,683	86,891	152,231	325,805	81,445
2017	86,285	101,790	160,389	348,464	87,109
2018	85,888	106,496	168,984	361,368	90,335
2019	85,494	111,419	178,040	374,952	93,731
2020	85,101	116,569	187,581	389,251	97,305
2021	84,710	121,958	197,633	404,301	101,068

Year	Residential/ Commercial Solid Waste	Industrial Solid Waste	Excluded Waste	Total Waste	Waste Transferred (as part of Total Disposal)
	Weight (tons)	Weight (tons)	Weight (tons)	Weight (tons)	Weight (tons)
2022	84,321	127,596	208,225	420,141	105,027
2023	83,933	133,495	219,383	436,811	109,194
2024	83,547	139,666	231,140	454,353	113,580
2025	83,164	146,123	243,527	472,813	118,194
2026	82,781	146,123	256,577	485,481	121,361
2027	82,401	146,123	270,327	498,850	124,703
2028	82,022	146,123	284,814	512,959	128,230
2029	81,646	146,123	300,077	527,845	131,951
2030	81,270	146,123	316,158	543,550	135,877
2031	80,897	146,123	333,100	560,120	140,019
2032	80,525	146,123	350,951	577,599	144,389
2033	80,155	146,123	369,758	596,036	148,998
2034	79,787	146,123	389,573	615,483	153,859

Source(s) of Information: Ohio EPA Workbook

The Waste to be transferred is assumed to be 25% of the total waste disposed from Richland County. This assumption is based off of the reference year total tons of waste disposed and total tons of waste transferred.

The waste disposal projections are based on the average annual percent change from 2006 to 2017. The additional years of data were used for this calculation to try and better normalize the rates of change for the industrial waste disposal. Using only the reference year and the previous four years of data resulted in a highly unlikely increasing rate of disposal for industrial waste. Because the additional data was used for the industrial waste stream, it was decided to add the data for residential as well. The excluded waste data was included as far back as data was available.

For the residential/Commercial Waste, the additional years of data lowered the average annual percent change from 5.34% to -0.46%. The population of the county has dropped and is projected to continue to drop. It did not make sense to use an average rate of change that increased the annual amount of waste being disposed. Adding the additional years made the projections more consistent and representative of the overall trend shown in the historic data. Using the average annual percentage change for Residential/Commercial Waste (-0.46%), we see a slow decline in the projected annual amount of residential/commercial waste disposed.

For Industrial Solid Waste the additional years of data lowered the average annual percent change from 81% to 40%. The additional data helped to lower the rate of change, but it still resulted in an unreasonable rate of increase for the projected annual amount of industrial waste to be disposed from Richland County. To better project the rate of change for industrial waste disposal in Richland County the two highest (386% and 128%) and the two lowest (-47% and -62%), Annual Percentage Changes were eliminated from the

average calculation. This dropped the Average Annual Percentage Change to 4.62%. When projected over the entire planning period this still results in an unexpectedly high annual tonnage of industrial waste being disposed. The Industrial sector projection through 2025 is a straight line increase using the annual average percent change calculated during the review period. The remainder of the industrial waste disposal for the planning period is held constant.

For the excluded waste, the additional two years of data increased the average annual percentage change to 5%. Similar to the industrial waste projections, this increase is not realistic when projected over the entire planning period. From years 2020 to 2024, the excluded waste disposal was projected using the 5% annual percentage change. Year 2025 was projected as the average of the excluded waste disposed from 2010 to 2017. From 2025 to 2034, the excluded waste disposal was assumed to be flat.

APPENDIX E
RESIDENTIAL/COMMERCIAL REDUCTION AND RECYCLING DATA



A. Reference Year Recovery Data

Table E-1 Commercial Survey Results

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	
42																
44			45	596		9,082	3,468	4,321	55	49		690		456		
45																
48										2						
49																
51																
52																
53																
54																
55																
56																
61		3		47		61	40	526		7					6	
62																
71																
72								33								
81					651	6	9	87	1,682	246					4,020	
92																
Unadjusted Total	0	3	45	643	651	9,149	3,517	4,967	1,737	304	0	690	0	456	4,026	26,188
Adjustments																0
Adjusted Total	0	3	45	643	651	9,149	3,517	4,967	1,737	304	0	690	0	456	4,026	26,188

Source(s) of Information: RCRSWMA 2016 Annual District Report

Ferrous metals made up the largest portion of the recycled tons in 2016. Metals, cardboard and paper have been the easiest materials to recycle and market. Yard waste also made up a significant portion of the recycled materials in 2016.

Table E-2 Data from Other Recycling Facilities

There are no “other” recycling facilities in Richland County.

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

Ohio EPA Data Source	Glass	Plastic	Newspaper	Cardboard	Mixed Paper	Nonferrous	Ferrous	Wood	Food: Compost	Food: Other	Commingled	Other	
Walmart Recycling in Ohio		34		1,369	9		4					320	
Lowes Companies				65			33	133					
Home Depot				47			9	182					
Meijer Corporation				538	1						21	1	
Target Corporate		5		259	3		5				1		
Dollar General Corporation				231									
Big Lots Corporation				46									
Kohl's Corporate Office		10		102									
Aldi Hinckley Division		1		113									
Aldi Hinckley Division									4				
Rumpke Waste Recycling - Columbus	651	245	563	525	1,120	39	61						
Unadjusted Total	651	295	563	3,295	1,133	39	112	315	4	0	22	321	6,750
Adjustments													0
Adjusted Total	651	295	563	3,295	1,133	39	112	315	4	0	22	321	6,750

Source(s) of Information: Ohio Material Recovery Facilities and commercial Recycling – 2016; from Ohio EPA Solid Waste Management Web Page

Based on the types of facilities reporting to the Ohio EPA, mostly retail stores, cardboard makes up the majority of the material recycled. This material is generated from packaging material used to ship and display products in the stores.

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

Other Programs or Sources of Data	Appliances/ "White Goods"	Electronics	Scrap Tires	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Commingle Recyclables (Mixed)	Yard Waste	Unadjusted Total	Adjustments	Adjusted Total
Curbside Recycling													*		
RCRSWMA Drop-off	107	#	11		52	3	1	34	39	13	22		282		282
Drop-off Recycling Locations						112	6		212	128			458		458
SCRAP Trailers						8	2	28	51	18			107		107
Composting Facilities												4,026	4,026		4,026
Other Food/ Yard Waste Management				563									563		563
Ohio EPA Scrap Tire Data			1,858										1,858		1,858
Unadjusted Total	107	0	1,869	563	52	123	9	62	302	159	22	4,026	7,294	0	7,294
Adjustments													0		
Adjusted Total	107	0	1,869	563	52	123	9	62	302	159	22	4,026	7,294		

Source(s) of Information: Ohio Material Recovery Facilities and commercial Recycling – 2016; from Ohio EPA DMWMt Web Page RCRSWMA 2016 Annual District Report

* - data from curbside is reported in the Rumpke numbers on Tab E-3

- weight included in the White Goods Category

This table incorporates data from Richland County drop off programs and the RCRSWMA Recycling Center as well as scrap tire and food data from Ohio EPA's reporting.

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

Material	Quantity (tons)
Appliances/ "White Goods"	107
Household Hazardous Waste	0
Used Motor Oil	0
Electronics	3
Scrap Tires	1,869
Dry Cell Batteries	0
Lead-Acid Batteries	45
Food	1,210
Glass	1,354
Ferrous Metals	9,384
Non-Ferrous Metals	3,565
Corrugated Cardboard	8,324
All Other Paper	3,735
Plastics	758
Textiles	0
Wood	1,005
Rubber	0
Commingled Recyclables (Mixed)	500
Yard Waste	8,052
Other (Aggregated)	321
Total	40,232

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

Total tons recycled in reference year, 2016, listed by type of material.

Table E-6 Quantities Recovered by Program/Source

Program/Source of R/C Recycling Data	Quantities (Tons)
Commercial Survey	26,188
Data from Other Recycling Facilities	0
Ohio EPA Commercial Retail Data	6,750
Curbside Recycling Services	0
RCRSWMA Drop-off	282
Drop-off Recycling Locations	458
SCRAP Trailers	107
Composting Facilities	4,026
Other Food/Yard Waste Management Activities	563
Ohio EPA Scrap Tire Data	1,858
Total	40,232

Total tons recycled in reference year, 2016, listed by recycling program or information source.

B. Historical Recovery

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

Year	Commercial Survey	Ohio EPA Commercial Retail Data	Curbside Recycling Services	RCRSWMA Drop-off	Drop-off Recycling Locations	SCRAP Trailers	Composting Facilities	Other Food/Yard Waste Management Activities	Ohio EPA Scrap Tire Data	Totals
2006	30,738									30,738
2007	27,759									27,759
2008	28,161									28,161
2009	19,567									19,567
2010	18,547									17,964
2011	16,230	3,175								16,230
2012	17,991	3,954	0	219	453	185	4,827	500	1,558	29,687
2013	19,872	4,302	0	225	468	139	3,640	747	2,188	31,581
2014	21,277	7,816	0	268	484	259	3,869	713	1,960	36,646
2015	31,542	6,014	0	240	468	238	4,205	660	2,075	45,442
2016	26,188	6,750	0	282	458	107	4,026	563	1,858	40,232

Source(s) of Information: Ohio Material Recovery Facilities and commercial Recycling; from Ohio EPA Solid Waste Management Web Page; RCRSWMA Annual District Reports

The historic look back at the recycling numbers for the RCRSWMA show fairly steady trends in recycling numbers. The commercial surveys, the drop-off recycling and the SCRAP Trailers are very consistent over the review period. The data supplied by Ohio EPA reports shows slight increases in the commercial retail

data, the other food and yard waste and the scrap tires recycled in the county. There is a slight decreasing trend in the composted materials.

C. Residential/Commercial Recovery Projections

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

Year	Commercial Survey	Ohio EPA Commercial Retail Data	RCRSWMA Drop-off	Drop-off Recycling Locations	SCRAP Trailers	Composting Facilities	Other Food/Yard Waste Management Activities	Ohio EPA Scrap Tire Data	Totals
2016	26,188	6,750	282	458	107	4,026	563	1,858	40,232
2017	26,271	7,130	302	459	107	3,886	595	1,976	40,727
2018	26,355	7,532	324	461	106	3,752	629	2,102	41,260
2019	26,439	7,956	348	462	106	3,621	664	2,235	41,831
2020	26,523	8,404	373	464	105	3,496	702	2,377	42,444
2021	26,607	8,877	400	465	105	3,375	742	2,529	43,099
2022	26,692	9,377	429	467	104	3,258	784	2,689	43,799
2023	26,777	9,905	460	468	104	3,145	829	2,860	44,547
2024	26,862	10,463	493	470	103	3,036	876	3,042	45,344
2025	26,947	11,052	528	471	103	2,930	926	3,235	46,193
2026	27,033	11,674	567	473	103	2,829	978	3,441	47,097
2027	27,119	12,332	607	474	102	2,731	1,034	3,660	48,059
2028	27,205	13,026	651	476	102	2,636	1,092	3,892	49,081
2029	27,292	13,760	698	478	101	2,544	1,154	4,140	50,167
2030	27,378	14,534	749	479	101	2,456	1,220	4,403	51,321
2031	27,465	15,353	803	481	100	2,371	1,289	4,683	52,545
2032	27,553	16,217	861	482	100	2,289	1,363	4,980	53,845
2033	27,640	17,131	923	484	100	2,209	1,440	5,297	55,224
2034	27,728	18,095	990	485	99	2,133	1,522	5,634	56,686

Source(s) of Information: Ohio EPA Workbook

The commercial survey data has shown to be a steady source of data for Richland County recycling. The annual percentage change through the historic review was only 0.32%. Using this rate of change the projected tonnage from commercial survey recycling is very consistent with only a slight increase through the planning period.

The report of commercial retail data from Ohio EPA shows an increasing trend though the historic review period. Between 2013 and 2014, the change in annual percentage was 82%. This jump was not typical of the other years change and because of that was left out of the calculation to determine the average annual percentage change. Using the remaining years the average was determined to be 6%. A 6% annual change is still aggressive, but not unrealistic.

The historic review of the material collected at the RCRSWMA Drop-Off shows an increasing trend. The annual average percentage change for this program through the review period was 7%. Using this rate to project the tons of materials that could be collected in the planning period results in reasonable numbers will require some effort, but are achievable.

The drop-off recycling locations in Richland County had very little change during the historic review. The average annual percentage change was 0.32 %. This recycling stream is expected to basically remain constant through the planning period.

The tonnages collected through the SCRAP Trailer Program operated by RCRSWMA changed very little during the historic review period. The average annual percentage change was -0.42 %. This recycling stream is expected to basically remain constant through the planning period.

During the historic review period, composting in Richland County showed a slight decline. The average annual percentage change was -3%. It is likely that this was due to swings in the collection of compostables and there is really little change expected for compostables during the planning period.

RCRSWMA collected the "OtherFood/Yard Waste Management" data from Ohio EPA's web site. During the historic review period, the average annual change for the amount of materials reported was a 6% increase. The amount of material collected on an annual basis has been fairly consistent. The collection rate of this material is not expected to change significantly through the planning period.

Scrap tire collection in Richland County is fairly consistent over the years. During the historic review period, there was some fluctuation, but the amount of tires expected during the planning period will remain steady. The average annual percentage change for scrap tires during the review period was 6%.

APPENDIX F

INDUSTRIAL REDUCTION AND RECYCLING DATA



This Appendix presents the reduction and recycling data for the industrial sector in the 2014 reference year. A historic analysis of the industrial sector's recycling and recycling projections for the planning period are included in this Appendix.

A. Reference Year Recovery Data

The North American Industry Classification System (NAICS) classifies business establishments for collecting, analyzing, and publishing statistical data related to the U.S. economy. The NAICS industry codes define establishments based on the activities in which they are primarily engaged.

To obtain industrial sector recycling data, the Authority annually surveys establishments that are classified under the following NAICS codes:

22

Utilities

31

Food Manufacturing
Beverage and Tobacco Product Manufacturing
Textile and Textile Product Mills
Apparel Manufacturing
Leather and Allied Product Manufacturing

32

Wood Product Manufacturing
Paper Manufacturing
Printing and Related Support Activities
Petroleum and Coal Products Manufacturing
Chemical Manufacturing
Plastics and Rubber Products Manufacturing
Nonmetallic Mineral Product Manufacturing

33

Primary Metal Manufacturing
Fabricated Metal Product Manufacturing
Machinery Manufacturing
Computer and Electronic Product Manufacturing
Electrical Equipment, Appliance, and Component Manufacturing
Transportation Equipment Manufacturing
Furniture and Related Product Manufacturing
Miscellaneous Manufacturing

The following tables present the industrial sector recycling data that was used to calculate the total tons recycled during the reference year. These tables include:

Table F-1, Industrial Survey Results, which presents the total tons recycled by material and by NAICS code.

Table F-2, *Data from Other Recycling Facilities*, which presents the total tons recycled at buybacks, scrap yards, processors, and material recovery facilities (MRFs). This table was not applicable to the Authority.

Table F-3, *Other Recycling Programs/Other Sources of Data*, which presents data from miscellaneous sources.

Table F-1 Industrial Survey Results

NAICS	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Commingled Recyclables (Mixed)	
22									
31									
32	27,571		22,985	1,400	169	9	200		
33	27,572	5,847	22,985	1,400			291	15	
Unadjusted Total	55,143	5,847	45,970	2,800	169	9	491	15	110,444
Adjustments									0
Adjusted Total	55,143	5,847	45,970	2,800	169	9	491	15	110,444

Source(s) of Information: RCRSWMA Annual District Reports

Table F-2 Data from Other Recycling Facilities

There was no data to report in Table F-2, "Data from Other Recycling Facilities/Programs." Therefore, this table has been omitted.

The RCRSWMA annually surveys scrap yards, processors, and brokers that are located in Richland County or known to accept materials generated in Richland County. The RCRSWMA maintains a list of scrap yards, processors, and brokers that is regularly updated. The RCRSWMA adds new entities to this list throughout the year as they are identified. Each year during the preparation of the Annual District Report, a list of scrap yards and secondary materials processors and brokers is compiled based on SIC codes using Reference USA, a business database. New additions to the surveying list are sent a cover letter and survey via mail and when possible, via e-mail. This is performed to gather the necessary information from the new company so they can be added to the Authority's survey effort the following year. Follow up requests are made via telephone and e-mail to entities that do not respond.

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

There was no data to report in Table F-3, "Other Recycling Programs/Other Sources of Data." Therefore, this table has been omitted.

Table F-4 Industrial Material Recovered in Reference Year

Material	Quantity (tons)
Food	0
Glass	55,143
Ferrous Metals	5,847
Non-Ferrous Metals	45,970
Corrugated Cardboard	2,800
All Other Paper	169
Plastics	9
Textiles	491
Wood	0
Rubber	15
Commingled Recyclables (Mixed)	0
Ash	0
Non-Excluded Foundry Sand	0
Flue Gas Desulfurization	0
Other (Aggregated)	0
Total	110,444

Source(s) of Information: Ohio Material Recovery Facilities and commercial Recycling; from Ohio EPA Solid Waste Management Web Page; RCRSWMA Annual District Reports

Table F-5 Quantities Recovered by Program/Source

Program/Source of Industrial Recycling Data	Quantity (Tons)
Industrial survey	110,444
Data from other recycling facilities	0
Total	110,444

Source(s) of Information: Table F-1

B. Historical Recovery

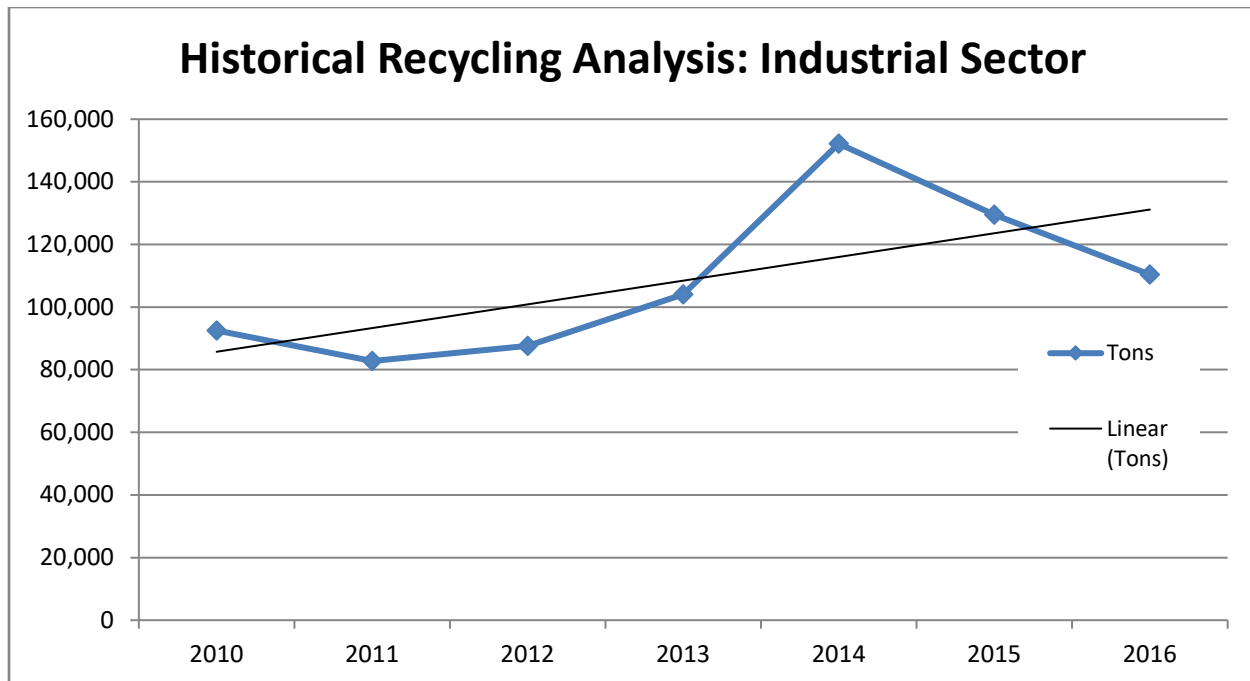
Total recovery includes recycling, composting, and waste reduction from incineration. RDRSWMA's historical recovery for the industrial sector over an eleven-year period spanning from 2006 to 2016 is presented in the following table.

Table F-6 Historical Industrial Recovery by Program/Source

Year	Tons	Annual Percentage Change	Annual Tonnage Change
2006	335,458		
2007	300,322	-10%	-35,136
2008	296,231	-1%	-4,091
2009	169,019	-43%	-127,212
2010	92,492	-45%	-76,527
2011	82,773	-11%	-9,719
2012	87,586	6%	4,813
2013	104,049	19%	16,463
2014	152,177	46%	48,128
2015	129,525	-15%	-22,652
2016	110,444	-15%	-19,081
2006 – 2016 Averages			
Annual Average Percentage Change			-7%
Average Tons Over 11-Year Period			169,098
Average Annual Tonnage Change			-22,501
2010 – 2016 Averages			
Annual Average Percentage Change			5%
Average Tons Over 7-Year Period			108,435
Average Annual Tonnage Change			11,044

Looking back at the recovery of recyclables from the industrial sector, there is a sharp decline noted from the time prior to the 2008 recession. The highest recovery occurred in 2006 with 335,458 tons recovered. In 2011, the lowest recovery occurred with 82,773 tons being recycled. Since 2006, material recovery has decreased an average of 7% annually.

If the historic review is limited to the period after the recession, 2010 forward, the current trend shows that the industrial sectors recovery efforts are increasing. Shifting the analysis maintains the low in 2011. Material recovery increased through 2014 to a high of 152,177. The following years, 2015 and 2016, do show a decline, but the overall trend since the recession is an average annual increase of 5%.



C. Industrial Recovery Projections

The industrial sector has increasingly become harder to quantify recycling efforts through the annual surveys. In 2006, 2007 and 2008 the tonnage of recycling reported was at or above 300,000 tons. The recession in 2008 had some influence in the decreased recycling rate, but the Authority believes that there are materials being recovered that are not captured through the current survey effort. The Authority intends to make a push to improve survey responses and recycling awareness through the planning period. It is expected that improved survey responses will better capture the recovery efforts in Richland County.

To project the amounts recovered through the planning period the Authority used the Annual Average Percentage change from 2010 through 2016. After that point the amount recovered was held constant similar to the industrial waste generation projections. The Authority feels that modestly increasing recycling totals during the first six years of the planning period are realistic considering the Authority attempts to expand the number of industrial sector clients it serves each year. The following table presents the industrial sector recovery statistics and projections from 2014 to 2032.

Table: F-7 Industrial Recovery Projections

Year	Industrial Survey
2016	110,444
2017	176,971
2018	186,038
2019	195,570
2020	205,590
2021	216,124
2022	227,197
2023	238,838

Year	Industrial Survey
2024	251,075
2025	263,939
2026	263,939
2027	263,939
2028	263,939
2029	263,939
2030	263,939
2031	263,939
2032	263,939
2033	263,939
2034	263,939

APPENDIX G

WASTE GENERATION



A. Historical Year Waste Generated

The historical waste generation for the RCRSWMA (years 2006 through 2016) is shown in Table G-1 below. Generation has been calculated based upon the sum of reported disposal and recycling for each year. Per capita generation decreased from 2006 to 2011, increased from 2011 to 2012, and then decreased again from 2012 to 2016. During this time period, the per capita generation rate for total generation has ranged from a low of 4.6 pounds per person per day (PPD) in 2011 to a high of 7.8 PPD in 2012. The declines in per capita generation are likely a result of the decreasing population of Richland County. The increase between 2011 and 2012 may be a result of some economic recovery experienced in the county after the 2008 recession.

Table G-1 Reference Year and Historical Waste Generated

Year	Pop	Residential/ Commercial			Industrial		Excluded (tons)	Total (tons)	Total Per Capita Gen (ppd)	Annual % Change		
		Disposed (tons)	Recycled (tons)	Per Capita Gen (ppd)	Disposed (tons)	Recycled (tons)				Residential/ Commercial	Industrial	Excluded
2006	126,398	130,821	30,738	7.0	43,425	335,458		634,486	27.5			
2007	126,039	108,454	27,759	5.9	28,848	300,322		559,427	24.3	-16%	-13%	0%
2008	125,081	98,940	28,161	5.6	15,250	296,231		532,626	23.3	-7%	-5%	0%
2009	124,490	90,135	19,567	4.8	5,790	169,019		378,555	16.7	-14%	-44%	0%
2010	124,161	91,357	17,964	4.8	13,208	92,492	94,044	309,065	13.6	0%	-40%	0%
2011	123,130	87,975	16,230	4.6	8,716	82,773	119,822	315,516	14.0	-5%	-13%	27%
2012	125,366	148,411	29,687	7.8	10,624	87,586	118,904	395,212	17.3	71%	7%	-1%
2013	122,673	130,405	31,581	7.2	51,618	104,049	168,060	485,713	21.7	-9%	59%	41%
2014	123,517	100,105	36,646	6.1	73,375	152,177	145,709	508,012	22.5	-16%	45%	-13%
2015	121,707	88,367	45,442	6.0	72,187	129,525	154,254	489,775	22.1	-2%	-11%	6%
2016	121,970	86,683	40,232	5.7	86,891	110,444	152,231	476,481	21.4	-5%	-2%	-1%

Source(s) of Information: Ohio EPA Facility Data Reports
Ohio EPA ADR Review Forms
RCRSWMA Annual District Reports

Sample Calculations (2016):

Per capita generation rate =

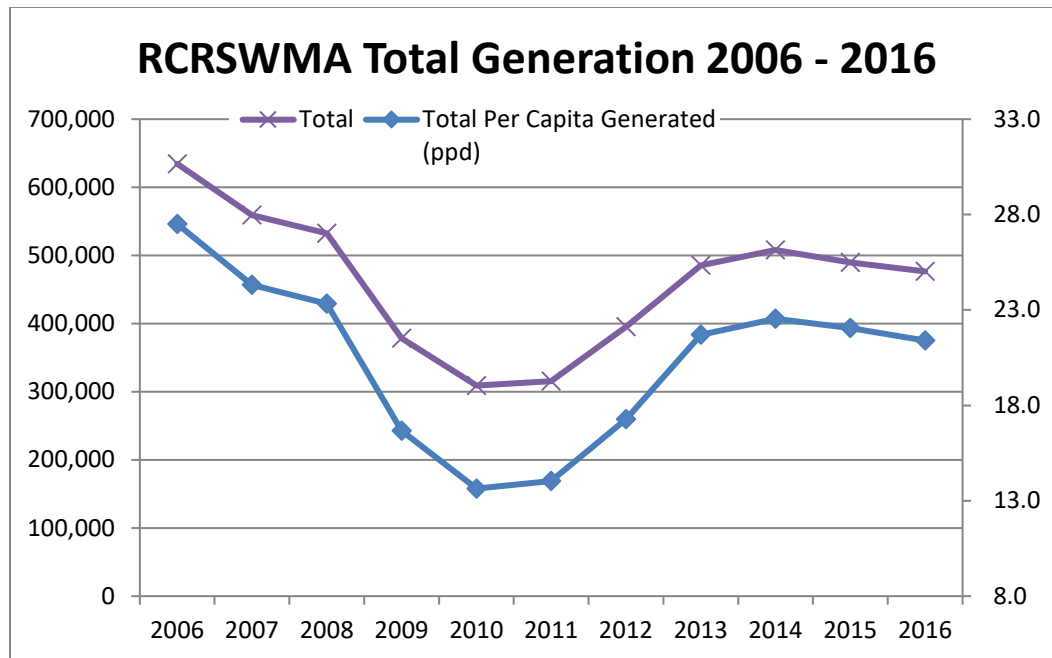
$$(\text{tons generated/year}) \times (2000 \text{ lbs/ton}) \div (365 \text{ days/year}) \times (\text{population}); (126,915 \text{ tons/year}) \times (2,000 \text{ lbs/ton}) \div (365 \text{ days/year}) \times 121,970 \text{ people} = 5.7 \text{ ppd}$$

Annual percentage change =

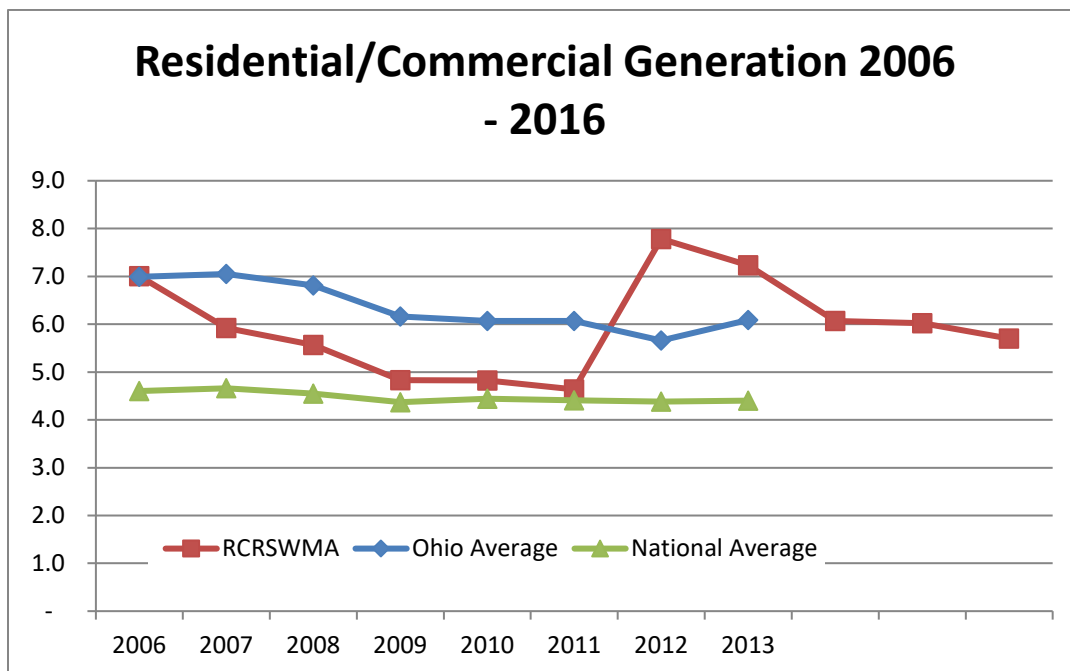
$$((\text{new year} - \text{old year}) \div \text{old year}) \times 100\%$$

$$((126,915 \text{ tons} - 133,809 \text{ tons}) \div 133,809 \text{ tons}) \times 100\% = -5\%$$

The following figure shows a graphical representation of the RCRSWMA's waste generation from 2006 through 2016.



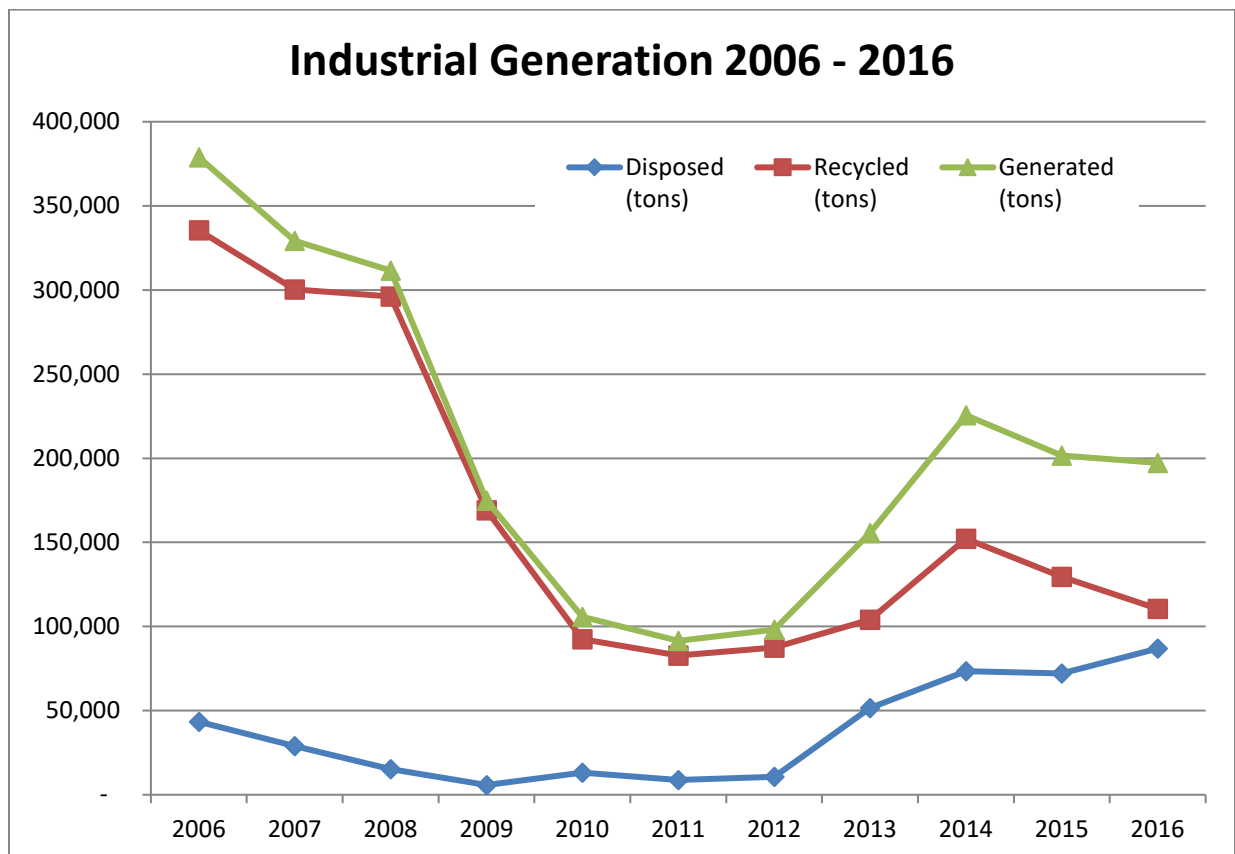
1. Residential/Commercial Waste



Richland County and Ohio per capita generation rates trend higher than the national average throughout the historic review period. Richland County's generation rate somewhat paralleled the Ohio rate until 2012. It is not known what caused the spike in residential/commercial waste generation in 2012. The trend moving forward shows a significant decline in both 2013 and 2014 and then a leveling off to a gradual decline in 2015 and 2016.

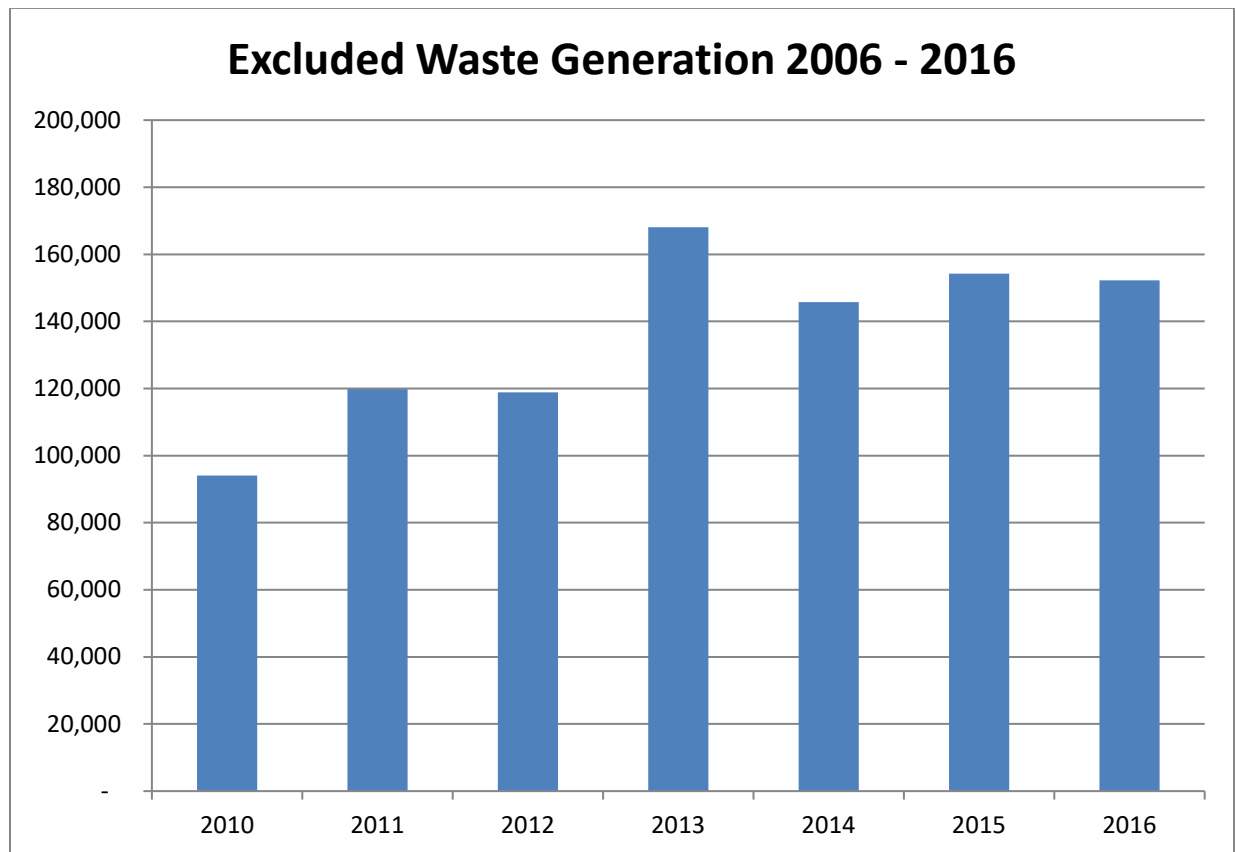
2. Industrial Waste

Total industrial waste generation in RCRSWMA declined from 2006 to 2011 with sharp declines in 2009 and 2010. These declines are believed to be the result of the 2008 recession. As industry closed in Richland County the amount of waste being generated declined. In 2010 through 2012, businesses began to move back into Richland County. Smaller automotive suppliers started operations that provided parts to the auto manufacturers. 2013 and 2014 saw significant increases in industrial waste generation, a sign that the new businesses were doing well. Throughout the historic review period the recycling tonnage has been the greater percentage of industrial waste generated. However, in recent years the disposed percentage has increased. Over the next five years of plan implementation, RCRSWMA will be looking to increase the opportunities for the industrial sector to recycle more of their materials.



3. Excluded Waste

Excluded waste was determined to be more than 10 percent of the total waste disposed in the reference year, and as a result, has been included in this analysis. The following figure indicates that the amount of excluded waste disposed from Richland County has ranged from approximately 94,000 tons to approximately 168,000 tons from 2010 to 2016. Though the first five years of the plan RCRSWMA intends to investigate the sources of the exempt waste and determine if there are better management methods than disposal.



B. Generation Projections

Generation projections for the Authority have been developed in Appendices D, E, and F for disposal and recycling for the residential/commercial and the industrial sector. These projections which are presented in detail in Appendices D, E, and F, are summarized in Table G-2 below.

Table G-2 Generation Projections

Year	Pop	Residential/ Commercial			Industrial		Excluded Waste (tons)	Total (tons)	Annual Percentage Change			
		Disposal (tons)	Recycle (tons)	Per Capita Generation (ppd)	Disposal (tons)	Recycle (tons)			Residential/ Commercial	Industrial	Excluded	Total
2016	122,030	86,683	40,232	5.70	86,891	110,444	152,231	476,481	-----	-----	-----	-----
2017	121,928	86,285	40,727	5.71	101,790	176,971	160,389	566,162	0%	41%	5%	18.8%
2018	121,639	85,888	41,260	5.73	106,496	186,038	168,984	588,666	0%	5%	5%	4.0%
2019	121,351	85,494	41,831	5.75	111,419	195,570	178,040	612,354	0%	5%	5%	4.0%
2020	121,063	85,101	42,444	5.77	116,569	205,590	187,581	637,285	0%	5%	5%	4.1%
2021	120,661	84,710	43,099	5.80	121,958	216,124	197,633	663,524	0%	5%	5%	4.1%
2022	120,259	84,321	43,799	5.84	127,596	227,197	208,225	691,138	0%	5%	5%	4.2%
2023	119,857	83,933	44,547	5.87	133,495	238,838	219,383	720,196	0%	5%	5%	4.2%
2024	119,455	83,547	45,344	5.91	139,666	251,075	231,140	750,772	0%	5%	5%	4.2%
2025	119,053	83,164	46,193	5.95	146,123	263,939	134,023	673,441	0%	5%	-42%	-10.3%
2026	118,743	82,781	47,097	5.99	146,123	263,939	134,023	673,963	0%	0%	0%	0.1%
2027	118,433	82,401	48,059	6.04	146,123	263,939	134,023	674,544	0%	0%	0%	0.1%
2028	118,123	82,022	49,081	6.08	146,123	263,939	134,023	675,188	0%	0%	0%	0.1%
2029	117,813	81,646	50,167	6.13	146,123	263,939	134,023	675,897	1%	0%	0%	0.1%
2030	117,503	81,270	51,321	6.18	146,123	263,939	134,023	676,675	1%	0%	0%	0.1%
2031	117,257	80,897	52,545	6.24	146,123	263,939	134,023	677,527	1%	0%	0%	0.1%
2032	117,011	80,525	53,845	6.29	146,123	263,939	134,023	678,455	1%	0%	0%	0.1%
2033	116,765	80,155	55,224	6.35	146,123	263,939	134,023	679,464	1%	0%	0%	0.1%
2034	116,519	79,787	56,686	6.42	146,123	263,939	134,023	680,558	1%	0%	0%	0.2%

APPENDIX H STRATEGIC EVALUATION



Appendix H is divided into fourteen separate sections to address each of the analyses described in Format 4.0. In general, the intent is to describe existing programs and discuss additional analysis that do not necessarily relate to existing programs. Existing programs have been evaluated qualitatively in terms of the suggestions included in Format 4.0 and identified strengths and weaknesses are summarized. For programs with available data, quantitative analysis is also included.

1. Residential Recycling Infrastructure Analysis

A. Curbside Recycling (Addresses Goals #1 and #2 of the State Solid Waste Management Plan)

There were four curbside recycling programs operated in Richland County during the reference year. Three of these programs were subscription based and one was non-subscription.

The Village of Shiloh operated the non-subscription program through a contract with Rumpke Recycling. The program was available at no additional fee to all village residences as part of weekly waste collection services. The Program served 630 residents.

The other three residential curbside recycling programs offered in Richland County in the reference year were subscription based recycling offered to the residents of Mansfield, Lexington and Ontario by Rumpke Recycling. Rumpke's residential waste collection customers were able to sign up for weekly curbside recycling for an additional fee.

The materials collected by both the non-subscription curbside and the subscription curbside programs were paper including mixed, office, news, magazines, brown paper, cardboard, and paper board; plastic bottles number 1 through 7; aluminum and steel food and beverage cans; and glass bottles all colors. The materials were collected using a single stream collection system. The amount recycled from these programs was included in the recycling numbers reported by Rumpke Recycling/Hauling in Table E-3. However, the amount reported also includes recycling from the drop-off at Rumpke's transfer facility and from commercial sources that Rumpke serves. Based on previous discussions with representatives from Rumpke, RCRSWMA estimates that the participation rate in the Village of Shiloh's non-subscription program was near 100%. But similar discussions would indicate that participation in the subscription programs in Mansfield, Ontario and Lexington was very low.

Challenges to implementing curbside programs:

- The area is served by many private haulers who share the market base; it is likely that contracting service in the larger municipalities will result in some smaller companies losing a substantial percentage of their customers. This is a concern to communities already losing jobs.
- Resistance from residents accustomed to choosing their own hauler. Changing from individual subscriptions to a community-wide franchise is not an easy transition and has historically been very controversial when it happens. However, there is substantial evidence that once the transition is made to community-wide, non-subscription waste collection with curbside recycling, programs are popular with residents and result in substantial increases in the amount recycled. The per household fee for community-wide contracted waste collection with recycling included can be about the same as what residents were paying for waste only collection due to economies derived from competitive bidding and compact service areas.

In spite of past interest by several municipalities in curbside recycling and the Authority's assistance in researching ways to implement non-subscription curbside, only Shiloh has been successful in its implementation of a non-subscription curbside program. Private haulers that offered subscription curbside in the past either have gone out of business or have curtailed their efforts to extend curbside recycling to new customers. As of the reference year, the only waste hauler serving the Authority that

offers residential curbside recycling to a substantial number of residents is Rumpke Recycling. Since the amount of materials collected by Rumpke's curbside programs is reported as part of the overall total of recyclable materials collected by Rumpke, it has not been possible to track the progress of the curbside collection in terms of the amount collected.

RCRSWMA believes that curbside recycling, particularly when partnered with volume based waste collection rates, is the most effective method of reducing residential waste disposal. The Authority has continued to discuss curbside informally with municipal governments and has offered to provide information and technical assistance to any municipality or local hauler that expresses interest. However, the Authority has not been able to budget funds to provide any substantial assistance with the start-up or maintenance of curbside programs. Expanding curbside programs would have the greatest impact on reducing residential waste disposal in Richland County.

B. *Drop-Off Recycling (addresses Goals #1 and #2 of the State Solid Waste Management Plan)*

The primary programs for the collection of recyclables available to the residents of Richland County are the Authority's recycling bins, the SCRAP trailer and the Electronics, Appliance and Household Collection Facility on National Parkway in Mansfield. During the reference year, the Authority offered 14 recycling drop-off locations, mostly in urban settings such as at schools or churches. In addition to the Authority's drop off locations, Milliron Recycling operates a recycling drop off service in Mansfield.

The Scrap Trailer provides a monthly drop-off opportunity at 20 local schools and one church each month. Materials accepted included #1 and #2 plastic, aluminum cans, tin cans, newspaper and corrugated cardboard. Schools receive the money from the sale of the recyclables.

Drop-Off Recycling Bins Provided by RCRSWMA

The RCRSWMA currently provides 13 full-service drop-off recycling locations throughout Richland County. At the time, that the last Authority Plan was prepared there were 14 drop-off locations available. Since the 2013 plan update, Sam's Club discontinued the use of their location as a drop-off for recyclables. As of August 2018, bins are situated at the following locations:

- Bellville Village (serving the village and Jefferson and Washington Townships)
- Bloominggrove Township
- Butler Village (serving the village and Worthington Township)
- Crestview High School (serving Weller Township)
- Jackson Township
- Lexington Village (serving the village and Troy and Washington Townships)
- Lucas Village/Monroe Township
- Mifflin Township
- Plymouth High School (serving Plymouth Village and Plymouth Township)
- Plymouth Township (at the Township garage)
- Sharon Township
- Springfield Township
- Weller Township
- the National Parkway Appliance, Electronics and Household Recycling Facility (Mid-Ohio Recycling which is discussed later in this Section)
- Air National Guard Facility serve the city of Mansfield and surrounding area.

The Authority maintains large compartmented roll-off recycling containers at these locations and contracts with a private recycler (currently Rumpke) to empty the containers and process the material. For convenience, the containers are placed on public property near township or village facilities like

township garages and village parks. It is up to the individual townships and villages to determine the location for the drop-off containers. A list of the drop-offs, including additional details about the location of the facilities, is included in Appendix B. With the exception of the Air National Guard Facility and the National Parkway facility, the drop-off locations are available to the general public 24 hours per day, 7 days a week. The Air National Guard and the National Parkway facilities are available during day-time hours.

The RCRSWMA monitors the drop-off container sites to keep the sites clean and to ensure the containers are emptied when full. Additionally, RCRSWMA relies on the villages and townships to informally monitor the use of the containers to discourage illegal dumping.

The Authority promotes use of the containers through the Authority's public education and awareness programs. The sites are listed on the Authority's web site and in Authority publications. Educational presentations intentionally address the program and direct the audiences to sites that are convenient for that group of people.

The materials that are currently being collected are #1 and #2 plastic, newspaper, magazines, phone books, paper grocery bags, cereal and snack boxes, flattened cardboard, clean pizza boxes, aluminum cans, steel cans tin cans corrugated cardboard and cartons for juice, soy milk, broth, cream, etc.

The hauler/recycler who services the containers reports the amount collected to the RCRSWMA and monitors the material that is collected for contamination or other issues that may need to be addressed. Throughout the review period, RCRSWMA has not had issues with contaminated loads or open dumping at the drop off locations. The Authority has and will continue to educate the citizens of Richland County on the appropriate materials to recycle.

In 2016, it is estimated that the drop-off sites received 458 tons. Because this program provides access to recycling throughout Richland County, the Authority believes it is important to continue the operation of the program at its current level, and if there is increased community interest and available budget, additional locations will be considered.

RCRSWMA Electronics, Appliances and Household Collection Facility: Mid-Ohio Recycling

The Authority maintains the Mid-Ohio Recycling facility as a drop-off location accepting electronic items, appliances, tires for recycling as well as common household recyclables. The facility is located at 1125 National Parkway in Mansfield. It is open 7 a.m. to 4:00 p.m. Tuesday through Friday and 8 a.m. to 12 p.m. on Saturday. Items There is a charge for TV's, microwaves, monitors, compact fluorescent bulbs/tubes and Freon containing appliances. All other electronic items and appliances are accepted at no cost. Tires are accepted for a small fee and each household is limited to ten tires per trip.

Other household recyclables accepted at Mid-Ohio Recycling are glass food and beverage containers (all colors), #1 and #2 plastic, aluminum cans, steel cans, newspaper, books, office paper, magazines, catalogs, cell phones, telephone books, cardboard and rechargeable lithium and button cell batteries.

The Authority works to secure contracts with material handlers to manage the recyclables and electronics collected. At times, the Authority has been able to generate small amounts of revenue based on the materials that they collect. In recent times, that has not been the case and they have

The RCRSWMA operates the Mid-Ohio Recycling facility and promotes the service through their community outreach efforts. The focus of the program is to provide a collection point for materials that are more difficult to recycle (electronics, appliances, etc.) and to add additional opportunity for citizens to drop off more common recyclables. The Mid-Ohio Facility also provides opportunity for small

businesses that do not generate enough material to support the collection of recyclables at the business site. This continues to be an important program offered by the Authority.

The SCRAP Trailer

To maintain the marketability of the recyclables collected, keep the collection sites clean, and control costs, in 2001 the RCRSWMA decided to use mobile recycling trailers that visit designated sites year round on a regular monthly schedule. The sites are mostly at schools. The following sites were available in 2016:

2 sites in Lexington –	Eastern Elementary, and Western Elementary
15 sites in Mansfield –	Brinkerhoff Elementary, Discovery School, The Early Childhood Center, Eastview Elementary, Madison Junior High, Madison South, Malabar Middle School, Mansfield Christian School, Mifflin Elementary, Newman Elementary, Ohio State University Mansfield Campus, Prospect Elementary, Sherman Elementary, St. Peter's Elementary, and Woodland Elementary;
3 sites in Shelby –	Auburn Elementary, Dowds Elementary, and Shelby Central

In addition, one of the SCRAP trailers is placed at the Ontario United Methodist Church for one week a month.

The RCRSWMA works with school organizations that serve as site hosts to promote the drop-off programs. In turn, the RCRSWMA rebates the proceeds from the sale of the materials to the organizations. As of February 2019, the sites have remained the same as in 2016. However, the Authority occasionally needs to move sites, usually due to school closings or relocations.

The program is provided by the RCRSWMA using RCRSWMA owned trucks and trailers. RCRSWMA staff delivers the trailer to the site, tends to the trailer during collection, and then takes the materials to Milliron Industries where the trailers are emptied and the materials are processed. The RCRSWMA pays for the processing and returns the money earned by the sale of materials to the cooperating host organization.

In addition to providing community access to recycling, the authority is able to use this program as an educational opportunity for the students at the various schools that participate.

The materials accepted through the SCRAP Trailer program are #1 and #2 plastic, aluminum cans, tin cans, newspaper and cardboard. RCRSWMA communicates with the schools and the host organizations in an effort to identify and solve any problems that might impede the successful operation of the sites.

In general, the SCRAP Trailer program has been a success and continues to be an important program for the Authority, it provides access and education. In 2016, the SCRAP Trailer program collected 107 tons of material. Projections of recycling during the planning period are included in Appendix E of this plan.

Richland County Recycling and Transfer Station operated by Rumpke Waste and Recycling

Rumpke provides a drop-off for residential recycling at the Richland County Recycling and Transfer Station on Newman Street in Mansfield. The materials that Rumpke collects at this location are aluminum cans, steel food and beverage cans, HDPE, and PETE containers, mixed paper, office paper, newspaper, glass containers (all colors), and corrugated cardboard.

This facility is open to the public and to businesses and industry. It is used as a transfer station to consolidate waste loads to transfer for disposal and it is used to consolidate loads of recycling for transfer to Rumpke MRFs for processing. This facility provides support for all of the collection services provided by Rumpke Waste and Recycling in Richland County.

Rumpke reports total recycling for Richland County, (i.e. curbside, drop off collection and transfer station) the amount collected at the drop-off is not reported separately.

Milliron Industries Recycling drop-off and Buy-back

Milliron Industries operates a recycling drop-off and buy-back at the scrap facility on St. Rt. 39 in Mansfield during regular business hours Monday through Saturday.

This facility is a convenient option for residents of Richland County. Milliron Industries pays for certain materials, like aluminum cans. The buy-back opportunities draw some residential recyclers that might not recycle without the monetary incentive. The RCRSWMA includes this location in a list of drop-off and buy-back recycling opportunities, and Milliron Industries advertises to attract more residential materials like aluminum cans.

The materials that are collected at this drop-off are aluminum cans, steel food and beverage cans, HDPE, and PETE containers, mixed paper, office paper, newspaper, phone books, magazines, corrugated cardboard, appliances, lead acid batteries, and ferrous and non-ferrous metals. Milliron Industries reports the amount of materials that are accepted at the facility from residential, commercial and industrial customers.

C. *Recycling through private haulers, and private scrap recyclers (addresses Goal #2 of the State Solid Waste Management Plan)*

Richland County is served by a number of waste haulers and private scrap recycling industries which are located both in and out of Richland County. Several waste haulers, not already mentioned by name in this section of the Plan, provide recycling services for commercial and industrial customers (See Appendix B). Most scrap recyclers specialize in certain types of materials—metals, paper, or plastic. Some serve primarily residential and small commercial customers and others specialize in industrial materials. Richland County has been a center for steel production and heavy manufacturing. There are several scrap recyclers that focus on processing ferrous and non-ferrous metal from industrial, demolition, and automobile salvage. For the most part, the scrap yards in Richland County have not responded to recycling surveys. The industrial recycling reported in this Plan is from surveys completed by manufacturers. Reported recycling of residential/commercial materials through private haulers and scrap yards in Richland County is listed in Appendix B.

Additional effort to reach out to the scrap yards may be necessary through the coming planning period.

D. Material Recovery Processing Facilities (addresses Goal #2 of the State Solid Waste Management Plan)

Recycling cannot be accomplished without facilities that sort, process, and market the recyclables that are collected. Scrap yards provide these services for materials that are relatively homogeneous. Commingled recyclables are usually separated and then processed at a materials recovery facility. Milliron Recycling processes the materials collected by the RCRSWMA drop-off sites and the SCRAP trailer. Most of the materials that are collected at the National Parkway facility are processed by Milliron. Some materials like electronics and tires are managed by other processors.

The material collected by Rumpke's residential curbside and commercial recycling are transferred to Rumpke MRFs outside of Richland County for processing. The majority of the material collected by Rumpke goes to the Rumpke MRF in Columbus, Ohio.

The Authority does not operate any facilities that process material to this extent and relies on private sector material recovery facilities for the processing and marketing of recyclables collected by Authority programs.

E. Yard Waste Management (addresses Goal #5 of the State Solid Waste Management Plan)

The yard waste composting facilities that accept yard waste from the Richland County are listed Appendix B. Some are for private use only and some accept materials from the public.

RCRSWMA Compost Facility, Cairns Road, Mansfield

Since 1997, the RCRSWMA has maintained a yard waste composting facility where the public may bring source separated yard waste. The facility accepts source separated yard waste from the public and from local leaf collection programs. The finished compost product is sold to the public and is in great demand. The Facility is open March through November on Monday, Tuesday, Thursday, and Friday from 8 a.m. to 4:30 p.m. and Saturday from 8 a.m. to noon.

The Authority's compost facility accepts brush, Christmas trees, shrubs, grass, leaves, sod, trees and limbs, mixed yard waste, and wood chips.

The compost facility has been successful at collecting source separated yard waste and distributing the resultant compost. The sale of the compost material is intended to cover the costs of operating the compost facility. Generally, the revenue does not cover all of the operational costs.

In 2016, 6,213 cubic yards or, at an average of 3 cubic yards per ton, 2,071 tons of source separated yard waste were accepted at the Cairns Road Facility. In that same year, a total of 3,496 cubic yards of compost were distributed.

Mansfield Park Avenue Compost Facility

The City of Mansfield operates a yard waste facility. In 2016, the facility reported receiving 4,615 cubic yards or 1,539 tons of yard waste. Mansfield City is responsible for the facility and operates it for the benefit of Mansfield residents. The facility distributed 272 cubic yards of compost.

Field Spreading of Leaves

Several communities collect leaves in the fall and spread the leaves on farm fields. The local governments that reported field spreading leaves were the City of Ontario, Village of Lexington and City of Shelby. These three communities spread a total of 3928 cubic yards of leaves. This is an on-going activity of several local governments. However, the amounts collected usually must be estimated based on the collection method, the size of the collection truck and the number of loads. Also, it is

difficult to get reports since measurement and reporting are not priorities for collection staff.

Composting education-backyard composting

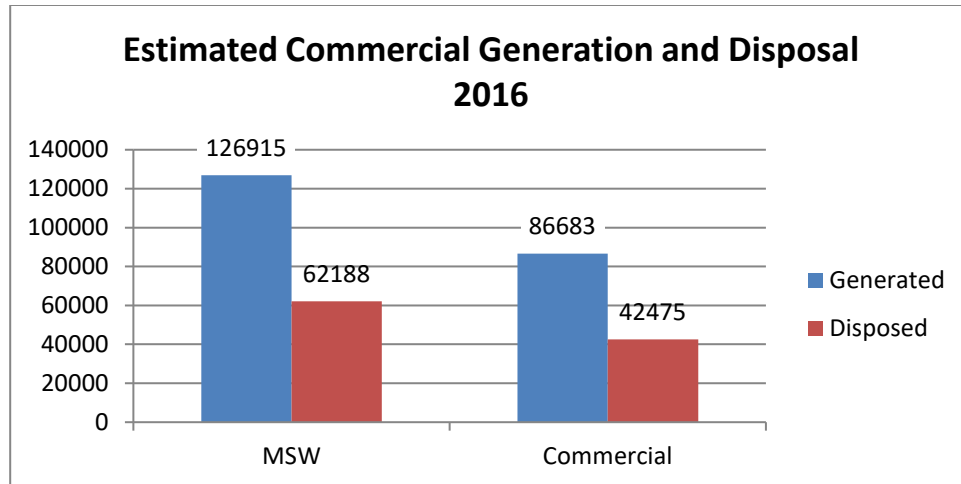
The Authority provides printed information and information on the Authority's web site to encourage property owners to manage yard waste in their own yard by using mulching mowers and by backyard composting.

PROGRAM SUMMARY

- Many recycling opportunities exist for the residents of Richland County. The drop off programs offered by the RCRSWMA provide broad coverage of the county. An improvement to focus on for the drop off program would be to better track the materials that are collected. The current contract holder, Rumpke, will combine the materials collected at the drop off locations with other recyclables they collect through their programs. This makes it difficult for RCRSWMA to provide an accurate evaluation of the program. The data collected continues to show the drop offs are successful, but better data may be helpful to distinguish the extent of the success and which locations have the best collection rate. RCRSWMA will continue to work with their service providers through future contracts to get better data for this program.
- The addition of curbside recycling to other communities would likely increase the collection of recyclables. But these programs have proven difficult to implement.
- The SCRAP Trailer program offers access to recycling and the opportunity for education in Richland County schools. Using the program to give back to the schools and community shows the students that there can be value in recycling. Unlike the difficulty collecting data for the drop off program, the SCRAP trailer program provides data specific to each participating school. This allows the Authority to analyze the program as a whole and each individual participant.

2. Commercial/Institutional Sector Analysis

The Authority does not have data to determine the amount of commercial waste which is disposed since landfills are only characterize waste disposed in terms of residential plus commercial waste. However, a study conducted for the U.S. Environmental Protection Agency which was published in July 2013 estimated that disposed tonnage from commercial sources ranged from 38 to 59 percent of the total residential/commercial disposal, with an average of 49 percent (See "MSW Residential/Commercial Percentage Allocation – Data Availability", U.S. Environmental Protection Agency, Office of Resource Conservation and Recovery, July 2013). Applying this average percentage to the total Richland County residential/ commercial disposal and generation tonnage results in an estimated 86,700 tons of commercial waste generated and an estimated 42,475 commercial waste disposed in 2016.



The general types of materials generated as commercial waste are paper/paperboard, metals, and plastics. Comparing residential to commercial, the commercial sector will typically produce more of these wastes than the residential sector. Other waste materials generated are food and yard waste. Arguably, these compostable materials are not recovered at the level of highest potential. Plastics, wood and textiles are also disposed at a rate that suggests additional recovery from the commercial sector is possible.

Richland County includes several large commercial businesses and institutions, which could be the focus of greater recycling. The following table lists several companies and institutions.

Largest Commercial/Institutional Employers

Company Name	Type
Mansfield Correctional Institute	Prison
Ohio Health	Health care
Startek	Marketing
Avita Health Systems	Health care

The Authority operates the Mid-Ohio Drop-off at the RCRSWMA located on National Parkway, which is open to residents and businesses within Richland County. This facility is discussed later in this Appendix. In summary, the facility accepts the following materials from residents and businesses:

Aluminum cans	Steel/tin cans	Paper
Cardboard	Plastics #1 & #2	Glass
Cell phone	Lithium/button cell batteries	Ink jet cartridges
Appliances	Electronics	Scrap tires
Florescent bulbs	Televisions	

In order to provide recycling opportunities for governmental agencies, non-profit organizations, and smaller commercial establishments that generate moderate amounts of recyclables, the Authority operates weekly and monthly collection routes. As of August 2012, 6 businesses and 5 government agencies receive weekly collections, 4 government agencies, one school, 4 non-profits, and 6 commercial businesses receive monthly collection, and 2 businesses are scheduled every other month. The service was originally started as a recycling collection program for county government agencies. Over the years, it has been expanded to include additional stops. The RCRSWMA considers requests for service and adds additional collection stops if the stop can reasonably be accommodated within the time, vehicle collection space, and mileage radius allotted to this program.

The materials collected are corrugated cardboard, office and mixed paper, and plastic containers #1 and #2. The materials collected by this program are delivered to Milliron for processing and are included with the National Parkway facility collection amounts. This program has been successful in that it provides convenient service to local government offices. The Authority intends to continue the program into the planning period and if possible to expand it.

Finally, the Authority maintains an outreach program for businesses and institutions in the County to assist with the development and/or maintenance of recycling programs.

PROGRAM SUMMARY

The commercial businesses and institutions in Richland County are served by the RCRSWMA, Milliron Recycling and Rumpke waste management all located in Richland County. Current recycling data indicate that this sector is participating in recycling activities, but a poor response to the district survey may imply that there is additional recycling taking place that is not being tracked. RCRSWMA believes that there is an opportunity to improve the districts recycling activity tracking.

3. Industrial Sector Analysis

In 2016, Richland County industries recycled approximately 110,444 tons of waste, while disposing of 86,891 tons. The tons of industrial waste disposed and recycled, including the types of materials recycled, are discussed in some detail in Section 7, Diversion Analysis.

Richland County is home to several medium-sized manufacturers that are listed in the following table.

Largest Industrial Employers in Richland County

Company Name	Type of Manufacturing
Newman Technologies	Automotive
Stoneridge, Inc.	Automotive
The Gormann-Rupp Company	Manufacturing
Therm-O-Disc, Inc.	Manufacturing
Arcelor Mittal	Manufacturing
Jay Industries	Plastics manufacturing
AK Steel	Manufacturing
Next Generation Films	Packaging manufacturing

Although waste reduction is being implemented by many industries as part of over-all programs to be efficient and competitive, waste reduction is often difficult to quantify. The survey responses for waste reduction in Richland County have been poor. Increased outreach to the industries in the County is a goal for this planning period. With additional communication, the Authority hopes to improve the reporting for the industrial sector so that more accurate numbers can be achieved.

Industry waste reduction and recycling programs are extremely varied depending upon the type and size of the industry, the waste stream it generates, and the availability of haulers and recyclers to assist the industry in the collection and marketing of materials. In general, the same types of programs and assistance are offered to commercial businesses and to industrial waste generators.

The RCRSWMA is prepared to provide the following assistance to industries:

- Identify and disseminate information on recycling opportunities and service providers.
- Provide assistance to local businesses in identifying opportunities for grants or low-interest loans from federal and state sources to fund pollution prevention.

- Provide education and technical assistance including guidelines and methodology for performing waste audits and communicate the availability of this type of assistance to business and industry.
- Promote participation in OMM, the Ohio Materials Marketplace.

The Authority staff is available to answers questions from businesses about how and where to recycle. The Authority uses the annual industrial waste and recycling survey to contact manufacturers and engage those regarding recycling efforts. The survey includes a box to check to request additional information on recycling and waste reduction so that the Authority can identify industries that may want assistance.

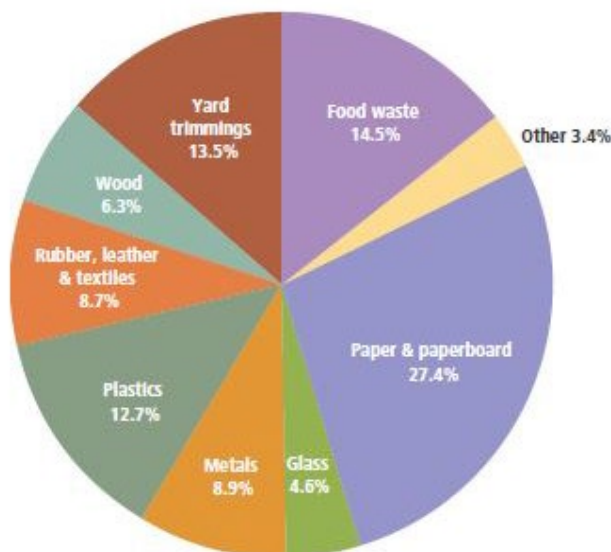
PROGRAM SUMMARY

The industries located in Richland County are served by the RCRSWMA, Milliron Recycling and Rumpke waste management all located in Richland County. Current recycling data indicate that this sector is participating in recycling activities, but a poor response to the district survey may imply that there is additional recycling taking place that is not being tracked. RCRSWMA believes that there is an opportunity to improve the districts recycling activity tracking, and will plan to focus on the companies identified above as the largest industrial employers in Richland County.

4. Residential/Commercial Waste Composition Analysis

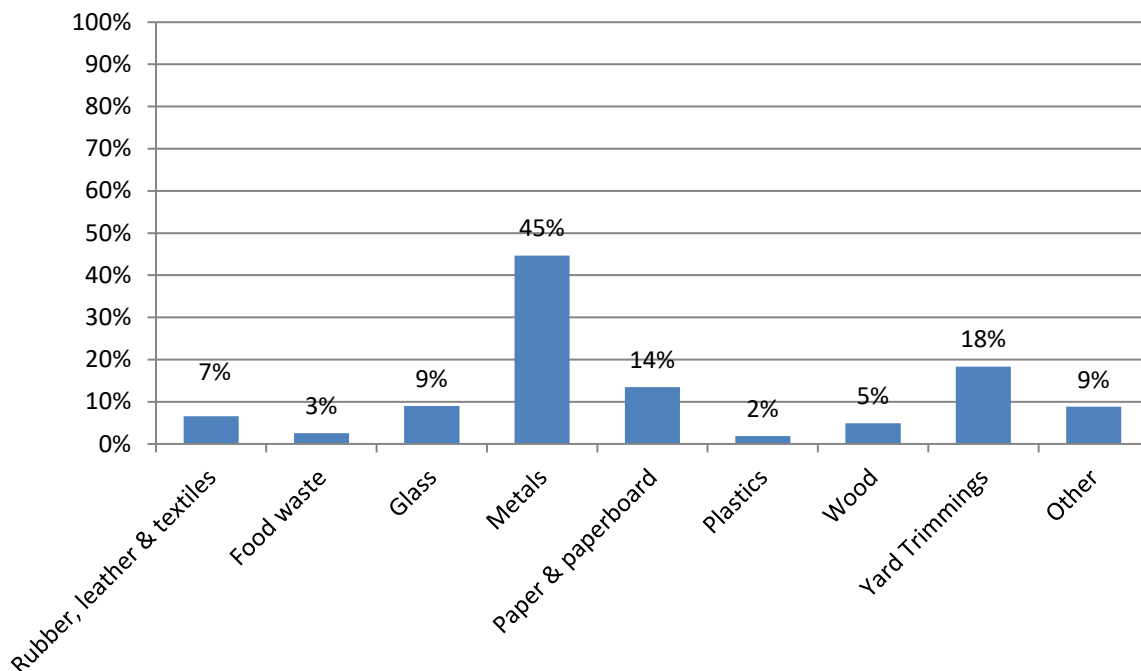
According to U.S. EPA, paper (which includes cardboard), food, yard waste, and plastics are the categories comprising the highest percentage of the residential/ commercial waste stream before any recycling takes place (see following figure).

Total MSW Generation by Material - 2012



In 2016, RCRSWMA tracked the recovery of more than 12,000 tons of fiber (i.e., cardboard and all other paper), 1,869 tons of scrap tires, and 4026 tons of yard waste. Small amounts of plastics and food were recovered for recycling or composting. Applying the national waste composition percentages to total residential/commercial sector generation provides estimates of the total tonnage potentially available for recovery in Richland County (these estimates likely overestimate the tonnages, which could reasonably be recovered from the residential/commercial waste stream due to contamination and other factors). The following figure shows the percentage of materials recovered in 2016 from data collected by RCRSWMA. Roughly 29 percent of the available fiber and 34 percent of available yard waste was recovered from the waste stream in 2016, while very small percentages of available plastics and food were recovered.

Percentage of Available Materials Recovered



Roughly 45 percent of the available metals, 18 percent of available yard waste and 14 percent of available paper/paperboard were recovered from the waste stream in 2016. Richland County's history in the steel industry lends to the high metals recovery and paper and paper board are easy materials to recover from commercial operations.

5. Economic Incentive Analysis

The RCRSWMA currently does not fund any economic incentive-based programs. However, the SCRAP Trailer program operates with an economic incentive for the host locations to participate to their fullest ability in that the host organization receives the profit from the sale of the recycled materials.

A. Summary of Findings and Challenges

Given the rural nature of the Authority and the overall budget of the RCRSWMA, the Authority does not feel it is in a position to create economic incentive programs. The Authority does acknowledge that it can continue to offer technical assistance to support economic incentive programs especially in the residential/commercial sector.

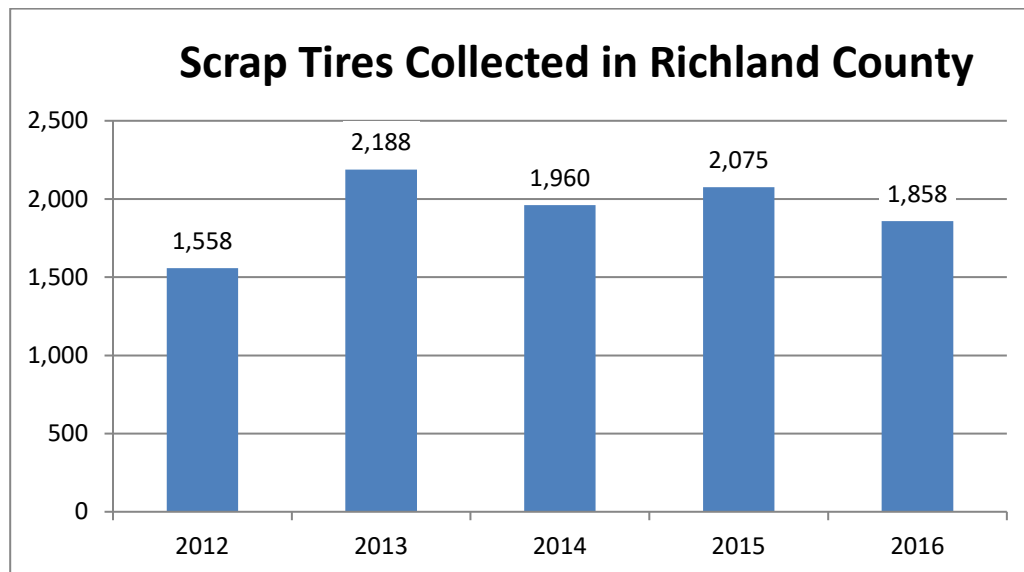
6. Restricted and Difficult to Manage Waste Streams Analysis

Lead acid batteries, HHW, and yard waste are specifically addressed in the State Solid Waste Management Plan because they are banned from landfills (tires, lead acid batteries, and segregated yard waste), or may increase the hazards of landfilling (HHW). In addition to these materials, other materials such as scrap tires, appliances or e-wastes couches and mattresses may be bulky or contain hazardous components that generate disposal concerns. The Authority or local communities have programs designed to address each of these materials.

Scrap Tires

The RCRSWMA continues to collect tires at the Mid-Ohio Recycling Center. In 2016 received approximately 1,869 tons of scrap tires. The total number of scrap tires recovered from the RCRSWMA from 2012 to 2016 as reported to Ohio EPA is shown in the following figure.

Scrap tire collection has improved throughout Ohio. The public is better educated regarding the need to appropriately manage scrap tires and the fees collected through the sale of new tires has helped to clean up scrap tire dumps around the state. Currently the RCRSWMA is not aware of any scrap tire dumps in Richland County.



Household Hazardous Waste

Household hazardous wastes (HHW) are those wastes produced in our households that are hazardous in nature, but are not regulated as hazardous waste under federal and state law. A few examples of HHW are pesticides, pool chemicals, drain cleaners, degreasers, and solvents. In the Plan under which the Authority is currently operating a comprehensive HHW collection event is an optional program. Due to budget constraints, the Authority has discontinued holding comprehensive HHW collections. In the reference year, the Authority partnered with several local businesses and held a limited HHW collection on November 14, 2016. Items collected included smoke alarms, carbon monoxide detectors, Fire extinguishers, mercury thermometers, mercury thermostats, lead acid batteries, rechargeable batteries and propane tanks. The Authority also partnered with local law enforcement agencies for a special prescription drug take back collection.

The RCRSWMA Collection Facility accepts CFL bulbs, household batteries, appliances (with CFC removal), and ink jet cartridges year round.

The Authority is responsible for the limited HHW programs. They provide funding, publicity, organization, and materials management in cooperation with private recycling businesses.

Lead Acid Batteries

At the present time, the private enterprise system for collecting batteries seems to be working smoothly. Virtually all area automotive supply stores and repair shops accept old batteries in exchange when new batteries are purchased and many use a deposit system. Several area scrap recyclers buy batteries. Lead acid batteries were included in the limited HHW event, but the Authority encourages the use of private sector recyclers and automotive supply dealers for the recycling of lead acid batteries.

Appliances and Electronics

The Mid-Ohio Recycling facility is operated by the Authority and addresses the collection of electronics and appliances. The Authority has held special collection events that feature appliances, electronics or tires in order to bring attention to the availability of collection opportunities for these materials, but the mainstay of the collection program is the National Parkway facility, which is open year round. This facility accepts CFL bulbs, household batteries, appliances (with CFC removal), and ink jet cartridges year round.

7. Diversion Analysis

The amounts of waste which were disposed or diverted from disposal through recycling from 2006 to 2016 are shown in the table below. Diversion in the residential/commercial sector has fluctuated since 2006, but was substantially higher in 2016 than 2006. Recycling in the industrial sector has also fluctuated, but was significantly lower in 2016 than 2006.

Year	Population	Residential/ Commercial		Industrial		Excluded	Total	Per Capita Generated (ppd)	Annual % Change in Total Tons
		Disposed	Recycled	Disposed	Recycled				
2006	126,398	131,292	30,738	43,425	-	140,061	345,516	15.0	
2007	126,039	134,914	27,759	28,848	-	133,735	325,256	14.1	-6%
2008	125,081	147,872	28,161	15,238	-	103,051	294,322	12.9	-10%
2009	124,490	142,896	19,567	5,762	169,019	44,995	382,239	16.8	30%
2010	124,161	146,114	18,547	13,195	94,492	94,044	366,392	16.2	-4%
2011	123,130	146,881	16,230	8,716	82,773	119,822	374,422	16.7	2%
2012	125,366	148,411	17,991	10,624	87,586	118,904	383,516	16.8	2%
2013	122,673	130,405	19,872	51,618	104,049	168,060	474,004	21.2	24%
2014	123,517	100,105	21,277	73,375	152,177	145,709	492,643	21.9	4%
2015	121,707	88,367	3,543	72,187	129,525	154,254	447,876	20.2	-9%
2016	122,030	86,683	17,226	86,891	121,507	152,231	464,538	20.9	4%

Residential/Commercial Sector

The RCRSWMA's residential/commercial recycling (or diversion) rate during the past 5 years has increased from 11 percent to 17 percent (see the following table). The per capita diversion rate as measured in terms of pounds per person per day (PPD) peaked in 2014.

Residential/Commercial Diversion Rates: 2012-2016

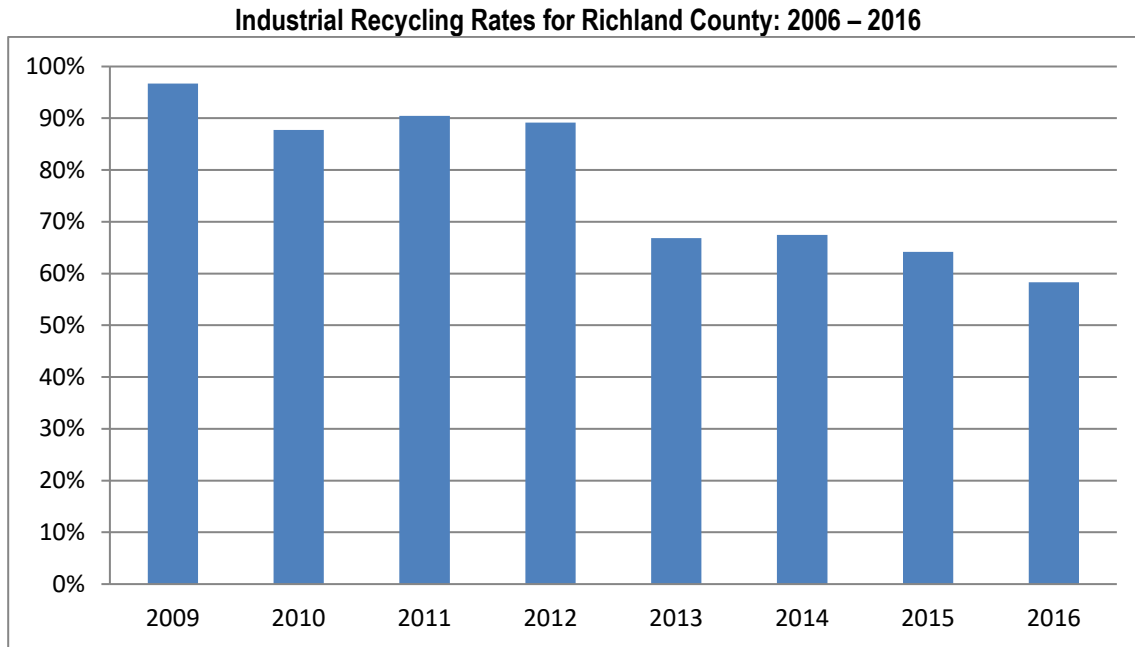
Year	Diversion Rate	
	Percent	Per Capita (PPD)
2012	11%	0.79
2013	13%	0.89
2014	18%	0.94
2015	4%	0.16
2016	17%	0.77

The RCRSWMA experienced some fluctuations in residential/commercial recycling tonnages from 2012 through 2016, while the disposal tonnages decreased. This dataset contained too few data points to determine a statistically significant relationship between recycling and disposal.

The current Plan projected 18,224 tons of residential/commercial recycling (including composting) for 2016. The residential/commercial sector rates projected in the current plan for 2016 were 17 percent and 0.81 PPD. The actual percentage was 17% and the per capita diversion rate was slightly lower at 0.77 PPD.

Industrial Sector

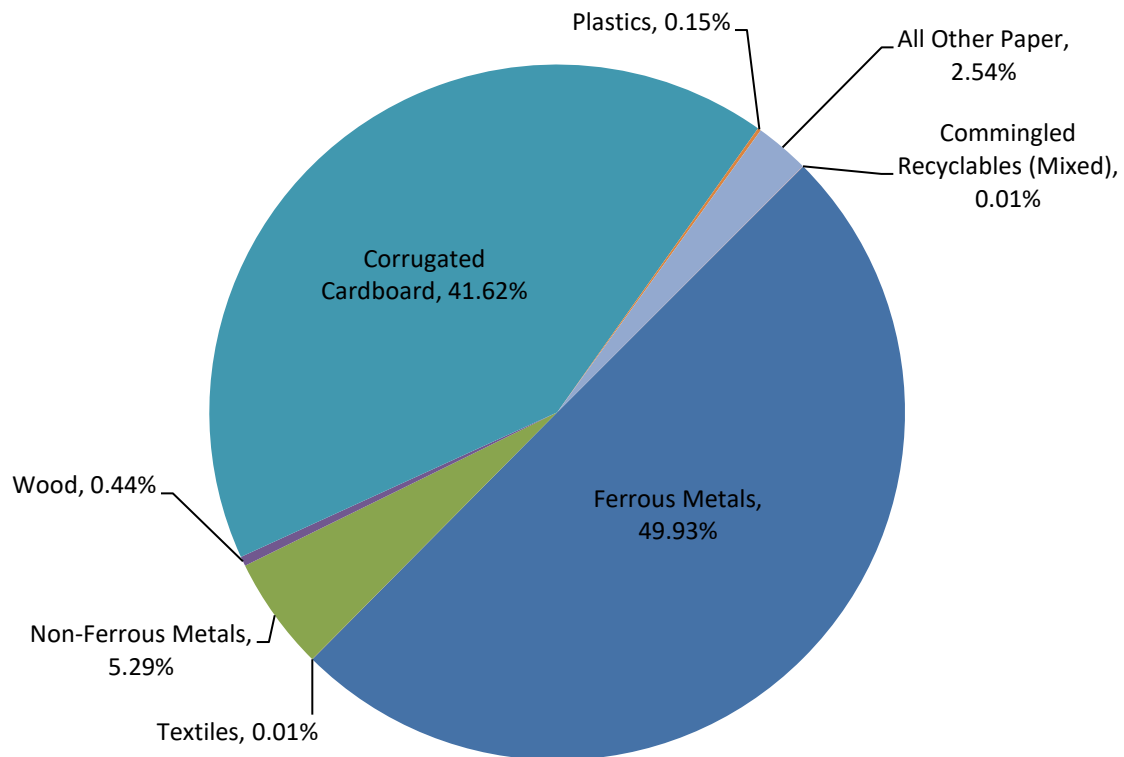
The industrial recycling rates in the RCRSWMA for 2009 through 2016 are shown in the following figure. The Authority has achieved an industrial recycling rate above the percentage goal for industrial recycling established in the *State Solid Waste Management Plan* in each of these years except 2016. The Authority believes that decreasing responses to the Industrial Recycling Survey have contributed to a recycling rate which is below the *State Plan* target of 66 percent for the industrial sector.



Compared to the current Plan, which projected 84,428 tons of industrial recycling for 2016, the actual amount diverted in the reference year was 121,507 tons. The current plan also projected an industrial recycling rate of 88% for 2016, which is higher than the actual 2016 recycling rate of 58%.

As shown in the following figure, ferrous metals and corrugated represent the material types recycled in greatest amounts in Richland County for the industrial sector.

Industrial Material Types Recycled in Richland County SWMD: 2016



8. Special Program Needs Analysis

Format v4.0 defines Section 8 as programs which are specifically funded under the authority granted in Ohio Revised Code Section 3734.57(G)(3) through (9). These program areas of allowable uses for SWMD funds collected under ORC Section 3734.57 are as follows:

- Section 3734.57(G)(3). Boards of Health, Solid Waste Enforcement
- Section 3734.57(G)(4). Counties, Road/Facility Maintenance
- Section 3734.57(G)(5). Boards of Health, Water Well Sampling
- Section 3734.57(G)(6). Out-of-state Waste Inspection
- Section 3734.57(G)(7). Enforcement of Anti-littering
- Section 3734.57(G)(8). Boards of Health, Training & Certification
- Section 3734.57(G)(9). Cities and Townships, Road maintenance, public services, etc.

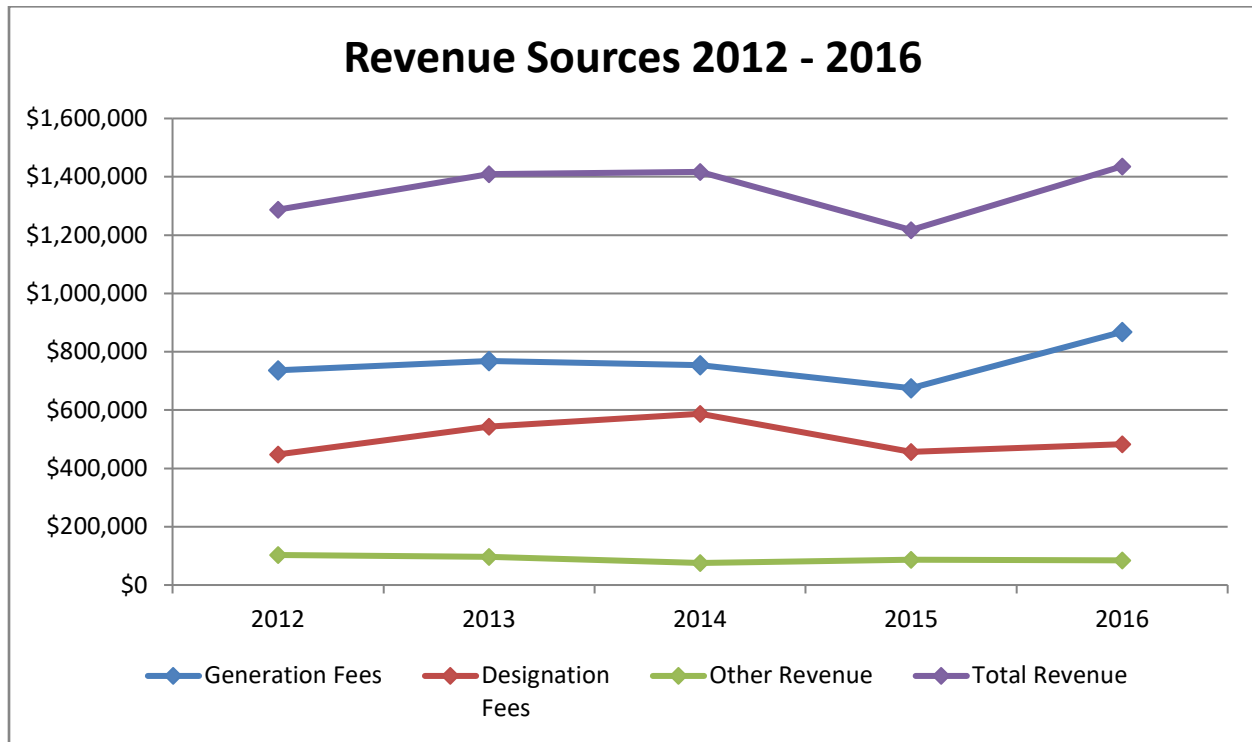
From 2012 through 2016, the Authority provided \$36,700 to the Richland County Health Department for solid waste enforcement activities under Section 3734.57(G)(3).

9. Financial Analysis

The financial analysis has been divided into three parts: Revenues, Expenses, and Authority Fund Balances.

A. Revenues

As shown in the figure below, money received from the county's generation fee has consistently provided the majority of the revenue for the Authority. On average over \$760,000 per year during the historic review period. The contract fee from the Noble Road Landfill has also comprised a substantial amount of the total Authority's revenue, over \$500,000 on average over the five-year period. Total revenue has ranged from approximately \$1,200,000 to \$1,400,000.

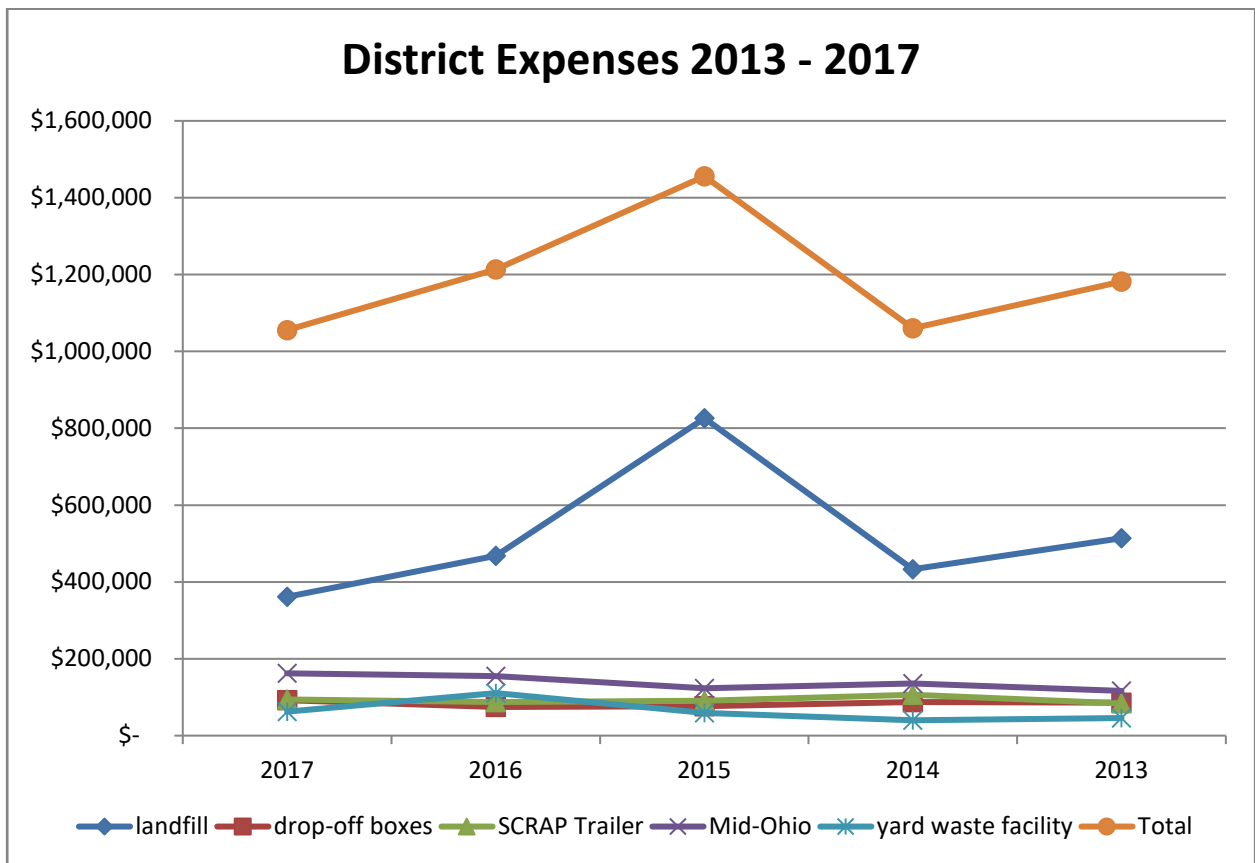


The current solid waste plan projected revenue of approximately \$1,308,000 would be collected in 2016. The actual amount collected was \$1,436,000, approximately \$128,000 more than projected.

In summary, the Authority's revenue sources appear to be stable and should continue to provide sufficient money for operations. In addition, the solid waste facilities providing most of the contract and generation fee revenue are expected to continue operating and receiving Richland County waste into the foreseeable future.

B. Expenditures

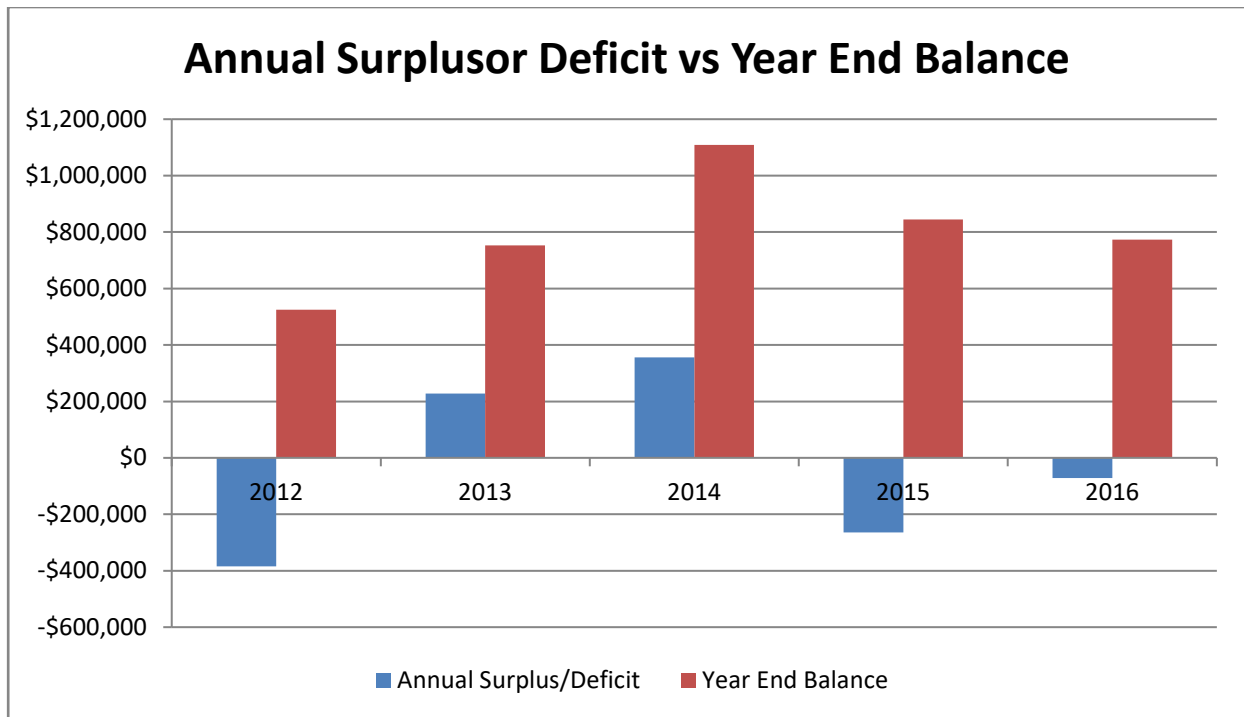
The major categories of expenses for the Authority reported to Ohio EPA since 2012 have been landfill maintenance, the drop-off boxes and SCRAP Trailer programs, The Mid-Ohio collection facility and the yard waste facility operated by the Authority, as shown in the following figure. By far the cost of maintaining compliance at the closed Richland County Landfill is the largest expense the Authority incurs. The cost to maintain the landfill is as much and sometimes more than the cost to implement all of the other programs combined. The total expenses for the landfill as projected in the current Plan were \$588,000 for 2016 or approximately \$120,000 more than the actual expenditures. But a comparison of the 2015 prediction, \$576,300, to actual expenses, \$825,912 shows an under prediction of nearly \$250,000. Because of the variability and potential for unexpected costs to arise, the bulk of any surplus funding the Authority may accumulate is generally set aside for landfill maintenance and the potential for additional work to protect human health and the environment.



The total expenses for the Authority have ranged from \$1,060,000 to 1,455,000. The total average expenditure during the five-year period was \$1,193,000 per year.

C. Balances

Expenses have exceeded revenues in three of the last five years; with the annual deficit reaching \$384,000 in 2012 (see following figure). However, the Authority has maintained a positive year-end balance. Over the last three years of the planning period, the Authority's year-end balance has decreased from more than \$1,000,000 in 2014 to \$773,000 in 2014.



The current Plan projected a carry-over or year-end balance for 2014 of approximately \$617,095. The actual balance for the 2016 carry-over was \$772,757.

10. Regional Analysis

The Richland County Regional Solid Waste Management Authority is a member of the Richland Area Chamber of Commerce. The Authority is also a member of the Organization of Solid Waste District in Ohio (OSWDO), and the Authority Director attends the quarterly meetings held with the Ohio EPA as well as their annual meeting.

Additionally the RCRSWMA regularly interacts with other surrounding SWMDs to benchmark and compare program effectiveness. To the extent practical, RCRSWMA has combined efforts with other SWMDs to provide improved services to both communities. An example of a teaming effort is between RCRSWMA and the Ashland County SWMD, the Authority teamed with Ashland SWMD to more effectively recycle glass.

11. Population Analysis

Population projections for this *Plan Update* were developed using documents published by the Ohio Development Services Agency. The Authority does not believe there is any reason to expect significant changes in the Richland County population on an annual basis other than what is predicted by Ohio Development Services Agency. The projections for the planning period developed as a part of Appendix C show annual decreased ranging from 246 to 402 in the County population. Predictions after the planning period show the decline slowing significantly. See Appendix C for further discussion regarding specific documents and assumptions used for the projections.

12. Data Collection Analysis

The RCRSWA collects data each year from entities located both within Richland County and outside the county. Disposal data is reported to the Authority by solid waste facilities located in Ohio that collect and remit the generation fee.

Each year the Authority also conducts a survey to obtain recycling data, composting data, and hauling information as a part of preparing the annual district report to be submitted to Ohio EPA.

In 2016, the Authority mailed survey forms to 39 manufacturing industries, and 116 were sent to commercial/institutional entities.

Follow-up phone calls are made as needed to businesses and municipalities. For example, a follow-up would be made in the case of an incomplete survey which was returned, or information included on the survey which was questionable (i.e., a very large quantity or an amount which was very different from a survey returned from the same respondent in a previous survey).

The response rate for the paper survey in 2016 was approximately 37%

It has become increasingly difficult to get survey responses returned. In 2018 a total of 120 surveys were sent (both industrial and commercial) but only 33 were returned. During the planning period, the Authority intends to push for better survey responses and reach out to businesses that have gone unsurveyed in the past.

The Authority also uses data from the Mid-Ohio recycling center, and Ohio EPA's scrap tire, MRF, and compost facility reports.

13. Education/Outreach Analysis

Education and awareness programs that support residential recycling (addresses Goals #3 and #4 of the State Solid Waste Management Plan):

The Authority's approved plan requires the Authority to provide programs that educate the public about waste reduction, recycling, reuse, and composting. These programs also promote the services and activities provided by the Authority and private sector service providers. The 2007 Plan Update requires that a minimum of four activities be provided from a menu of seven activities. At least one activity must be targeted toward school age children and one to the general public. The Authority works with or through cooperating government agencies like the Mansfield City Litter Prevention and Recycling Program and private entities. In 2016, all seven of the programs and activities included in the Plan were addressed.

In-service training for teachers: Two Educational/in service Training Workshops were held in 2016, One workshop on March 12, 2016 on "Project Wild/Aquatic Wild" and one workshop on April 1, 2016 on "Plastics Recycling"

The Authority maintains a resource library with lesson plans, books, videos, "teacher boxes" and other materials suitable for children at all age levels for the use teachers and youth leaders. The Authority's staff maintains public awareness of this valuable library.

Recycling Brochure, flyers, newspaper supplements and other promotional materials: The Authority maintains a Comprehensive Residential Recycling Resource Guide and a Comprehensive Business Recycling Resource Guide on the Authority's website with hard copies available at the Authority's office. The Comprehensive Recycling Resource Guides are update annually during the month of June.

Contests to encourage schools and students to become directly involved in waste reduction activities: The Authority sponsored the annual Calendar Poster Contest for grades K through 12. The posters were judged by the RCRSWMA Board of Trustees and staff. Twelve winning posters were used in the 2016-2017 school year calendar and was distributed to schools, county agencies and to the public. The twelve winning posters were displayed in the Richland Mall for the public to view in the month of June. The calendar not only showcased the winning contest posters, but provided valuable information about recycling and services provided by RCRSWMA.

Grade appropriate classroom presentations on waste reduction, recycling, composting and "buying recycled": The Authority staff includes an Education Specialist. The Educational Specialist staffs the environmental classroom, which is located in the Authority's office and recycling facility. The classroom is capable of accommodating an entire visiting school classroom for presentations and hands on educational activities. The Authority schedules tours to the local landfill or the local transfer station when requested.

Educational exhibits/displays on waste reduction and recycling for public display and special events: The Authority staffed displays at the Richland County Fair, Mohican Wildlife Weekend, and the Bellville Street Fair and at other community events. The Authority's display features information on waste reduction and reuse and the services provided by the Authority.

The Authority partners with several governmental agencies to promote recycling during Richland County's Earth Stewardship months of April, May and June. Photo contests and Participant Drawing Winners help promote this program. Elected officials and other community leaders are invited to speak or promote the "Kick-Off" event as well as to attend the awards ceremony. Local officials and leaders also judge the Photo Contest.

Public awareness campaigns to reduce litter and illegal dumping: The Authority and the City of Mansfield Recycling & Litter Prevention Program were active participants in the Earth Stewardship Committee, which sponsored projects during a two month celebration. In the City of Mansfield, a utility bill stuffer was used to promote these events. The Authority and the City of Mansfield have Adopt-a-Road and Adopt-a-Street programs. The City coordinates clean-ups in the downtown area and stream clean-ups. The Mansfield News Journal runs articles concerning litter in the special "Go Green" section of the paper.

Public awareness and education through advertising and publicity: The Authority promoted the SCRAP Trailer and provided up-to-date information regarding times and locations in weekly ads in the Mansfield New Journal, WMAN radio, and WMFD TV. In addition, the Authority did special advertising campaigns for "The Great American Clean-up" in March and a limited HHW collection in November. The Mansfield News Journal printed an article concerning litter in a special "Go Green" section of the newspaper in conjunction with Earth Day. In July there was a news story on WMFD TV concerning the SCRAP Trailer. There was a special ad campaign in November for America Recycles Day. Newspaper ads promoted the limited HHW collection, telephone book recycling, and Christmas tree recycling. The Authority Director participated in radio interviews about household hazardous waste and the Electronics and Appliance Recycling Facility

Mansfield Recycling and Litter Prevention Program: The RCRSWMA provided funding to assist the Mansfield City Recycling and Litter Prevention Program. The program provides community awareness, school age education, and coordinates litter collection activities in the City of Mansfield. The program was a partner with the Authority in many of the education activities described above. Mansfield Recycling and Litter Prevention is included in the Authority's Plan as an optional program, which may be funded if sufficient funds are available.

Website: The Authority maintains a website with comprehensive recycling and waste reduction information. The website lists the Authority's programs and operational times and has important links.

Although the Authority was not required to address all of the seven public education topics in each year of the planning period, the Authority believed that all of these activities were important to the overall waste reduction effort in Richland County. Although the Authority has not had the resources to run formal surveys regarding these programs, participation in most of the Authority's activities showed increases during the planning period. The programs were deemed to be valuable and were continued with minor adjustments. Additional information regarding which of these programs will be continued, modified or dropped for the new planning period and the reasoning behind those decisions is included in Appendix I.

Education and awareness programs that support commercial and industrial waste reduction and recycling (addresses Goals #3 and #4 of the State Solid Waste Management Plan):

The Authority's approved plan recognizes that commercial and industrial businesses often receive financial benefits from waste reduction activities including recycling. Therefore, commercial and industrial recycling is first and foremost the responsibility for the individual business. The Authority, however, has an interest in assisting business to reuse waste and offers the following programs:

Identify, list and disseminate up-to-date information regarding recycling opportunities for recyclable waste materials that are commonly generated by business and industry: The Authority staff maintains this information which is posted on the RCRSWMA web site and is used to answer inquiries about how and where to recycle.

Provide assistance to local business in identifying opportunities for grants and/or low interest loans from federal or state sources to fund pollution prevention: In 2016, the Authority assisted and sponsored the Richland County Habitat for Humanity ReStore for an Ohio EPA Community Development Grant.

Provide education and technical assistance which includes guidelines and methodology for performing waste audits and communicate the availability of this assistance to business and industry: The Authority uses the annual industrial waste generation and recycling survey to contact manufacturers. The survey includes a check box for manufacturers to request additional information about the Authority's programs for business and industry. The Authority follows up on requests for information.

Website: The Authority maintains a website with comprehensive recycling and waste reduction information. The website lists the Authority's programs and operational times and has important links.

RCRSWMA is firmly established and very visible in the community. The Authority had received a good response to the industrial waste generation and recycling surveys; however, on recent years that response has begun to decrease. Private waste haulers and scrap recyclers have become more responsive in offering recycling services to commercial businesses. However, the Authority is aware that it is still difficult for small businesses that do not generate large amounts of material to secure recycling collection services at reasonable rates. The Authority has been able to serve some of these businesses on the commercial corrugated collection route and connect others with private recycling services. The Authority continues to get inquiries from businesses and provides information and technical assistance as needed.

14. Recyclable Material Processing Capacity Analysis

Rumpke and Milliron Industries are the largest recyclable material processors in Richland County. Milliron processes the materials they collect at their facility located in Mansfield. Rumpke utilizes their transfer station in Mansfield to collect recyclables and transport them to their processing facility in Columbus.

In 2016, Rumpke was contracted with RCRSWMA to collect the recyclables from the Authority's drop-off locations. Rumpke transported these materials along with the recyclables from the curbside service in Shiloh to their Columbus facility. Rumpke only reports one number to Richland County for recyclables collected.

In 2016, Milliron Industries was an integral part of the Authority's SCRAP Trailer program. RCRSWMA delivered the materials collected to the Milliron facility for processing and then distributed the proceeds to the participating groups.

Quantifying the recycling capacity of the Authority is hard to determine but based on the current activities with these facilities it appears that there is ample capacity for recycling and diversion. That being said RCRSWMA is always looking to encourage sustainable expansion of recycling infrastructure. More research is being planned for upcoming years to better understand the capacity, network, and opportunity for collaboration with the recycling facilities in and around Richland County. These types of conversations and relationships have helped to improve data collection and enhanced management of the Richland County waste stream.

APPENDIX I
ACTIONS, PRIORITIES, AND PROGRAM DESCRIPTIONS



This Appendix contains two major sections with subsections included within each one. Section A includes a comprehensive list of the possible action items (or programs to be implemented) which the Authority or some other entity within Richland County could undertake during the planning period. The list is based upon the conclusions drawn from the program evaluations, and is intended to encompass all possible areas of focus. The list does not necessarily represent the programs or initiatives, which the Authority will commit to implementing during the subsequent planning period.

The second subsection of Section A presents a prioritization of the list referenced above in order to show the most important issues which need to be addressed by the Authority. The steps taken to prioritize the list are discussed in this subsection.

Section B of this Appendix utilizes the results of the analyses described in Section A and presents the programs and/or initiatives which will be implemented by the Authority (or within the Authority) during the subsequent planning period. Both existing programs, which will be continued as well as new programs, are described in Section B.

1. Actions and Priorities

A. List of Possible Actions

The list of possible actions or programs identified through the evaluations presented in Appendix H is shown in the following table. The list is organized according to the program categories included in the Format v4.0 under Appendix I for Section B.

List of Possible Authority Actions or Programs

Program Category	Action or Program Name	Comments
<i>Residential Recycling Infrastructure</i>		
Curbside Recycling Services	Continue existing programs	
	Facilitate implementation of non-subscription curbside collection in villages and townships	
	Facilitate the formation of collection consortiums	
Drop-off Recycling: Publicly- Available Sites	Continue existing program	Expand or contract sites as needed based on performance and other factors
	Minimize contamination and littering	Signage, participant engagement, enforcement
SCRAP Trailer Program	Continue existing program	
<i>Commercial/Institutional Sector Reduction/Recycling</i>		
Drop-off Recycling	Continue existing program	
Education/Awareness	Continue existing program	
<i>Industrial Sector Reduction/Recycling</i>		
Recycling Center Access	Continue existing program	

Program Category	Action or Program Name	Comments
Waste Assessments and Audits	Continue existing program	RCRSWMA will look to increase the Waste Audit Service by focusing on ways to improve the audits. The Authority will follow up with companies to determine if they were able to successfully implement changes and seek feedback to determine how the authority can better serve this population
Restricted/Difficult to Manage Wastes		
Scrap Tires	Explore ways of reducing collection event costs	RCRSWMA will continue to collect tires but will also encourage residents to turn their used tires in to tire dealers. This will help to curb costs to the Authority and still ensure tires are managed appropriately. The Authority will use advertising and signage at the Mid-Ohio Facility to inform residents that tires can be turned in to dealers. The Authority will also foster the necessary relationships with the tire dealers to make this a successful program.
	Encourage residents to turn in old tires at dealers	
HHW	Explore collection options for HHW materials not accepted locally	
Lead Acid Batteries	Continue existing program	
E-Waste	Continue existing program	
	Develop sustainable options for collection of TVs	
	Evaluate cost containment options	RCRSWMA will monitor the cost of implementing the E-waste collection. The Authority will continue searching for economical outlets for E-waste in an effort to recycle as much E-waste as possible for the lowest price.
Appliances	Continue existing program	
Household Batteries	Continue existing program	
Bulk Items	Continue existing program	
Outreach, Education, Awareness, and Technical Assistance		
Covered in Appendix L	See table below	
Funding		
Funding	Continue existing funding sources	
Grants	Promote community development grant to communities and institutions	Promote grant to communities and target specific needs for projects grant covers
	Promote market development grant to businesses	
Economic Incentives		
Technical Assistance	Continue existing program	Focus on residential sector

Program Category	Action or Program Name	Comments
Facilities		
Recyclables Processing	Continue existing program	
Data Collection		
Data Collection	Contact set number of businesses annually	Could be through phone call or face-to-face meeting. Involve chamber of commerce to determine roadblocks or success options

The following table summarizes the potential actions to be considered based on the analysis conducted in Appendix L.

List of Possible Authority Actions or Programs for Education and Outreach

Existing Programs	Potential Actions
Authority Website	Track the number of visits to the website; and post this number on the website and possibly in the annual recycling update.
Authority Website	Minimize the website's "down time" by fixing pages that are under construction as quickly as possible.
Presentations	Promote availability of presentations to non-school groups (civic groups) using a variety of means, such as posting on the Authority website and employing the support of related organizations to promote presentations to members, such as the Chamber of Commerce.
Presentations	Begin tracking the number of individuals reached by each presentation and the name of each school so the Authority can identify the number of students and schools reached each year.
Presentations	Request that educators or group leaders complete a feedback form after a presentation has been completed.
Presentations	If available, track recycling tonnage from schools with recycling programs to estimate if there is a correlation between presentations given and waste diverted.
Adopt-a-Road	Identify groups that have a volunteer requirement or organizations that typically perform community service and target these groups to receive information about the Authority's Adopt-a-Road program.
Adopt-a-Road	Begin tracking additional program statistics, such as the number of bags collected, weight of bags collected, and/or number of hours volunteered.
Educational Displays	Ensure promotional items display the Authority's contact information and that flyers for each target audience are available at the display.
Educational Displays	Begin tracking or estimating the total publications that are distributed at each event each year, the total number of events attended, and/or increased traffic to the Authority's website following an event.
Contests	Inform more school districts about contests to increase participation.
Contests	Add additional measures of effectiveness, such as tracking whether contests change behavior by tracking whether recycling tonnage increases at participating schools and/or track number of locations where contest winners' posters are displayed.
Business/Industrial Sector Waste Audits	Increase number of businesses that participate in waste audits by identifying top generators in Richland County from annual ADR survey results and reach out to businesses directly to inquire about interest in receiving an audit.

Existing Programs	Potential Actions
Business/Industrial Sector Waste Audits	Follow up with entities who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis.
Business/Industrial Sector Waste Audits	Request feedback from establishments that participated in an audit to identify how the Authority can further serve this audience more effectively.

Prioritizing Actions

The Authority reviewed the information presented above, and prioritized the list focusing on the actions which were determined to be most important and those which would require less difficulty in implementing. The step-by-step process which the Authority used to prioritize the list was as follows:

- The ranking consisted of each member of the Authority assigning a value of between 1 and 5 to each initiative with 5 being the highest priority and 1 being the least.
- The priority ranking defined whether the Authority felt an initiative or program would be implemented under the following criteria:
 - Ranking of 1 – No implementation
 - Ranking of 2 – No implementation
 - Ranking of 3 – Possible implementation with direction from Policy Committee
 - Ranking of 4 – Implement
 - Ranking of 5 – Implement
- The Authority then prioritized the results from the above step.
- The list of prioritized possible actions was then presented to the Policy Committee with discussion from authority personnel and the Authority's consultant focusing on the initiatives or programs ranked as a 3 from the criteria above.
- The Policy Committee was then asked to assist the Authority to decide if the initiatives ranked as a 3 should or should not be implemented in the new Plan Update.
- The Policy Committee was also asked to confirm that all initiative ranked as a 4 or 5 should be implemented as recommended by the Authority and that initiatives ranked 1 or 2 should not be implemented as recommended.
- The results of this prioritization process and the programs/initiatives developed or continued are detailed in Chapter V of this Plan Update. The following table summarizes the Authority's and Policy Committee's priorities for implementation of the possible list of actions by program:

Program Category	Action or Program Name	Authority Priority	Policy Committee Decision
<i>Residential Recycling Infrastructure</i>			
Curbside Recycling Services	Continue existing programs	3	Implement
	Facilitate implementation of non-subscription curbside collection in villages and townships	3	Implement for communities that are interested
	Facilitate the formation of collection consortiums	3	Implement for communities that are interested
Drop-off Recycling: Publicly-Available Sites	Continue existing program	5	Implement
	Minimize contamination and littering	3	Not a concern at this time

Program Category	Action or Program Name	Authority Priority	Policy Committee Decision
Drop-off at Schools	Continue existing program	5	Implement
Commercial/Institutional Sector Reduction/Recycling			
Drop-off Recycling	Continue existing program	4	Implement
Education/Awareness	Continue existing program	5	Implement
Industrial Sector Reduction/Recycling			
Recycling Center Access	Continue existing program	4	Implement
Waste Assessments and Audits	Continue existing program	5	Implement
Restricted/Difficult to Manage Wastes			
Scrap Tires	Explore ways of reducing collection event costs	4	Implement
	Encourage residents to turn in old tires at dealers	4	Implement
HHW	Explore collection options for HHW materials not accepted locally	4	Implement
Lead Acid Batteries	Continue existing program	5	Implement
E-Waste	Continue existing program	5	Implement
	Develop sustainable options for collection of TVs	2	Do Not Implement
	Evaluate cost containment options	4	Implement
Appliances	Continue existing program	5	Implement
Household Batteries	Continue existing program	3	Implement
Bulk Items	Continue existing program	3	Implement
Outreach, Education, Awareness, and Technical Assistance			
Covered in Appendix L	See table below		
Funding			
Funding	Continue existing funding sources	5	Implement
Grants	Promote community development grant to communities and institutions	4	Implement
	Promote market development grant to businesses	4	Implement
Economic Incentives			
Technical Assistance	Continue existing program	4	Implement
Facilities			
Recyclables Processing	Continue existing program	4	Implement
Data Collection			
Data Collection	Contact set number of businesses annually	4	Implement

The following table summarizes the Authority's and Policy Committee's priorities for implementation of the possible list of actions by program for education and outreach:

Existing Programs	Potential Actions	Authority Priority	Policy Committee Decision
Authority Website	Track the number of visits to the website.	5	Implement
Authority Website	Minimize the website's "down time" by fixing pages that are under construction as quickly as possible.	3	When necessary
Presentations	Promote availability of presentations to non-school groups (civic groups) using a variety of means, such as posting on the Authority website and employing the support of related organizations to promote presentations to members, such as the Chamber of Commerce.	4	Implement
Presentations	Begin tracking the number of individuals reached by each presentation and the name of each school so the Authority can identify the number of students and schools reached each year.	4	Implement
Presentations	Request that educators or group leaders complete a feedback form after a presentation has been completed.	4	Implement
Presentations	If available, track recycling tonnage from schools with recycling programs to estimate if there is a correlation between presentations given and waste diverted.	4	Implement
Adopt-a-Road	Identify groups that have a volunteer requirement or organizations that typically perform community service and target these groups to receive information about the Authority's Adopt-a-Road program.	3	Implement
Adopt-a-Road	Begin tracking additional program statistics, such as the number of bags collected, weight of bags collected, and/or number of hours volunteered.	3	Implement
Educational Displays	Ensure promotional items display the Authority's contact information and that flyers for each target audience are available at the display.	5	Implement
Educational Displays	Begin tracking or estimating the total publications that are distributed at each event each year, the total number of events attended, and/or increased traffic to the Authority's website following an event.	5	Implement
Contests	Inform school districts about contests to increase participation.	3	Implement
Contests	Add additional measures of effectiveness, such as tracking whether contests change behavior by tracking whether recycling tonnage increases at participating schools and/or track number of locations where contest winners' posters are displayed.	4	Implement

Existing Programs	Potential Actions	Authority Priority	Policy Committee Decision
Business/Industrial Sector Waste Audits	Increase number of businesses that participate in waste audits by identifying top generators in Richland County from annual ADR survey results and reach out to businesses directly to inquire about interest in receiving an audit.	4	Implement
Business/Industrial Sector Waste Audits	Follow up with entities who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis.	4	Implement
Business/Industrial Sector Waste Audits	Request feedback from establishments that participated in an audit to identify how the Authority can further serve this audience more effectively.	4	Implement

B. Programs

This section utilizes the results of Section A above and lists:

- Each existing program that the Authority will continue.
- Each new program that the Authority will implement during the planning period.

Descriptions for continuing existing programs are referenced in Appendices H and L, while new programs or changes to existing programs are fully described in the table below.

Program	Description		OEPA ID	Start Date	End Date	Goal(s)
Residential Recycling Infrastructure						
Curbside Recycling Services	Non-Subscription Curbside Recycling	Village of Shiloh	8907	Ongoing	Ongoing	1, 2,7
	Subscription Curbside Recycling	Mansfield	8631	Ongoing	Ongoing	1,2,7
		Lexington	8632			
		Ontario	8633			
	Facilitation Technical Assistance	Encourage implementation of non-subscription curbside collection in villages and townships	N/A	As communities show interest		1,2,7
	Consortium Technical Assistance	Encourage the formation of collection consortiums as appropriate	N/A	As communities show interest		3,4
Drop-off Recycling	Full Time Urban	Mid-Ohio Facility operated by RCRSWMA	8628	Ongoing	Ongoing	1,2,7
		Jackson Township Garage	6528	Ongoing	Ongoing	1,2,7

Program	Description		OEPA ID	Start Date	End Date	Goal(s)
		Jefferson Twp. & Washington Twp.	6527	Ongoing	Ongoing	1,2,7
		Lexington Village Maintenance Garage	6529	Ongoing	Ongoing	1,2,7
		Mifflin Township Fire Department	6530	Ongoing	Ongoing	1,2,7
		Sharon Township Garage	6531	Ongoing	Ongoing	1,2,7
		Milliron Industries	6533	Ongoing	Ongoing	1,2,7
		Richland County Recycling & Transfer Facility	6534	Ongoing	Ongoing	1,2,7
		Springfield Township Road Department	6532	Ongoing	Ongoing	1,2,7
	Part-Time Urban	Auburn Elementary SCRAP Trailer	6541	Ongoing	Ongoing	1,2,7
		Brinkerhoff Elementary SCRAP Trailer	6542	Ongoing	Ongoing	1,2,7
		Discovery School SCRAP Trailer	6543	Ongoing	Ongoing	1,2,7
		Dowds Elementary SCRAP Trailer	6545	Ongoing	Ongoing	1,2,7
		Early Childhood Center SCRAP Trailer	6559	Ongoing	Ongoing	1,2,7
		Eastern-Lexington SCRAP Trailer	8630	Ongoing	Ongoing	1,2,7
		Eastview Elementary SCRAP Trailer	6546	Ongoing	Ongoing	1,2,7
		Madison Jr. High School SCRAP Trailer	7115	Ongoing	Ongoing	1,2,7
		Madison South Elementary SCRAP Trailer	6548	Ongoing	Ongoing	1,2,7
		Malabar Middle School SCRAP Trailer	8634	Ongoing	Ongoing	1,2,7
		Mansfield Christian School SCRAP Trailer	6550	Ongoing	Ongoing	1,2,7
		Mifflin School SCRAP Trailer	6549	Ongoing	Ongoing	1,2,7
		Ontario United Methodist Church SCRAP Trailer	8955	Ongoing	Ongoing	1,2,7
		Newman Elementary SCRAP Trailer	6551	Ongoing	Ongoing	1,2,7

Program	Description		OEPA ID	Start Date	End Date	Goal(s)
		Foundations Academy of Mansfield SCRAP Trailer	6560	Ongoing	Ongoing	1,2,7
		Prospect Elementary SCRAP Trailer	6552	Ongoing	Ongoing	1,2,7
		Shelby Central School SCRAP Trailer	6544	Ongoing	Ongoing	1,2,7
		Sherman Elementary SCRAP Trailer	6556	Ongoing	Ongoing	1,2,7
		St. Peters Elementary SCRAP Trailer	6555	Ongoing	Ongoing	1,2,7
		Western Elementary	8635	Ongoing	Ongoing	1,2,7
		Woodland Elementary	6558	Ongoing	Ongoing	1,2,7
	Full-Time Rural	Bloomington Twp.	6536	Ongoing	Ongoing	1,2,7
		Weller Township at Crestview High School	8627	Ongoing	Ongoing	1,2,7
		Monroe Twp. and Lucas Village	6538	Ongoing	Ongoing	1,2,7
		Plymouth Twp.	6539	Ongoing	Ongoing	1,2,7
		Plymouth High School	6535	Ongoing	Ongoing	1,2,7
		Weller Twp.	6540	Ongoing	Ongoing	1,2,7
		Worthington Township in Butler Village	6537	Ongoing	Ongoing	1,2,7
	Part-Time Rural	None	None	None	None	None
	Add, remove or adjust sites as needed		N/A	Ongoing	Ongoing	1,2,7
	Minimize contamination and littering through additional education and signage		N/A	Ongoing	Ongoing	N/A
Commercial/Institutional Sector Reduction and Recycling Programs						
RCRSWMA government and institution collection route. *Although the Authority plans to continue this service, it is not a required part of this Plan. May substitute drop-off facilities for commercial paper and OCC conjunction with residential drop-offs in convenient locations for commercial recyclers.			8961	Ongoing	Ongoing	1,2,7
Mid-Ohio Facility operated by RCRSWMA			8628	Ongoing	Ongoing	1,2,7
Add, remove or adjust sites as needed			N/A	Ongoing	Ongoing	2,7
Industrial Sector Reduction and Recycling Programs						
Mid-Ohio Facility operated by RCRSWMA	Commercial and industrial sector entities will continue to have access to the Recycling Center.		N/A	Ongoing	Ongoing	3,4

Program	Description	OEPA ID	Start Date	End Date	Goal(s)
Waste Audits and Assessments	Continue providing business/ industrial sector waste audits and assessments	N/A	Ongoing	Ongoing	3,4
	Follow up with entities who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis.	NA	2020	2034	3,4
	Request feedback from establishments that participated in an audit to identify how the Authority can further serve this audience more effectively.	NA	2020	2034	3,4
	Increase number of businesses that participate in waste audits by identifying top generators in Richland County from annual ADR survey results and reach out to businesses directly to inquire about interest in receiving an audit.	NA	2020	2034	3,4
Restricted/Difficult to Manage Wastes					
Household Hazardous Waste	Education program for HHW, electronics, and lead-acid batteries		Ongoing	Ongoing	3,4
	Limited HHW and “difficult to manage waste” events. *Optional events to be held to meet identified needs if funds are available.	6589	Ongoing	Ongoing	2,5,7
	Explore collection options for HHW materials not accepted locally	NA	2020	2034	2,5,7
Scrap Tires	Year-round tire collection at RCRSWMA Mid-Ohio Recycling facility	6586	Ongoing	Ongoing	2,5,7
	Explore ways of reducing collection event costs	N/A	Ongoing	Ongoing	
	Encourage residents to turn in old tires at dealers	N/A	2020	2034	3,4
Electronics	RCRSWMA Mid-Ohio Recycling Facility Year-Around Electronics, Appliance and Tire Collection *Anticipated service of RCRSWMA but may be discontinued if private sector alternatives are available and if RCRSWMA funds are available.	6569	Ongoing	Ongoing	5,7
	Evaluate cost containment options	N/A	2020	2034	5,7
Lead-Acid Batteries	Lead-acid battery collection at RCRSWMA Mid-Ohio Recycling Facility	6594	Ongoing	Ongoing	2,5,7
Appliances	Appliance collection at RCRSWMA Mid-Ohio Recycling Facility	6569	Ongoing	Ongoing	2,5,7
Yard Waste	RCRSWMA Compost Facility	6597	Ongoing	Ongoing	2,5

Program	Description	OEPA ID	Start Date	End Date	Goal(s)
	Mansfield compost facility	8962	Ongoing	Ongoing	2,5
	Field spreading of leaves by cities, villages and townships	8963	Ongoing	Ongoing	2,5
	Composting and “don’t bag it” education provided by RCRSWMA staff and programs	6596	Ongoing	Ongoing	5
Outreach, Education, Awareness, and Technical Assistance					
Web Page	Authority website	8965	Ongoing	Ongoing	3,4
	Track the number of visits to the website.	N/A	2020	2034	3,4
	Minimize the website’s “down time” by fixing pages that are under construction as quickly as possible.	N/A	Website experiences little “down time” repairs made as necessary		3,4
	Include the Recycling Guide online as a downloadable, printable PDF.	N/A	Ongoing	Ongoing	3,4
Presentations	Environmental education coordinator	8969 8970	Ongoing	Ongoing	3,4
	Promote availability of presentations to non-school groups (civic groups) using a variety of means, such as posting on the Authority website and employing the support of related organizations to promote presentations to members, such as the Chamber of Commerce.	N/A	2020	2034	3,4
	Begin tracking the number of individuals reached by each presentation and the name of each school so the Authority can identify the number of students and schools reached each year.	N/A	2020	2034	3,4
	Request that educators or group leaders complete a feedback form after a presentation has been completed.	N/A	2020	2034	3,4
	In-service training for teachers and youth leaders	8972	Ongoing	Ongoing	3,4
	Resource library for teachers and youth leaders	8973	Ongoing	Ongoing	3,4
	Grade appropriate classroom presentations in environmental classroom or in schools	8974	Ongoing	Ongoing	3,4
Adopt-a-Road program	Continue to operate Adopt-a-Road program	6605	Ongoing	Ongoing	3,4
	Identify groups that have a volunteer requirement or organizations that typically perform community service and target these groups to receive information about the Authority’s Adopt- a-Road program.	N/A	2020	2034	3,4

Program	Description	OEPA ID	Start Date	End Date	Goal(s)
	Begin tracking additional program statistics, such as the number of bags collected, weight of bags collected, and/or number of hours volunteered.	N/A	2020	2034	3,4
Educational Displays	Continue hosting education displays at fairgrounds and community events	187	1995	Ongoing	3,4
	Ensure promotional items display the Authority's contact information and that flyers for each target audience are available at the display.	N/A	Ongoing	Ongoing	3,4
	Comprehensive resource guide	8967 8968	Ongoing	Ongoing	3,4,5
	Marketing plan updated annually that includes at a minimum a) Materials to be used for public information and education, b) educational displays and exhibits, c) advertising and public service announcements d) special promotional events and activities.	8971	Ongoing	Ongoing	3,4
	Annually provide one public outreach activity that engages local elected officials and other community leaders designed to increase recycling opportunities for communities	8976	Ongoing	Ongoing	3,4
Contests	Annual poster contest	8975	Ongoing	Ongoing	3,4
	Inform school districts about contests to increase participation.	N/A	2020	2034	3,4
Tours	The Authority will continue to host tours at solid waste and recycling facilities.	N/A	Ongoing	Ongoing	3,4
Funding/Grants					
Funding	Continue existing funding sources	N/A	Ongoing	Ongoing	
	Health Department funding	6602	Ongoing	Ongoing	
Grants	Promote community development grant to communities and institutions	N/A	Ongoing	2032	Varies
	Promote market development grant to businesses	6584	Ongoing	Ongoing	3,4
Economic Incentives					
Technical Assistance	Guidelines and methodology for performing waste audits	6582	Ongoing	Ongoing	3,4
	Communicate recycling opportunities, goals and marketing information to industrial, commercial and residential sectors	8978 6585	Ongoing	Ongoing	3,4

Program	Description		OEPA ID	Start Date	End Date	Goal(s)
Facilities						
Landfill	Closed Richland County Landfill		6601	Ongoing	Ongoing	
Data Collection						
Data Reporting Program	Annual Surveying	Authority sends surveys to commercial and industrial businesses annually.	8959 8960	Ongoing	Ongoing	9
	Survey Follow-Up	Contact set number of businesses annually	N/A	2020	2034	9

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



This Appendix presents the Authority's assessment of the opportunity to recycle within Richland County in association with the requirements of Goal 1.

1. Residential Sector Opportunity to Recycle

The following table presents the curbside recycling opportunities in the reference year and year 5 and 10 of the planning period, as well as the population credit received for each location.

Table J-1a Opportunity to Recycle: Curbside Programs

ID #	Richland County	2016		2024		2029	
	Name of Community (City, Village, Township)	Pop	Credit	Pop	Credit	Pop	Credit
Non-subscription curbside							
NCS1	Shiloh Village	629	629	604	604	589	589
Subscription curbside							
SC1	Mansfield	46,671	11,668	44,837	11,209	43,727	10,932
SC2	Lexington	4,687	1,174	4,539	1,135	4,449	1,112
SC3	Ontario	6,081	1,520	5,889	1,472	5,772	1,443

Source(s) of Information: Ohio Development Services Agency, 2017 Population Estimates by County, City, Village, and Township, May 2018

All curbside programs operating during the reference year are expected to continue. The following figure presents the estimated population with access to curbside recycling programs.

Year	Population Data	Richland County
2016 Reference Year	Total County	122,030
	Credit	14,991
	% Access	12%
2024 Year 5	Total County	119,455
	Credit	14,420
	% Access	12%
2029 Year 10	Total County	117,813
	Credit	14,076
	% Access	12%

The following table presents the full time urban drop-off recycling opportunities in the reference year and year 5 and 10 of the planning period, as well as the population credit received for each location.

Table J-1b1 Opportunity to Recycle: Drop-off Programs (2016-2034)

ID #	Richland County	2016		2024		2029	
	Name of Community (City, Village, Township)	Pop	Credit	Pop	Credit	Pop	Credit
Full-time, urban drop-off							
FTU1	RCSWMA Recycling Drop-off Facility Mansfield, Ohio	46,671	5,000	44,837	5,000	43,727	5,000
FTU2	Milliron Industries Mansfield, Ohio	46,671	5,000	43,727	5,000	43,727	5,000
FTU3	Mifflin Township Fire Department Mifflin Township	6,050	5,000	44,837	5,000	43,727	5,000
FTU4	Lexington Village Maintenance Garage Lexington, Ohio	6,808	5,000	4,539	5,000	4,449	5,000
FTU5	Springfield Township Road Department Springfield Township	10,431	5,000	43,727	5,000	43,727	5,000
FTU6	Sharon Township Garage Sharon Township	8,838	5,000	8,682	5,000	8,467	5,000
Full-time, rural drop-off							
FTR1	Jackson Township Garage Jackson Township	3,444	2,500	8,682	2,500	8,467	2,500
FTR2	Bellville Village Garage Bellville, Ohio	1,873	2,500	1,814	2,500	1,778	2,500

Source(s) of Information: Ohio Development Services Agency, 2017 Population Estimates by County, City, Village, and Township, May 2018

ID #	Richland County	2016		2024		2029	
	Name of Community (City, Village, Township)	Pop	Credit	Pop	Credit	Pop	Credit
Part-time, urban drop-off							
PTU1	Auburn Elementary SCRAP Trailer Shelby, Ohio	9,037	2,500	8,682	2,500	8,467	2,500
PTU2	Brinkerhoff Elementary SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU3	Discovery School SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
4PTU4	Dowds Elementary SCRAP Trailer Shelby, Ohio	9,037	2,500	8,682	2,500	8,467	2,500
PTU5	Early Childhood Center SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU6	Eastview Elementary SCRAP Trailer Madison Township	10,815	2,500	43,727	2,500	43,727	2,500
PTU7	Madison Jr. High School SCRAP Trailer Madison Township	10,815	2,500	43,727	2,500	43,727	2,500

ID #	Richland County	2016		2024		2029	
	Name of Community (City, Village, Township)	Pop	Credit	Pop	Credit	Pop	Credit
PTU8	Madison South Elementary SCRAP Trailer Madison Township	10,815	2,500	43,727	2,500	43,727	2,500
PTU9	Malabar Middle School SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU10	Mansfield Christian School SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU11	Mifflin School SCRAP Trailer Mifflin Township	6,053	2,500	43,727	2,500	43,727	2,500
PTU12	Ontario United Methodist SCRAP Trailer Ontario, Ohio	6,081	2,500	5,889	2,500	5,772	2,500
PTU13	Newman Elementary SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU14	Foundations Academy SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU15	Prospect Elementary SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU16	Shelby Central School SCRAP Trailer Shelby, Ohio	9,037	2,500	8,682	2,500	8,467	2,500
PTU17	Sherman Elementary SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU18	St. Peters Elementary SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU19	Woodland Elementary SCRAP Trailer Mansfield, Ohio	46,671	2,500	43,727	2,500	43,727	2,500
PTU20	Eastern-Lexington SCRAP Trailer Lexington, Ohio	6,815	2,500	4,539	2,500	4,449	2,500
PTU21	Western Elementary SCRAP Trailer Lexington, Ohio	6,815	-	4,539	-	4,449	-
Full-time, rural drop-off							
FTR1	Bloomington Township Garage Bloomington Township	1,167	2,500	1,130	2,500	1,108	2,500
FTR2	Crestview High School Weller Township	1,733	2,500	1,678	2,500	1,645	2,500
FTR3	Monroe Township Garage Monroe Township	2,640	2,500	2,560	2,500	2,509	2,500
FTR4	Plymouth Township Garage Plymouth Township	1,083	2,500	1,959	2,500	1,920	2,500
FTR5	Plymouth High School Plymouth Township	1,814	2,500	896	2,500	894	2,500

ID #	Richland County	2016		2024		2029	
	Name of Community (City, Village, Township)	Pop	Credit	Pop	Credit	Pop	Credit
FTR6	Weller Township Garage Weller Township	1,733	-	1,678	-	1,645	-
FTR7	Worthington Township Garage Worthington Township	2,786	2,500	2,698	2,500	2,645	2,500

Source(s) of Information: Ohio Development Services Agency, 2017 Population Estimates by County, City, Village, and Township, May 2018

Some sites in the table are listed with a population credit of zero. These sites are located in communities with multiple drop-offs. Communities with multiple drop-offs cannot claim credit for more than the total population of the political subdivision. Therefore, more than one drop-off cannot be counted toward achieving Goal 1 if the access credit exceeds the total population of the political subdivision. The following figure presents the estimated population with access to drop off recycling programs.

Year	Population Data	Richland County
2016 Reference Year	Total County	122,030
	Credit	100,000
	% Access	82%
2024 Year 5	Total County	119,455
	Credit	100,000
	% Access	84%
2029 Year 10	Total County	117,813
	Credit	100,000
	% Access	85%

The following figure presents the estimated population with access to curbside and drop-off recycling programs in the reference year. During 2016, 94% of residents had access to recycling programs.

Year	Population Data	Richland County
2016	Total County	122,030
	Credit for	
	Curbside	14,991
	Drop off	100,000
	Total	114,991
	% Access	94%

Tables J-2 and J-3 are not applicable to the Authority and have been omitted.

2. Commercial Sector Opportunity to Recycle

Table J-4 Infrastructure Demonstration for the Commercial Sector

Service Provider	Type of Recycling Service Provided	Al	Cc	St	Mp	Pl	Wood
Richland County							
Aluminum and Metal Exchange (Mansfield)	Scrap yard	x	x	x	x		
Metal Conversions, Ltd (Mansfield)	Scrap yard, Broker	x		x			
Milliron Industries (Mansfield)	MRF, Drop-off, Buy-back, Scrap yard, Broker	x	x	x	x		
Omni Source (Mansfield)	Scrap yard, Broker	x		x			
Kaple Lumber Company (Shiloh)	Pallet Reclaimer						x
Shred-It (Gahanna)	Mobile document destruction				x		
R & R Pallet (Ashland)	Pallet Reclaimer						x
RCRSWMA Mid-Ohio Recycling Facility (Mansfield)	Drop-off	x	x	x	x	x	
Rumpke Recycling (Mansfield)	Drop-off, commercial collection	x	x	x	x	x	x
SHARP-SHRED, LLC (Marion)	Mobile document destruction				x		

Al = Aluminum, Cc = corrugated cardboard, St = steel cans, Mp = mixed paper, Pl = plastics, W = wooden pallets and packaging

Table J-4, "Infrastructure Demonstration for the Commercial Sector," presents drop-offs, buy backs, scrap yards, haulers, and pallet refurbishers that provide recycling opportunities to the commercial/institutional sector. The total number of recycling opportunities in the Authority's jurisdiction for at least five materials designated for the commercial sector to demonstrate compliance with Goal 1 are as follows:

- Aluminum: 6
- Cardboard: 4
- Steel cans: 6
- Mixed paper: 6
- Plastics: 2
- Wood pallets and packaging: 3

3. Demonstration of Meeting Other Requirements for Achieving Goal 1

A. Residential/Commercial Waste Reduction and Recycling Rate

In the 2016 reference year, the Authority's residential/commercial sector achieved a 32% recycling rate, which exceeds the 25% requirement to achieve Goal 1. The waste recycling rate for the residential/commercial sector is projected to exceed the 25% requirement throughout the planning period based on anticipated volumes of recycling and disposal.

B. Industrial Waste Reduction and Recycling Rate

In the 2016 reference year, the Richland County industrial sector achieved a 56% waste reduction and recycling rate, which was less than the 66% requirement to achieve Goal 1. The waste reduction and recycling rate increased to 63% in 2017. The projections through the planning period currently show the industrial reduction and recycling rate increasing to 64% by the end of the planning period. The Authority believes that the intended effort to collect additional survey responses will boost the industrial reduction and recycling rate higher than the current projections, and should exceed the 66% requirement.

C. Encouraging Participation

The Authority will encourage residents and commercial generators to participate in available recycling infrastructure using a variety of outreach, education, and incentive programs, including the following:

- Educational Displays at Community Events: The Authority disseminates information on the programs and opportunities to recycle throughout Richland County.
- Website: The Authority regularly updates its website. The Authority will implement new initiatives to improve the website, such as improving the branding and presentation, and developing user metrics to evaluate the use of the site and make informed decisions regarding its future improvements.
- Environmental Education Coordinator: The Authority employs a dedicated Environmental Education Coordinator to perform presentations to students, manage school recycling programs, activities, and contests.
- Facility Tours: The Authority hosts tours of the recycling center, compost facility and landfill. Tours actively engage participants and encourage recycling and waste reduction.

Appendices I and L include detailed information about each program.

APPENDIX K
WATER REDUCTION AND RECYCLING RATES AND DEMONSTRATION OF
ACHIEVING GOAL 2



The RCRSWMA has chosen to demonstrate compliance with Goal 1 of the *State Plan*. In accordance with V4.0, the Authority is providing this comparison of the reference year (2016) recycling rates to the projected rate for 2016 in the current plan.

In the current plan, the residential/commercial recycling rate for 2016 was projected to be 17%. The actual rate as described in the reference year calculations was 32%.

Year	Population	Recycled	Disposed	Total Generated	Waste Reduction & Recycling Rate (%)	Per Capita Waste Reduction & Recycling Rate (ppd)
2016	122,030	40,232	86,683	126,915	31.70%	1.81
2017	121,928	40,727	86,285	127,012	32.07%	1.83
2018	121,639	41,260	85,888	127,148	32.45%	1.86
2019	121,351	41,831	85,494	127,325	32.85%	1.89
2020	121,063	42,444	85,101	127,545	33.28%	1.92
2021	120,661	43,099	84,710	127,809	33.72%	1.96
2022	120,259	43,799	84,321	128,120	34.19%	2.00
2023	119,857	44,547	83,933	128,480	34.67%	2.04
2024	119,455	45,344	83,547	128,891	35.18%	2.08
2025	119,053	46,193	83,164	129,357	35.71%	2.13
2026	118,743	47,097	82,781	129,878	36.26%	2.17
2027	118,433	48,059	82,401	130,460	36.84%	2.22
2028	118,123	49,081	82,022	131,103	37.44%	2.28
2029	117,813	50,167	81,646	131,813	38.06%	2.33
2030	117,503	51,321	81,270	132,591	38.71%	2.39
2031	117,257	52,545	80,897	133,442	39.38%	2.46
2032	117,011	53,845	80,525	134,370	40.07%	2.52
2033	116,765	55,224	80,155	135,379	40.79%	2.59
2034	116,519	56,686	79,787	136,473	41.54%	2.67

The programs implemented by the Authority have been successful to date at achieving the necessary 25% recycling rate.

In the current plan the waste reduction and recycling rate for the industrial sector for 2016 was projected to be 88%. The actual rate as described in the reference year calculations was 56%.

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)
2016	110,444	86,891	197,335	55.97%
2017	176,971	101,790	278,761	63.48%
2018	186,038	106,496	292,534	63.60%
2019	195,570	111,419	306,989	63.71%
2020	205,590	116,569	322,160	63.82%
2021	216,124	121,958	338,082	63.93%
2022	227,197	127,596	354,793	64.04%
2023	238,838	133,495	372,332	64.15%
2024	251,075	139,666	390,741	64.26%
2025	263,939	146,123	410,061	64.37%
2026	263,939	146,123	410,061	64.37%
2027	263,939	146,123	410,061	64.37%
2028	263,939	146,123	410,061	64.37%
2029	263,939	146,123	410,061	64.37%
2030	263,939	146,123	410,061	64.37%
2031	263,939	146,123	410,061	64.37%
2032	263,939	146,123	410,061	64.37%
2033	263,939	146,123	410,061	64.37%
2034	263,939	146,123	410,061	64.37%

At the time of the last plan update, recovery from the 2008 recession was underway. There were increases in manufacturing and new business coming to Richland County. As the recovery leveled off, there were several years of low recycling volumes reported. The Authority believes that the recycling rates during those years were higher than reported, but due to poor responses from the Authority's survey, the numbers appear to be low. Throughout this coming planning period, the RCRSWA intends to focus more on survey response and communicating the importance of participation so that accurate data can be reported.

Table K-3 shows the total WRRs projected throughout the planning period. The overall Waste Reduction and Recycling rate is projected to continue to increase from 56 at the reference year to 65% by the end of the planning period.

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)
2016	110,444	86,891	197,335	55.97%
2017	176,971	101,790	278,761	63.48%
2018	186,038	106,496	292,534	63.60%
2019	195,570	111,419	306,989	63.71%
2020	205,590	116,569	322,160	63.82%
2021	216,124	121,958	338,082	63.93%
2022	227,197	127,596	354,793	64.04%
2023	238,838	133,495	372,332	64.15%
2024	251,075	139,666	390,741	64.26%
2025	263,939	146,123	410,061	64.37%
2026	277,462	152,878	430,339	64.48%
2027	291,678	159,945	451,623	64.58%
2028	306,622	167,339	473,961	64.69%
2029	322,332	175,075	497,407	64.80%
2030	338,847	183,168	522,015	64.91%
2031	356,208	191,636	547,844	65.02%
2032	374,459	200,495	574,953	65.13%
2033	393,644	209,763	603,408	65.24%
2034	413,813	219,460	633,273	65.35%

APPENDIX L
MINIMUM REQUIRED EDUCATION PROGRAMS: OUTREACH AND MARKETING PLAN
AND GENERAL EDUCATION REQUIREMENTS



This Appendix discusses State Plan Goals 3 and 4 and the Authority's strategies to satisfy the requirements of meeting each goal. The following is a summary of each goal, as presented in Ohio EPA's Plan Format v4.0:

Goal 3: Waste Reduction and Recycling Rates

The SWMD shall provide the following required programs:

- A website
- A comprehensive resource List
- An inventory of available infrastructure
- A speaker or presenter

Goal 4: Outreach and Education - Outreach Plan and General Requirements

The SWMD shall provide education, outreach, marketing, and technical assistance regarding reduction, recycling, composting, reuse, and other alternative waste management methods to target audiences using best practices.

1. Minimum Required Education Programs

In accordance with Goal 3 of the *2009 State Plan*, the Authority is required to provide four minimum education programs including (1) a website, (2) a comprehensive resource List, (3) an inventory of available infrastructure, and (4) a speaker or presenter.

Web Page

Description

The Authority's comprehensive website is updated regularly. The website is available at www.richlandrecycles.com/

The main page provides the Authority's contact information, recent Annual District Reports (ADRs), and newsletters. It also provides links to a recycling guide, a page on household hazardous waste, the Authority's calendar of events, and an education page.

Website Advertisement Strategy

The RCRSWMA advertises the availability of its website using a variety of mechanisms:

- The web address is included in the Authority staff's e-mail signatures.
- The Authority's partners and supporters include links to the Authority's website on their websites and social media posts.
- The Authority's website is displayed on many promotional items that are distributed at local special events and community activities.

Website Updating Strategy

Updates are typically completed on an as-needed basis. Examples of routine updates include adding upcoming events to the calendar and adding new ADRs when completed.

Person(s) Responsible for Maintaining Website

The Authority's coordinator is responsible for maintaining the website.

Infrastructure Inventory

Description

The Authority's Solid Waste Management Plan includes an infrastructure inventory. Moving forward, the Authority may create a stand-alone document containing Richland County's solid waste and recycling infrastructure inventory that can be posted on the website. The infrastructure inventory will consist of at least the following:

- Solid waste management and disposal infrastructure, including:
 - Landfill facilities
 - Transfer facilities
 - Scrap tire facilities
 - Incinerators/waste-to-energy facilities
- Waste reduction and recycling infrastructure, including:
 - Curbside recycling services
 - PAYT trash collection services
 - Drop-off recycling locations (both privately and publicly owned/operated)
 - Composting facilities
 - Yard waste collection programs
 - Recycling centers
 - Material recovery facilities and other facilities for processing recyclable materials

A portion of the information to be included in the inventory is currently included in the Recycler's List, such as details about curbside programs, drop-off recycling sites, yard waste composting, and recycling centers. Appendix B of this *Plan Update* also includes much of the information that will be included in the infrastructure inventory.

Access to Inventory

The inventory will be made available on the Authority's website. Printed copies of the inventory will not be distributed at public events or other establishments since the majority of information which is relevant to residents and businesses is already included in the Recycler's List.

Inventory Updating Strategy

The infrastructure inventory will be updated annually. Most information to be included in the inventory has historically (and is currently) collected during the Annual District Report preparation process. Information in the inventory such as the operational status of facilities and their addresses and contact information will be revised as necessary.

Resource Guide

Description

Each year and as changes occur, the Authority updates the Recycling Guide, which is a comprehensive List identifying recycling opportunities for residents and businesses. The Guide includes:

- Locations that accept glass recycling, yard waste recycling, and unwanted/unused medications.
- Contact information for questions regarding recycling.
- Acceptable materials list and how to prepare recyclables in Richland County.
- List of permanent drop-offs by community and schedule of regularly held recycling drives.
- Richland County Mid-Ohio Recycling Center location and hours of operation.

- Where to recycle special materials or items such as batteries, scrap metal, household appliances, tires, electronics, and televisions
- Information about business and industry recycling opportunities and programs.

Access to Recycling Guide

The Recycling Guide can be accessed electronically on the Authority's website.

Moving forward, the Authority may make printed copies available for distribution at community events and Authority presentations.

Recycling Guide Updating Strategy

Authority staff review the Recycling Guide annually to confirm whether existing information/listings need updated and add new recycling resources for residents and businesses when they are identified.

All identified recyclers on the list are contacted annually to confirm continued participation and to update information.

To solicit the public's assistance with keeping the Guide as current as possible, future Guides will include a message such as "If you know about a recycling opportunity that is not listed in this guide, or encounter any errors in the listings, please contact the Richland County Regional Solid Waste Management Authority."

Speaker/Presenter

Description

During the reference year, the Authority employed an Education Coordinator to perform education and outreach activities.

Environmental Education Specialist's Duties

The Authority's Education Coordinator conducts in-school and civic group presentations, organizes and runs recycling contests for students, plans and manages recycling facility tours, and participates in special community events.

2. Outreach and Marketing Plan

A. Evaluation of Existing Programs and Outstanding Needs

The following table presents the Authority's existing education and outreach programs and each program's target audience.

During the reference year, the Authority had programs that addressed the five target audiences. The Authority's infrastructure is mature, so the existing programs are appropriate given the available recycling opportunities.

Existing Programs	Target Audience				
	Residents	Schools	Industries	Institutions & Commercial Businesses	Communities & Elected Officials
Website	✓	✓	✓	✓	✓
Presentations	✓	✓	✓	✓	✓
Contests	✓	✓			✓
Adopt-a Road	✓	✓		✓	
Educational Displays	✓	✓	✓	✓	
Business/Industrial Sector Waste Audits		✓	✓	✓	
Total Program per Group	5	6	4	5	3

Existing Program Evaluation

There is a common misconception among some citizens of Richland County that the RCRSWMA is a trash, litter or sewage related business. During this planning period, the Authority will use our outreach programs to stress that the Richland County Regional Solid Waste Management Authority is an organization that promotes recycling, and waste reduction. We will teach the “how-to” of recycling as we promote our services and programs.

Richland County Regional Solid Waste Management Authority website

The Authority’s website provides education and awareness about recycling, programs, and infrastructure available locally for recycling and reducing waste for many target audiences, including residents, schools, industries, and institutions/commercial businesses. The website contains information about participating in programs, so the focus of the website is not just on increasing awareness; materials are geared to changing behavior.

- **Strengths:** Providing resources such as the Recycling Guide through the website is a cost-effective method of providing awareness education to a large quantity of individuals. It also allows the Authority to update and add new information on an as-needed basis.
- **Challenges:** Individuals who are not aware of the Authority’s website or do not have internet access do not benefit from it. Individuals who do not have internet access may also be part of socioeconomic groups that are traditionally underserved by programming such as those provided by the Authority.
- **Measuring Effectiveness:** Historically, the Authority has not measured the results or effectiveness of the website. Potential methods of measurable success may include obtaining the total number of visits to the website annually, and/or adding a survey on the website asking visitors how they found the site (i.e., found the link while browsing the County’s website, saw the address on an Authority flyer/publication, clicked a link posted by a partner organization, etc.) to identify the most effective way to promote the Authority’s website. Other methods for measuring and improving the effectiveness of the website might include logging the nature of calls received by the Authority to identify if there are frequently asked questions about information that is not posted on the website.

Presentations

The Authority staff includes an Executive Director and an Educational Specialist. Both are available to make presentations regarding Authority programs and on a variety of waste

management and waste reduction topics. The Authority plans to have one or more staff members prepared and available as a speaker or presenter for the entire planning period.

- **Strengths:** Presentations and educational workshops are available for no cost, making these opportunities available to any school, scout group, civic organization, business, or community government in the county.
- **Challenges:** Many school demonstrations teach students that waste materials have value through hands-on learning. While these presentations may be effective when measuring how they impact a student's awareness of recycling, the effectiveness of changing students' behavior to begin recycling or recycle more has not been measured. Additionally, the low number of requests for presentations from non-student groups indicates that this program could be strengthened by more promotion of the availability of presentations to non-school groups.
- **Measuring Effectiveness:** Historically, the Authority has not measured the effectiveness of presentations. Potential methods of measurable success may include increasing the number of individuals reached and requesting that educators or group leaders complete a feedback form after a presentation has been completed. Additionally, recycling tonnage from schools with recycling programs can be estimated to identify if there is a correlation between presentations given and waste diverted.
- **Audiences to target in the planning period.** The Authority will focus on making presentations to Richland County schools that are not currently participating in the SCRAP Trailer Program. The intent of this focus will be to increase participation in the SCRAP Trailer program. Presentations at schools already participating in the program will focus on encouraging increased use of the program. A potential incentive will be the introduction of competition between the schools. If budget allows, the Authority may establish a prize for the top recycling school.

The Authority will also attempt to increase the number of presentations made to Richland County Industry during the planning period. By increasing the Authority's visibility with local industries they hope to better understand their recycling needs, increase the number of waste audits being performed, and collect better data from this group through the survey conducted for the Annual District Report. To build the awareness with the industrial community the Authority will continue to include information regarding waste audits in the mailings for the annual surveys. Additionally the Authority may host a variety of events such as open houses at the Mid-Ohio Facility. The hope of these events would be to build relationships with the local industrial community that would foster better survey results and possibly increased use of the Mid-Ohio Facility by the smaller businesses included in the industrial sector.

Adopt-a-Road

The Authority partners with the City of Mansfield to operate the Adopt-a-Road and Adopt-a-Street program. This program provides residents, schools, non-profit groups, and other organizations with the opportunity to play an active role in their community.

- **Strengths:** The program engages community groups, reduces litter, and raises public awareness about littering.

- **Challenges:** Program participation continues to be a challenge. Many groups that have stopped participating in the program cited limited time availability and increased safety and liability concerns for younger volunteers.
- **Measuring Effectiveness:** Historically, the Authority has measured effectiveness of the program by the number of groups that participate, the number of volunteers and the number of hours volunteered. In addition, the Authority could track the number of bags collected.
- **Potential to increase participation:** The Authority will plan to target organizations that engage in community service or promote its members to volunteer (Boy Scouts for example). Additionally the Authority will reach out to groups that have participated in the past, but have stopped to gather information regarding the reasons they left the program and to see if they would be interested in participating again. The goal of targeting these groups is to increase the participation in the program.

Educational Displays

The Authority hosts displays at community events and the Richland County Fair. Displays highlight RCRSWMA activities, winning posters from the annual poster contest are publicly displayed, and information on recycling, reducing/reusing and composting is presented on a rotating basis. An Authority employee is available to answer questions and talk to residents. Providing information directly to residents achieves the Authority's goal of raising awareness amongst residents about which materials can be recycled and nearby locations that accept recyclables. The Authority is targeting the correct audience given this goal.

- **Strengths:** Increases awareness of recycling opportunities by providing recycling information to the public. Reaching out to residents at events provides opportunities to reach segments of the population that might not otherwise be reached, either due to being unaware of the Authority's presence and website or because they lack access to the internet. Providing information directly to residents creates an opportunity for the public to meet Authority staff, ask questions, and give feedback about the Authority's services.
- **Challenges:** None.
- **Measuring Effectiveness:** Historically, the Authority has not measured the effectiveness of participating in community events. Possible measures include tracking the total publications that are distributed each year, the total number of events attended, and/or increased traffic to the Authority's website.

Contests

The Authority organizes and implements an annual poster contests for students. Twelve entries are selected for inclusion in a school year recycling calendar that is distributed to schools, county agencies and the public. In the past winning posters have been displayed in the Richland Mall. The calendar not only showcased the winning contestants' posters, but provided valuable information about recycling and services provided by RCRSWMA.

- **Strengths:** The program engages students and schools. Poster contests bring awareness to waste and environmental issues.
- **Challenges:** Increasing participation to involve more schools and students.

- **Measuring Effectiveness:** Historically, the Authority has only measured effectiveness of the program by the number of entries received. The Authority has not measured the degree to which contests change behavior. Noting the total locations where residents may see the results from the contests may also be a method of determining effectiveness.

Business/Industrial Sector Waste Audits

The Authority provides waste audits to commercial and industrial entities upon request. A representative from the Authority performs a site visit, review site operations, and performs a waste audit to determine what materials can be recycling or reduced. After the audit is completed, the Authority provides the entity with recommendations on materials to be recycled, how to prepare and store materials, and pickup/delivery options. Audits can be scheduled by contacting the Authority. The program is promoted on the RCRSWMA website.

- **Strengths:** The program provides entities with individualized assessments identifying opportunities to further reduce waste, increase environmental sustainability, and improve cost savings. The program provides an economic incentive to businesses, organizations, and industries while also achieving the waste reduction goals of the Authority.
- **Challenges:** Increasing program promotion and the quantity of requests for audits.
- **Measuring Effectiveness:** The Authority historically measured the success of this program in terms of the number of assessments, tons identified for diversion, and cost savings identified. Improving the measures by which the Authority tracks this program's effectiveness could involve following up with companies who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis. Further technical assistance may be needed for companies to reap the full benefits of participating in the program.
- **Planning period focus:** As discussed above under presentations, the Authority will attempt to increase the number of waste audits performed through the planning period. In addition to offering to perform waste audits, the Authority will gather information from the business and industry members that decline their offer in an attempt to better understand why they are not interested in the analysis. The Authority will gather this information for the first two years of the planning period and then try to use this information to better serve these sectors through the remainder of the period.

B. Conclusions

The following conclusions were identified as a result of the analysis of existing programs and outstanding needs:

- The Authority needs to establish quantifiable measures of effectiveness for existing programs.
 - Increase the number of schools participating in the SCRAP Trailer program and increase the materials collected from the schools currently participating.
 - Increase the number of Waste Audits performed by increasing the awareness and building relationships with the business and industrial communities in Richland County
 - Increase the number of participants in the Adopt-a Road program
 - Increase the response to the annual survey conducted as part of the Annual District Report

C. Outreach Priority

- **Annual survey responses** have been dropping over the last several years. Without adequate data, the Authority cannot appropriately evaluate the effectiveness of the programs that are being implemented.

In order to increase the survey results and improve the data that is reported annually to Ohio EPA and ultimately used to prepare the five-year plan updates, the Authority plans to initiate a campaign to improve communication with Richland County's industrial commercial and businesses. The hope of this campaign would be improved survey responses and increased recycling awareness and implementation in Richland County.

D. List of Actions

The following table presents each existing program and the actions the Authority could implement during the planning period to address the aforementioned conclusions.

Potential Actions	
Existing Programs	Potential Actions
Authority Website	Track the number of visits to the website.
Authority Website	Minimize the website's "down time" by fixing pages that are under construction as quickly as possible.
Presentations	Promote availability of presentations to non-school groups (civic groups) using a variety of means, such as posting on the Authority website and employing the support of related organizations to promote presentations to members, such as the Chamber of Commerce.
Presentation	Focus on school that are not part of the SCRAP Trailer program. Implement a competition between participating schools with prizes, if the budget allows.
Presentations	Begin tracking the number of individuals reached by each presentation and the name of each school so the Authority can identify the number of students and schools reached each year.
Presentations	Request that educators or group leaders complete a feedback form after a presentation has been completed.
Presentations	If available, track recycling tonnage from schools with recycling programs to estimate if there is a correlation between presentations given and waste diverted.
Presentations	Host Open House events at the Mid-Ohio facility to foster relationships with the industrial and commercial communities in Richland County.
Adopt-a-Road	Identify groups that have a volunteer requirement or organizations that typically perform community service and target these groups to receive information about the Authority's Adopt-a-Road program.
Adopt-a-Road	Begin tracking additional program statistics, such as the number of bags collected, weight of bags collected, and/or number of hours volunteered.
Educational Displays	Ensure promotional items display the Authority's contact information and that flyers for each target audience are available at the display.
Educational Displays	Begin tracking or estimating the total publications that are distributed at each event each year, the total number of events attended, and/or increased traffic to the Authority's website following an event.
Contests	Inform more school districts about contests to increase participation.

Existing Programs	Potential Actions
Contests	Add additional measures of effectiveness, such as tracking whether contests change behavior by tracking whether recycling tonnage increases at participating schools and/or track number of locations where contest winners' posters are displayed.
Business/Industrial Sector Waste Audits	Increase number of businesses that participate in waste audits by identifying top generators in Richland County from annual ADR survey results and reach out to businesses directly to inquire about interest in receiving an audit.
Business/Industrial Sector Waste Audits	Follow up with entities who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis.
Business/Industrial Sector Waste Audits	Request feedback from establishments that participated in an audit to identify how the Authority can further serve this audience more effectively.
Business/Industrial Sector Waste Audits	Request feedback from establishments that decline to participate in a waste audit to gain insight as to why the offer of an audit was declined. Information gathered through this effort may aid in making changes to the program that would make the audits more attractive

E. Priorities

The Authority reviewed the information presented in the table above and prioritized the list focusing on the actions which were determined to be most important and those which would require less difficulty in implementing. The step-by-step process which the Authority used to prioritize the list was as follows:

- The ranking consisted of each member of the Authority assigning a value of between 1 and 5 to each initiative with 5 being the highest priority and 1 being the least.
- The priority ranking defined whether the Authority felt an initiative or program would be implemented under the following criteria:
 - Ranking of 1 – No implementation
 - Ranking of 2 – No implementation
 - Ranking of 3 – Possible implementation with direction from Policy Committee
 - Ranking of 4 – Implement
 - Ranking of 5 – Implement
- The Authority then prioritized the results from the above step.
- The list of prioritized possible actions was then presented to the Policy Committee with discussion from Authority personnel and the Authority's consultant focusing on the initiatives or programs ranked as a 3 from the criteria above.
- The Policy Committee was then asked to assist the Authority to decide if the initiatives ranked as a 3 should or should not be implemented in the new Plan Update.
- The Policy Committee was also asked to confirm that all initiative ranked as a 4 or 5 should be implemented as recommended by the Authority and that initiatives ranked 1 or 2 should not be implemented as recommended by the Authority. • The results of this prioritization process and the programs/initiatives developed or continued are detailed in Chapter 5 of this *Plan Update*.

The following table summarizes the Authority's and Policy Committee's priorities for implementation of the possible list of actions by program:

Existing Programs	Potential Actions	Authority Priority	Policy Committee Decision
Authority Website	Track the number of visits to the website.	4	Implement
Authority Website	Minimize the website's "down time" by fixing pages that are under construction as quickly as possible.	4	When necessary
Presentations	Promote availability of presentations to non-school groups (civic groups) using a variety of means, such as posting on the Authority website and employing the support of related organizations to promote presentations to members, such as the Chamber of Commerce.	4	Implement
Presentation	Focus on school that are not part of the SCRAP Trailer program. Implement a competition between participating schools with prizes, if the budget allows.	4	Implement
Presentations	Begin tracking the number of individuals reached by each presentation and the name of each school so the Authority can identify the number of students and schools reached each year.	4	Implement
Presentations	Request that educators or group leaders complete a feedback form after a presentation has been completed.	4	Implement
Presentations	If available, track recycling tonnage from schools with recycling programs to estimate if there is a correlation between presentations given and waste diverted.	3	Do not implement at this time
Presentations	Host Open House events at the Mid-Ohio facility to foster relationships with the industrial and commercial communities in Richland County.	4	Implement
Adopt-a-Road	Identify groups that have a volunteer requirement or organizations that typically perform community service and target these groups to receive information about the Authority's Adopt-a-Road program.	3	Implement
Adopt-a-Road	Begin tracking additional program statistics, such as the number of bags collected, weight of bags collected, and/or number of hours volunteered.	3	Implement
Educational Display at Fairgrounds and Community Events	Ensure promotional items display the Authority's contact information and that flyers for each target audience are available at the display.	5	Implement
Educational Display at Fairgrounds and Community Events	Begin tracking or estimating the total publications that are distributed at each event each year, the total number of events attended, and/or increased traffic to the Authority's website following an event.	5	Implement
Contests	Inform school districts about contests to increase participation.	3	Implement
Contests	Add additional measures of effectiveness, such as tracking whether contests change behavior by tracking whether recycling tonnage increases at participating schools and/or track number of locations where contest winners' posters are displayed.	3	Do not implement at this time
Business/Industrial Sector Waste Audits	Increase number of businesses that participate in waste audits by identifying top generators in the Authority from annual ADR survey results and reach out to businesses directly to inquire about interest in receiving an audit.	4	Implement
Business/Industrial Sector Waste Audits	Follow up with entities who participated in an assessment to identify whether the companies were able to implement changes to realize the waste reduction and cost savings identified in their analysis.	4	Implement
Business/Industrial Sector Waste Audits	Request feedback from establishments that participated in an audit to identify how the Authority can further serve this audience more effectively.	5	Implement

Existing Programs	Potential Actions	Authority Priority	Policy Committee Decision
Business/Industrial Sector Waste Audits	Request feedback from establishments that decline to participate in a waste audit to gain insight as to why the offer of an audit was declined. Information gathered through this effort may aid in making changes to the program that would make the audits more attractive	5	Implement

APPENDIX M
WASTE MANAGEMENT CAPACITY ANALYSIS



1. Access to Publicly-Available Landfill Facilities

In the reference year of 2016, nearly 92 percent of Richland County waste, which was disposed, was either sent directly to the Noble Road Landfill or transferred to this landfill from the Richland County Transfer Station. Approximately 7 percent of Richland County waste disposed in 2016 was handled by the Crawford County Landfill. These two landfills, Noble Road Landfill and the Crawford County Landfill, had an estimated 5.3 and 47.7 years of remaining capacity, respectively, as of the end of 2017 (see Table M-1).

Table M-1 Remaining Operating Life of Publicly-Available Landfills

Facility	Location	Years of Remaining Capacity
Noble Road Landfill	Richland County	5.3 (29)
Crawford County Landfill	Crawford County	47.7
American Landfill	Stark County	65
Kimble Sanitary Landfill	Tuscarawas County	36.4
Countywide Recycling and Disposal Facility	Stark County	70.7
Pine Grove Regional Facility	Fairfield County	57
Stony Hollow	Montgomery County	22
Sunny Farms Landfill	Seneca County	12.2

*The Noble Road Landfill is currently pursuing an expansion permit that will increase the facility life by 24 years.

Source(s) of Information: Ohio EPA Facility Data Report 2017

The Format v4.0 states that Districts should have access to disposal capacity for a minimum of the first eight (8) years of the planning period. Noble Road Landfill and Crawford County Landfill have enough capacity to provide adequate disposal for the Richland County Regional Solid Waste Management Authority throughout the planning period. Based upon this information the Authority has concluded that adequate landfill capacity exists through year 2034 and no further analysis to demonstrate available capacity is necessary.

2. Access to Captive Landfill Facilities

There are no captive landfills in Richland County

3. Incinerators and Energy Recovery Facilities

There are no incinerators or energy recovery facilities in Richland County

APPENDIX N

EVALUATING GREENHOUSE GAS EMISSIONS



Greenhouse Gas (GHG) emissions associated with the solid waste management activities were estimated for the Authority using the U.S. Environmental Protection Agency's Waste Reduction Model (WARM). The WARM was applied to reference year (2016) data and data projected for the sixth year of the planning period (2025). Only residential/commercial waste category were utilized in the WARM. Sources of waste and recyclables have been combined as necessary in order to create waste category totals corresponding to input entries available in the WARM. For instance, the "Mixed Recyclables" waste category in Table N-1 represents the sum of the estimated tonnages for the following categories:

- Commercial Survey
- Ohio EPA Commercial Retail Data
- RCRSWMA Drop-off
- Drop-off Recycling Locations
- SCRAP Trailer

Table N-1 Inputs for WARM: 2016 and 2025

Waste Category	2016 Reference Year			2025		
	Recycled	Landfilled	Composted	Recycled	Landfilled	Composted
Yard Trimmings	*	*	4,589	*	*	3,856
Mixed recyclables	33,785	*	*	39,101	*	*
Scrap Tires	1,858	*	*	3,235	*	*
Mixed Waste	*	86,683	*	*	83,164	*

The top half of Table N-2 shown below provides the results from the WARM assuming that all waste generated in the reference year is disposed in landfills. The model estimates a net production of 52,030 metric tons of carbon dioxide equivalents (MTCO₂E) using this assumption which is characterized as the baseline scenario. The second half of Table N-2 represents the actual amounts recycled, composted, and landfilled in 2016, and is termed the alternative scenario. The alternative scenario results in a net generation of -54,906 MTCO₂E

Table N-2 Greenhouse Gas Emissions Summary for the Reference Year Data

GHG Emissions from Baseline Waste Management (MTCO ₂ E):					52,030
Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Total MTCO ₂ E
Yard Trimmings	NA	4,589.0	-	-	(975)
Mixed Recyclables	-	3,3785.0	-	NA	15,239
Mixed MSW	NA	86,683.0	-	NA	41,257
Tires	-	1,858.0	-	NA	72

**GHG Emissions from Alternative Waste Management Scenario
(MTCO₂E):**

(54,906)

Material	Tons Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Total MTCO ₂ E	Change (Alt - Base) MTCO ₂ E
Yard Trimmings	NA	NA	-	-	4,589.0	(564)	411
Mixed Recyclables	NA	3,3785.0	-	-	NA	(95,484)	(110,724)
Mixed MSW	NA	NA	86,683.0	-	NA	41,257	0
Tires	-	1,858.0	-	-	NA	(718)	(790)

Combining the results from the two scenarios shows the GHG reductions within each waste category which are achieved by recycling and composting compared to landfilling all of the waste stream (See Table N-3). The total GHG reductions are 90,931 MTCO₂E.

Table N-3. Net GHG Reductions for 2014: Alternative vs. Baseline Scenarios

Waste Category	Difference Between Scenarios in MTCO ₂ E (Baseline - Alternative)
Yard Trimmings	411
Mixed recyclables	-110,724
Scrap Tires	-790
Mixed Waste	0
Net Totals	-111,103

MTCO₂E = metric tons of carbon dioxide equivalent

The majority of the waste sent for disposal from Richland County during the reference year was received by the Noble Road Landfill, which operates a gas recovery system. This facility flared the collected gas instead of processing it for energy recovery. The results shown in Table N-3 reflect these inputs, which were included in the WARM.

The analysis described above has also been conducted for year six of the planning period, or year 2025. The following table shows that the net GHG reductions in 2025 by recycling are more than 129,000 MTCO₂E.

Table N-4. Net GHG Reductions for 2023: Alternative vs. Baseline Scenarios

Waste Category	Difference Between Scenarios in MTCO ₂ E (Baseline - Alternative)
Yard Trimmings	345
Mixed recyclables	-128,146
Scrap Tires	-1,376
Mixed Waste	0
Net Totals	-129,177

MTCO₂E = metric tons of carbon dioxide equivalent

The WARM results shown in this analysis reflect landfill disposal in facilities, which include a landfill gas recovery system. It is worth noting that the alternative scenario results for 2025 show that GHG emissions reductions would decrease nearly 5000 MTCO₂E, were Richland County waste sent to landfills without a gas recovery system since the greenhouse gases generated from landfill disposal would be released directly into the atmosphere.

APPENDIX O FINANCIAL PLAN



This Appendix summarizes the Authority's funding mechanisms, projected revenues and expenses for the planning period of 2020-2034. The Authority has prepared the budget section of this Plan Update to meet the requirements in the Ohio Revised Code, Section 3734.53 (A)(13)(d):

The methods of financing implementation of the plan and a demonstration of the availability of financial resources for that purpose.

The budget tables prepared for this *Plan Update* demonstrate that the Authority has the financial funding throughout the planning period to implement the planned programs and initiatives.

Nothing contained in these budget projections should be construed as a binding commitment by the Authority to spend a specific amount of money on a particular strategy, facility, program and/or activity. The Board, with the advice and assistance of the Authority Manager, will review and revise the budget as needed to implement the planned strategies, facilities, programs and/or activities as effectively as possible with the funds available. Revenues, not otherwise committed to an existing strategy, facility, program or activity may be used to increase funding to improve the effectiveness of an existing strategy, facility, program or activity and to provide funding for a new strategy, facility, program or activity the Board concludes is justified based on the Authority Coordinator's recommendations and the content of this Plan Update.

The Authority is committed to implementing planned strategies, facilities, programs and/or activities in a cost-effective manner. The Authority is committed to improving the effectiveness and reduce the cost of all Authority strategies, facilities, programs and activities. The Board is authorized to expend Authority funds among other uses included in the *Plan Update* when costs are reduced. Additionally, the Board is authorized to use reduced costs to provide grant funds or direct funding to evaluate, test and/or implement new strategies, facilities, programs and activities that are in compliance with this *Plan Update* are not a "material change in circumstance" regarding the implementation of this *Plan Update*.

1. Funding Mechanisms and Revenue Generated

There are several funding mechanisms available to Solid Waste Management Districts in Ohio. The purpose of this Chapter is to explain the revenue production mechanisms that the Authority will use, to list the expected costs of the programs that the Authority will implement during the planning period, and to demonstrate that the Authority can fund the requirements of this Plan for the entire fifteen-year planning period.

A. Disposal Fee

The Authority does not receive revenue from disposal fees; therefore, Table O-1 has been omitted.

B. Generation Fee

The generation fee is a fee paid on all municipal solid waste generated in the boundaries of the Authority. The fee is collected at the first disposal facility, transfer facility or landfill to receive the waste. The fee is paid on residential/ commercial waste, industrial waste and waste listed as "other." The generation fee is not paid on exempt waste.

Although shredder residue is not exempt waste, a provision in Ohio Law allows solid waste districts to exempt shredder residue from all or part of the generation fee. On March 15, 2006, the Authority Board of Directors passed a resolution exempting automobile shredder residue generated by Milliron Industries' metal shredding facility from the generation fee. The exemption was requested by Milliron Industries based on Am. H.B. 100 that was passed in the 126th General Assembly.

Milliron Industries is the only facility within the jurisdiction of the Authority, which generates shredder residue. The Authority's Solid Waste Management Plan, which was approved by the Ohio Environmental Protection Agency on September 25, 2007, states that, "the exemption will take effect on April 1, 2006 and will continue throughout the planning period. The exemption is hereby included in the RCRSWMA plan." At the time that this plan was prepared, the Authority Board of Directors voted to discontinue the exemption. ASR currently accepted at Noble Road Landfill may be designated for use as alternate daily cover. The Ohio State Budget Bill passed in 2017, exempts solid waste used as an ADC from the collection of solid waste fees. Any ASR accepted at the Noble Road Landfill that is not designated as daily cover, will be subject to the generation fee.

The generation fee in effect in 2016 was \$7.50 per ton. The Authority will continue to collect a generation fee of \$7.50 until the thirteenth year of the planning period. On January 1, 2032, the fee will be raised to \$8.50. Implementation of the \$8.50 generation fee in January 2032 will occur as a result of the ratification and approval of this Solid Waste Management Plan. The RCRSWMA will reassess the generation fee level that is required to support the Authority's planned programs when the next five-year plan update is prepared.

Table O-2 Generation Fee Schedule and Revenue

Year	Generation Fee Schedule (\$ per ton)	Total Revenue from Generation Fee (\$)
2012	\$7.50	\$736,072
2013	\$7.50	\$768,684
2014	\$7.50	\$754,089
2015	\$7.50	\$675,014
2016	\$7.50	\$868,077
2017	\$7.50	\$884,950
2018	\$7.50	\$853,947

Source(s) of Information: The Annual Revenue and expenditure report submitted by RCRSWMA to Ohio EPA

The revenue from the generation fee does not directly correspond to the tons of Richland County generated waste that ultimately went to a landfill for disposal. The ASR accepted at the Noble Road Landfill was exempted from the generation fee in past solid waste management plans. The ASR is also used as an alternate daily cover at the Noble Road Landfill and is therefore exempt from solid waste fees per ORC.

Historical Revenue Analysis (Revenue \$)					
Average revenue received	Annual change in revenue received		Annual Percentage Change in Revenue Received		Average percentage change in revenue received
(\$)	Year	Revenue	Year	%	%
\$791,548	2012		2012		3%
	2013	\$32,611	2013	4%	
	2014	-\$14,595	2014	-2%	
	2015	-\$79,075	2015	-10%	
	2016	\$193,063	2016	29%	
	2017	\$16,873	2017	2%	
	2018	-\$31,004	2018	-4%	

The Historic Revenue Analysis shows that the Authority averaged \$791,548 per year for the seven-year period. The average percentage change over the period was 3% per year.

Projecting Generation Fee revenue into the planning period was accomplished by looking at the average percentage change in residential/commercial waste and industrial waste that is projected to be disposed through the planning period. The average yearly percentage change for residential/commercial waste combined with industrial waste generated within RCRSWMA is projected to increase by 2.5%. The average yearly percentage change for revenue from the generation fee is 3%. As expected the percentage change in the generation fee and the disposal rates for waste generated in Richland County are very similar. To project the generation fee collected during the planning period, the average fee from 2012 through 2018 was used to estimate the 2019 generation fees and then a 2.0% annual increase was assumed from the reference year through the seventh year of the planning period. From the seventh year on a constant generation fee was assumed because of the unknowns in the economy. This assumption allows for the implementation of the plan throughout the planning period and projects into the future beyond the time of the next plan update.

Year	Generation Fee Schedule (\$ per ton)	Total Revenue from Generation Fee (\$)
2019	\$7.50	\$791,548
2020	\$7.50	\$807,379
2021	\$7.50	\$823,526
2022	\$7.50	\$839,997
2023	\$7.50	\$856,797
2024	\$7.50	\$873,933
2025	\$7.50	\$891,411
2026	\$7.50	\$909,239
2027	\$7.50	\$909,239
2028	\$7.50	\$909,239
2029	\$7.50	\$909,239
2030	\$7.50	\$909,239
2031	\$7.50	\$909,239
2032	\$8.50	\$1,030,168
2033	\$8.50	\$1,030,168
2034	\$8.50	\$1,030,168

2020 through 2026 Generation Fee = previous year Generation Fee × 1.02
= \$807,379 × 1.02
= \$823,526

2032 through 2034 increase is based on the fee increase.

C. Designation Fees

In addition to the generation fee, the Authority receives one dollar for each ton of out-of-district waste and two dollars on each ton of out-of-state waste disposed in the Noble Road Landfill by contract with the facility's owner, Rumpke. The contract is expected to continue for the entire planning period. The amount of waste from outside of the RCRSWMA in any particular year is controlled by the landfill and the landfill's customers. The amount of anticipated revenue from the

Noble Road Landfill is based on previous year's receipts. Rumpke believes that the amount of out-of-district waste received by the landfill will increase over time. The Authority is projecting modest growth in revenue from the contract fee of 4% per year for the first seven years of the planning period then assuming a constant amount from the seventh year to the end of the planning period. Rumpke is currently pursuing an expansion permit for the Noble Road Landfill that will add 24 years to the facility life per the authorized maximum daily waste receipt and additional years beyond 24 based on the actual gate receipts. The Authority is confident that the landfill will continue to expand and actively seek customers from out-of-district and out-of-state. However, the Authority has included a contingency funding mechanism in Section C of this Appendix. The contingency funding mechanism will be implemented if the contract with the owners of the Noble Road Landfill fails as a funding source for any reason.

Table O-3 Designation Fee Schedule and Revenue

Year	Total Revenue from Designation Fee (\$)
2012	\$447,937
2013	\$543,272
2014	\$587,242
2015	\$456,171
2016	\$482,999
2017	\$623,744
2018	\$711,813

Source(s) of Information: The Annual Revenue and expenditure report submitted by RCRSWMA to Ohio EPA

Historical Revenue Analysis (Revenue \$)					
Average revenue received	Annual change in revenue received		Annual Percentage Change in Revenue Received		Average percentage change in revenue received
(\$)	Year	Revenue	Year	%	%
\$550,454	2012		2012		9%
	2013	\$95,335	2013	21%	
	2014	\$43,971	2014	8%	
	2015	-\$131,071	2015	-22%	
	2016	\$26,827	2016	6%	
	2017	\$140,746	2017	29%	
	2018	\$88,069	2018	14%	

The Historic Revenue Analysis shows that the Authority averaged \$550,454 per year for the seven-year historic review period. The average percentage change over the period was 9% per year.

Projecting Designation Fee revenue into the planning period was accomplished by looking at the average percentage change in the fee over the planning period. As shown in the historic analysis,

the average annual percentage change for the fee collected was 9%. To project the generation fee collected during the planning period, the average fee from 2012 through 2018 was used to estimate the 2019 designation fees and then a conservative 4% annual increase was assumed from the reference year through the seventh year of the planning period. From the seventh year on a constant designation fee was assumed because of the unknowns in the economy. This assumption allows for the implementation of the plan throughout the planning period and projects into the future beyond the time of the next plan update.

Year	Total Revenue from Designation Fee (\$)
2019	\$550,454
2020	\$572,472
2021	\$595,371
2022	\$619,186
2023	\$643,953
2024	\$669,711
2025	\$696,500
2026	\$724,360
2027	\$724,360
2028	\$724,360
2029	\$724,360
2030	\$724,360
2031	\$724,360
2032	\$724,360
2033	\$724,360
2034	\$724,360

2020 through 2026 Designation Fee	= previous year Designation Fee × 1.04
	= \$550,454 × 1.03
	= \$572,472

D. Debt/Loans

In 2012, the Authority paid off a \$500,000 loan, which was used to make necessary improvements at the closed Richland County Landfill. The loan and interest was paid in full by the end of 2012. Since that time, the Authority has not incurred any additional loans nor does the Authority have any specific plans to borrow during the planning period. However, the Authority Board of Directors is authorized to secure loans in order to finance the purchase of facilities or equipment necessary to implement this plan or to finance repairs or improvements at the closed Richland County Landfill as may be required to properly maintain the facility and to protect public health and safety. Table O-4 "Debt" has been omitted.

E. Other Sources of Authority Revenue

Grants: In 2012, the Authority was awarded a small grant (under \$3,000) for special purposes like litter clean-up and tire recycling. Since the Authority cannot predict if grants will be available,

grants are not included in the budget for the planning period. The Authority may, however, apply for and utilize grant funds for any of the programs and activities that are included in this plan or for any other purpose related to waste reduction, recycling, composting, or waste management.

Compost facility fees: User fees at the Authority's compost facility provide a substantial portion of the cost of running the facility. The facility charges a fee for incoming material and sells the completed compost. The projected fee is based on an average of fees earned in 2012 through 2018. The average annual percentage change through that period was 20% year to year. While the Authority believe that the revenue from Compost Facility Use Fee will continue to grow, a more conservative annual increase of 5% is assumed for the projections into the planning period. The average fees from 2012 to 2018 were used to estimate the fees collected in 2019 and then increased by 5% through the seventh year of the planning period. From the seventh year on the amount was held constant.

Mid-Ohio recycling facility fees: The Authority charges moderate fees to help defray the cost of recycling some difficult to manage materials including televisions, appliances with refrigerants, fluorescent bulbs, and tires. These fees are published and posted at the RCRSWMAN Mid-Ohio Recycling Facility. The amount entered for 2019 is the average of the fees collected from 2012 to 2018, \$27,653. The average annual increase through this historic review period is nearly 15% year to year. A more conservative increase of 5% is assumed from 2019 through the seventh year of the planning period. From the seventh year on the amount was held constant.

Sale of recyclables: The Authority receives revenue from the sale of materials that are collected in the RCRSWMA drop-off recycling bins and the Mid-Ohio Recycling facility on National Parkway. The revenue from these programs will vary depending on the market price for recyclable materials. The amount entered for the planning period is based on the average of the revenue earned in 2012 through 2018. The revenue is projected to grow as the amount of material collected increases. The Authority projects an increase in material collected in each year of the planning period. However, current market conditions are experiencing a decline in the prices paid for recyclables. The average annual percentage change through the historic review was a decrease of 14% year to year. To estimate the recycling revenue through the planning period, the average revenue from 2012 to 2018 was used to estimate the revenue earned in 2019, \$36,714, and then decreased by 10% through the seventh year of the planning period. From the seventh year on the amount was held constant. This average over time is likely to fluctuate and will be re-evaluated with the next plan update.

Other miscellaneous revenue: This category includes revenue from workshop registration fees, refunds and rebates, and other small payments that do not fit in any of the other program categories. The amount of revenue generally realized from these miscellaneous sources is not consistent or predictable. Therefore, it has not been included in the budget for the planning period.

Table O-5 Other Sources of Revenue

Year	Recycling Revenue	Compost Facility Fees	Recycling Facility Fee	Total Other Revenue
2012	\$56,343	\$32,637	\$11,973	\$102,953
2013	\$52,018	\$31,182	\$13,716	\$96,915
2014	\$47,777	\$10,836	\$11,381	\$75,604
2015	\$39,915	\$24,220	\$9,223	\$86,370
2016	\$42,451	\$28,047	\$14,452	\$84,950
2017	\$8,284	\$33,576	\$17,803	\$59,663
2018	\$10,208	\$33,076	\$28,310	\$71,595

Source(s) of Information: The Annual Revenue and expenditure report submitted by RCRSWMA to Ohio EPA

Year	Recycling Revenue	Mid-Ohio Facility Use Fee	Compost Facility Fees	Total Other Revenue
2019	\$36,714	\$27,653	\$15,265	\$79,632
2020	\$33,042	\$29,036	\$16,029	\$78,107
2021	\$29,738	\$30,488	\$16,830	\$77,056
2022	\$26,764	\$32,012	\$17,672	\$76,448
2023	\$24,088	\$33,613	\$18,555	\$76,256
2024	\$21,679	\$35,294	\$19,483	\$76,455
2025	\$19,511	\$37,058	\$20,457	\$77,026
2026	\$17,560	\$38,911	\$21,480	\$77,951
2027	\$17,560	\$38,911	\$21,480	\$77,951
2028	\$17,560	\$38,911	\$21,480	\$77,951
2029	\$17,560	\$38,911	\$21,480	\$77,951
2030	\$17,560	\$38,911	\$21,480	\$77,951
2031	\$17,560	\$38,911	\$21,480	\$77,951
2032	\$17,560	\$38,911	\$21,480	\$77,951
2033	\$17,560	\$38,911	\$21,480	\$77,951
2034	\$17,560	\$38,911	\$21,480	\$77,951

2020 through 2026

Recycling Revenue = previous year Recycling Revenue - previous year Recycling Revenue × 0.10
= \$36,714 – (36,714 × 0.10)
= \$33,042

Mid-Ohio Facility Fees = previous year use fees × 1.05
= \$27,653 × 1.05
= \$29,036

Compost Facility Fee = previous year Compost Facility Fees × 1.05
= 15,265 × 1.05

= \$16,029

F. Summary of Authority Revenues

The total revenue, comprised of contract fees and other revenue, was \$1,436,025 during the reference year. Revenue in the first year of the planning period (2020) is projected to be \$1,457,958. Revenue is projected to increase annually to \$1,711,550 in 2026. From 2026 through the end of the planning period, the revenue is held constant. The following table presents a summary of the Authority's actual and projected total revenue from 2012 to 2034.

Table O-6 Total Revenue

Year	Generation Fees	Designation Fees	Other Revenue	Total Revenue
2012	\$736,072	\$447,937	\$102,953	\$1,286,962
2013	\$768,684	\$543,272	\$96,915	\$1,408,871
2014	\$754,089	\$587,242	\$75,604	\$1,416,935
2015	\$675,014	\$456,171	\$86,370	\$1,217,555
2016	\$868,077	\$482,999	\$84,950	\$1,436,025
2017	\$884,950	\$623,744	\$59,663	\$1,568,358
2018	\$853,947	\$711,813	\$71,595	\$1,637,354
2019	\$791,548	\$550,454	\$79,632	\$1,421,634
2020	\$807,379	\$572,472	\$78,107	\$1,457,958
2021	\$823,526	\$595,371	\$77,056	\$1,495,953
2022	\$839,997	\$619,186	\$76,448	\$1,535,631
2023	\$856,797	\$643,953	\$76,256	\$1,577,006
2024	\$873,933	\$669,711	\$76,455	\$1,620,099
2025	\$891,411	\$696,500	\$77,026	\$1,664,937
2026	\$909,239	\$724,360	\$77,951	\$1,711,550
2027	\$909,239	\$724,360	\$77,951	\$1,711,550
2028	\$909,239	\$724,360	\$77,951	\$1,711,550
2029	\$909,239	\$724,360	\$77,951	\$1,711,550
2030	\$909,239	\$724,360	\$77,951	\$1,711,550
2031	\$909,239	\$724,360	\$77,951	\$1,711,550
2032	\$1,030,168	\$724,360	\$77,951	\$1,832,479
2033	\$1,030,168	\$724,360	\$77,951	\$1,832,479
2034	\$1,030,168	\$724,360	\$77,951	\$1,832,479

Source(s) of Information: The Annual Revenue and expenditure report submitted by RCRSWMA to Ohio EPA

2. Cost of Implementing Plan

One of the responsibilities of the RCRSWMA is to maintain the closed Richland County Landfill ensuring it meets all Ohio EPA and US EPA rules and regulations. Although there has been little discussion of the closed Richland County Landfill in the rest of this Plan the Authority's responsibility for maintaining the closed landfill influences every part of this Plan. Maintaining the landfill, which no longer generates any revenue, requires the expenditure of almost as much annually as all other Authority programs combined. In

addition, the landfill complicates planning because it has a history of developing environmental problems, which are very expensive to correct or remediate.

The landfill is the major reason that several programs are listed in the Implementation Schedule as “optional, fund dependent.” The Authority does not feel that it is appropriate to seek fee increases given the present economy. The Authority is committed to providing required programs, but programs that are not required by the State Plan are considered optional in that they could be discontinued if funds are required to keep the closed landfill in compliance with environmental regulations or to fund the Authority’s programs that are required to be in compliance with the State Solid Waste Management Plan and this Plan.

Explanation of Expenses

Table O-7 includes actual expenses from 2012 to 2018, a projected cost for 2019 which was calculated by averaging the costs from 2012 through 2016, and anticipated expenses and projected expenditures from 2020 to 2034. Line items explained below are numbered according to the corresponding line item number in the Table O-7. Line items that did not have any expenditures projected throughout the planning period were omitted from the discussion below. Projections were developed using the following assumptions or criteria:

A. Plan Monitoring and Preparation

Budget includes estimated expenses related to retaining a consultant for assistance with plan preparation for each 5-year update that will occur during the planning period and the preparation of the Annual District Report.

B. Plan Implementation

B.1 Authority Administration

This expense includes the salaries and benefits of two full-time employees, the Authority Executive Director and the Administrative Assistant; utilities; office equipment and supplies; telephone, mailing, mileage, staff training and miscellaneous expenses directly required for the administration of Authority programs. Also included are consulting contracts for planning, legal fees and other professional service that may be needed by the Authority

B.2 Facility Operation

B.2.a MRF/Recycling Center

The expenses with operating the Mid-Ohio Facility are included in the Recycling Collection, Drop-off line item of table O-7.

B.2.b Compost

The expense entry includes all of the costs for operating the compost facility including one FTE for 9 months; the employee has other responsibilities when the compost facility is not open. Other costs are equipment fuel and maintenance, and miscellaneous costs. A substantial portion of the cost is offset by user fees and compost sales included in the Authority revenue table

Table O-7 Expenses

Line #	Category/Program	2012	2013	2014	2015	2016	2017
1	1. Plan Monitoring/Prep.	\$10,954	\$1,253	\$7,060	\$5,164	\$5,500	\$5,849
1.a	a. Plan Preparation				\$345		
1.b	b. Plan Monitoring	\$10,954	\$1,253	\$7,060	\$4,819	\$5,500	\$5,849
1.c	c. Other						
2	2. Plan Implementation	\$1,652,925	\$1,172,764	\$1,047,315	\$1,468,561	\$1,494,838	\$1,229,393
2.a	a. District Administration	\$137,580	\$135,267	\$134,935	\$147,261	\$173,022	\$145,042
2.a.1	Personnel	\$92,155	\$93,410	\$94,871	\$103,968	\$102,019	\$115,427
2.a.2	Office Overhead	\$40,369	\$39,965	\$40,002	\$43,293	\$71,002	\$29,615
2.a.3	Other	\$5,056	\$1,892	\$63			
2.b	b. Facility Operation	\$53,259	\$45,684	\$52,824	\$58,900	\$110,161	\$62,143
2.b.1	MRF/Recycling Center						
2.b.2	Compost	\$53,259	\$45,684	\$52,824	\$58,900	\$110,161	\$62,143
2.b.3	Transfer						
2.b.4	Special Waste						
2.c	c. Landfill Closure/Post-Closure	\$541,038	\$585,145	\$400,236	\$825,913	\$468,208	\$365,672
2.d	d. Recycling Collection	\$365,471	\$344,786	\$366,192	\$341,226	\$360,466	\$390,141
2.d.1	Curbside						
2.d.2	Drop-off	\$365,471	\$344,786	\$366,192	\$341,226	\$360,466	\$390,141
2.d.3	Combined Curbside/Drop-off						
2.d.4	Multi-family						
2.d.5	Business/Institutional						
2.d.6	Other						
2.e	e. Special Collections	\$0	\$0	\$0	\$0	\$0	\$0
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						
2.f	f. Yard Waste/Other Organics						
2.g	g. Education/Awareness	\$46,078	\$61,472	\$80,046	\$95,262	\$107,012	\$87,027
2.g.1	Education Staff	\$46,078	\$61,472	\$80,046	\$89,111	\$98,154	\$72,716
2.g.2	Advertisement/Promotion				\$6,151	\$8,858	\$14,311
2.g.3	Other						
2.h	h. Recycling Market Development	\$0	\$0	\$0	\$0	\$0	\$0
2.h.1	General Market Development Activities						
2.h.2	ODNR pass-through grant						
2.i	i. Service Contracts						
2.j	j. Feasibility Studies						
2.k	k. Waste Assessments/Audits						
2.l	l. Dump Cleanup						
2.m	m. Litter Collection/Education						
2.n	n. Emergency Debris Management						
2.o	o. Loan Payment						
2.p	p. Other	\$509,500	\$410	\$13,082		\$275,969	\$179,369
3	3. Health Dept. Enforcement	\$7,500	\$7,500	\$6,609	\$7,600	\$7,493	\$0
	<i>Health Department Name: Richland County</i>	\$7,500	\$7,500	\$6,609	\$7,600	\$7,493	
4	4. County Assistance	\$0	\$0	\$0	\$0	\$0	\$2,755
4.a	a. Maintaining Roads						
4.b	b. Maintaining Public Facilities						
4.c	c. Providing Emergency Services						
4.d	d. Providing Other Public Services						\$2,755
5	5. Well Testing						
6	6. Out-of-State Waste Inspection						
7	7. Open Dump, Litter Law Enforcement	\$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
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		\$1,671,379	\$1,181,516	\$1,060,984	\$1,481,325	\$1,507,831	\$1,237,996

Table O-7 Expenses

Line #	Category/Program	2018	2019	2020	2021	2022	2023
1	1. Plan Monitoring/Prep.	\$14,928	\$36,000	\$5,665	\$5,835	\$6,010	\$21,640
1.a	a. Plan Preparation	\$9,428	\$30,500				\$15,450
1.b	b. Plan Monitoring	\$5,500	\$5,500	\$5,665	\$5,835	\$6,010	\$6,190
1.c	c. Other						
2	2. Plan Implementation	\$1,098,937	\$1,178,476	\$1,217,230	\$1,257,276	\$1,298,657	\$1,341,419
2.a	a. District Administration	\$126,517	\$145,343	\$150,430	\$155,695	\$161,144	\$166,784
2.a.1	Personnel	\$111,304	\$105,518	\$109,211	\$113,033	\$116,990	\$121,084
2.a.2	Office Overhead	\$15,213	\$39,825	\$41,219	\$42,661	\$44,155	\$45,700
2.a.3	Other						
2.b	b. Facility Operation	\$60,946	\$63,417	\$65,319	\$67,279	\$69,297	\$71,376
2.b.1	MRF/Recycling Center		\$0	\$0	\$0	\$0	\$0
2.b.2	Compost	\$60,946	\$63,417	\$65,319	\$67,279	\$69,297	\$71,376
2.b.3	Transfer						
2.b.4	Special Waste						
2.c	c. Landfill Closure/Post-Closure	\$403,718	\$512,847	\$530,797	\$549,375	\$568,603	\$588,504
2.d	d. Recycling Collection	\$383,201	\$364,497	\$375,432	\$386,695	\$398,296	\$410,245
2.d.1	Curbside						
2.d.2	Drop-off	\$383,201	\$364,497	\$375,432	\$386,695	\$398,296	\$410,245
2.d.3	Combined Curbside/Drop-off						
2.d.4	Multi-family						
2.d.5	Business/Institutional						
2.d.6	Other						
2.e	e. Special Collections	\$0	\$0	\$0	\$0	\$0	\$0
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						
2.f	f. Yard Waste/Other Organics						
2.g	g. Education/Awareness	\$82,420	\$92,372	\$95,251	\$98,232	\$101,317	\$104,510
2.g.1	Education Staff	\$71,376	\$82,281	\$85,161	\$88,141	\$91,226	\$94,419
2.g.2	Advertisement/Promotion	\$11,044	\$10,091	\$10,091	\$10,091	\$10,091	\$10,091
2.g.3	Other						
2.h	h. Recycling Market Development	\$0	\$0	\$0	\$0	\$0	\$0
2.h.1	General Market Development Activities						
2.h.2	ODNR pass-through grant						
2.i	i. Service Contracts						
2.j	j. Feasibility Studies						
2.k	k. Waste Assessments/Audits						
2.l	l. Dump Cleanup						
2.m	m. Litter Collection/Education						
2.n	n. Emergency Debris Management						
2.o	o. Loan Payment						
2.p	p. Other	\$42,135					
3	3. Health Dept. Enforcement	\$3,727	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
	<i>Health Department Name: Richland County</i>	\$3,727	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
4	4. County Assistance	\$4,769	\$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	\$4,769					
5	5. Well Testing						
6	6. Out-of-State Waste Inspection						
7	7. Open Dump, Litter Law Enforcement	\$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
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		\$1,122,361	\$1,222,976	\$1,231,395	\$1,271,611	\$1,313,167	\$1,371,559

Table O-7 Expenses

Line #	Category/Program	2024	2025	2026	2027	2028	2029
1	1. Plan Monitoring/Prep.	\$32,126	\$6,567	\$6,764	\$6,967	\$23,090	\$33,914
1.a	a. Plan Preparation	\$25,750				\$15,914	\$26,523
1.b	b. Plan Monitoring	\$6,376	\$6,567	\$6,764	\$6,967	\$7,176	\$7,392
1.c	c. Other						
2	2. Plan Implementation	\$1,385,607	\$1,431,270	\$1,478,457	\$1,527,218	\$1,577,607	\$1,629,679
2.a	a. District Administration	\$172,622	\$178,663	\$184,917	\$191,389	\$198,087	\$205,020
2.a.1	Personnel	\$125,322	\$129,708	\$134,248	\$138,947	\$143,810	\$148,843
2.a.2	Office Overhead	\$47,299	\$48,955	\$50,668	\$52,442	\$54,277	\$56,177
2.a.3	Other						
2.b	b. Facility Operation	\$73,517	\$75,723	\$77,994	\$80,334	\$82,744	\$85,227
2.b.1	MRF/Recycling Center	\$0	\$0	\$0	\$0	\$0	\$0
2.b.2	Compost	\$73,517	\$75,723	\$77,994	\$80,334	\$82,744	\$85,227
2.b.3	Transfer						
2.b.4	Special Waste						
2.c	c. Landfill Closure/Post-Closure	\$609,102	\$630,420	\$652,485	\$675,322	\$698,958	\$723,422
2.d	d. Recycling Collection	\$422,552	\$435,229	\$448,286	\$461,735	\$475,587	\$489,854
2.d.1	Curbside						
2.d.2	Drop-off	\$422,552	\$435,229	\$448,286	\$461,735	\$475,587	\$489,854
2.d.3	Combined Curbside/Drop-off						
2.d.4	Multi-family						
2.d.5	Business/Institutional						
2.d.6	Other						
2.e	e. Special Collections	\$0	\$0	\$0	\$0	\$0	\$0
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						
2.f	f. Yard Waste/Other Organics						
2.g	g. Education/Awareness	\$107,815	\$111,235	\$114,775	\$118,439	\$122,231	\$126,156
2.g.1	Education Staff	\$97,724	\$101,144	\$104,684	\$108,348	\$112,140	\$116,065
2.g.2	Advertisement/Promotion	\$10,091	\$10,091	\$10,091	\$10,091	\$10,091	\$10,091
2.g.3	Other						
2.h	h. Recycling Market Development	\$0	\$0	\$0	\$0	\$0	\$0
2.h.1	General Market Development Activities						
2.h.2	ODNR pass-through grant						
2.i	i. Service Contracts						
2.j	j. Feasibility Studies						
2.k	k. Waste Assessments/Audits						
2.l	l. Dump Cleanup						
2.m	m. Litter Collection/Education						
2.n	n. Emergency Debris Management						
2.o	o. Loan Payment						
2.p	p. Other						
3	3. Health Dept. Enforcement	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
	<i>Health Department Name: Richland County</i>	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
4	4. County Assistance	\$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
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
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		\$1,426,233	\$1,446,337	\$1,493,721	\$1,542,685	\$1,609,197	\$1,672,093

Table O-7 Expenses

Line #	Category/Program	2030	2031	2032	2033	2034
1	1. Plan Monitoring/Prep.	\$7,613	\$7,842	\$8,077	\$24,710	\$35,887
1.a	a. Plan Preparation				\$16,391	\$27,318
1.b	b. Plan Monitoring	\$7,613	\$7,842	\$8,077	\$8,319	\$8,569
1.c	c. Other					
2	2. Plan Implementation	\$1,683,489	\$1,739,096	\$1,796,561	\$1,855,945	\$1,917,314
2.a	a. District Administration	\$212,196	\$219,623	\$227,310	\$235,265	\$243,500
2.a.1	Personnel	\$154,053	\$159,445	\$165,025	\$170,801	\$176,779
2.a.2	Office Overhead	\$58,143	\$60,178	\$62,284	\$64,464	\$66,721
2.a.3	Other					
2.b	b. Facility Operation	\$87,783	\$90,417	\$93,129	\$95,923	\$98,801
2.b.1	MRF/Recycling Center	\$0	\$0	\$0	\$0	\$0
2.b.2	Compost	\$87,783	\$90,417	\$93,129	\$95,923	\$98,801
2.b.3	Transfer					
2.b.4	Special Waste					
2.c	c. Landfill Closure/Post-Closure	\$748,741	\$774,947	\$802,070	\$830,143	\$859,198
2.d	d. Recycling Collection	\$504,550	\$519,686	\$535,277	\$551,335	\$567,875
2.d.1	Curbside					
2.d.2	Drop-off	\$504,550	\$519,686	\$535,277	\$551,335	\$567,875
2.d.3	Combined Curbside/Drop-off					
2.d.4	Multi-family					
2.d.5	Business/Institutional					
2.d.6	Other					
2.e	e. Special Collections	\$0	\$0	\$0	\$0	\$0
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					
2.f	f. Yard Waste/Other Organics					
2.g	g. Education/Awareness	\$130,218	\$134,423	\$138,774	\$143,278	\$147,940
2.g.1	Education Staff	\$120,127	\$124,332	\$128,683	\$133,187	\$137,849
2.g.2	Advertisement/Promotion	\$10,091	\$10,091	\$10,091	\$10,091	\$10,091
2.g.3	Other					
2.h	h. Recycling Market Development	\$0	\$0	\$0	\$0	\$0
2.h.1	General Market Development Activities					
2.h.2	ODNR pass-through grant					
2.i	i. Service Contracts					
2.j	j. Feasibility Studies					
2.k	k. Waste Assessments/Audits					
2.l	l. Dump Cleanup					
2.m	m. Litter Collection/Education					
2.n	n. Emergency Debris Management					
2.o	o. Loan Payment					
2.p	p. Other					
3	3. Health Dept. Enforcement	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
	<i>Health Department Name: Richland County</i>	\$8,500	\$8,500	\$8,500	\$8,500	\$8,500
4	4. County Assistance	\$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
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
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		\$1,699,602	\$1,755,438	\$1,813,138	\$1,889,155	\$1,961,701

B.3 Landfill Closure/Post-Closure

The Authority maintenance and monitoring includes wages and benefits for approximately 2.5 FTE employees and equipment maintenance and fuel for the equipment necessary to maintain the closed landfill. This line also includes payment for outside services for maintenance and remediation that does not fall under the consulting, monitoring and engineering contract. In the past, maintaining landfill has been an unpredictable expense. There are years that only require routine maintenance and monitoring but then there are years that have human health and environmental concerns arise that need attention. Often immediately. The landfill line item has been estimated on the higher side to account for the potential of unforeseen needs.

B.4 Recycling Collection

B.4.a Drop-off

The expense includes the contract for picking-up the recycling bins and sorting and processing the materials that are collected. The Authority receives revenue from the sale of the recyclables. Also included are the expenses for wages and benefits for ½ FTE Authority employee and use of an Authority owned vehicle for monitoring the bins, repair and maintenance of the bins which are owned by the Authority, fuel costs and other miscellaneous expenses required to maintain the 14 full-time drop-off locations and the drop-off at the Air National Guard facility in Mansfield.

SCRAP Trailer: The expense includes the wages and benefits of 2 employees who spend the equivalent of one FTE on staffing the scrap trailer. Vehicle maintenance, fuel, and other miscellaneous expenses are included. The revenue from the sale of the materials is remitted by the scrap processor directly back to the school or organization that sponsors the scrap trailer site and is not included in the revenue or expenses listed in this Plan.

Mid-Ohio Recycling Facility includes appliance, electronics, tires, and household recyclables and cost related to the government/institution/commercial collection route: The expense includes utilities and maintenance for the collection and storage portion of the facility, the wages and benefits for approximately 2 FTE employees, vehicle expenses including fuel for the collection route and for transporting recyclables to processors.

B.4.b Business/Institutional

The cost of operating the collection route for small businesses and government offices is included in the costs to operate the Mid-Ohio Recycling Facility.

B.5 Special Collections

These items are included in the cost for operating the Mid-Ohio Recycling Facility.

B.6 Education/Awareness

Expense includes utilities and maintenance for the educational class room , office space and storage for the education program, the wages and benefits of the education coordinator, educational materials including books, videos, and supplies for hands-on learning experiences, promotional materials, web site creation and maintenance, registration fees for exhibits and events, contest prizes, printed materials like the annual

contest winner calendar, and paid advertising to promote the drop-off program, the scrap trailer, and special recycling events.

B.7 Dump Cleanup

Illegal dump-site clean-up: Expenses include the cost of a less than ½ FTE plus equipment related costs and disposal costs.

If additional funding is available, RCRSWMA is looking to reintroduce a program that partnered the Authority with the County Sheriff's office. Through this partnership, a Deputy Sheriff would be assigned to patrol for and respond to litter complaints. This position would focus on roadside litter clean up and enforcing Richland County's litter laws. The Deputy could also report open dumping to the Health Department and Ohio EPA as appropriate.

C. Health Dept. Enforcement

Richland Public Health: The Authority provides funds to the Richland County Health Department that are intended to help them administer the solid waste program in Richland County. Areas of the solid waste program that the Authority helps fund include inspections at the landfill, tire facilities, compost facilities, etc., trash haulers inspection and registration, and dump site investigations.

D. County Assistance

D.1 Maintaining Roads

An annual budgeted amount for this program is not being proposed but if a request for funding is submitted to the Authority under this program the Board may consider the request. If a determination is made to provide the funding, the dollars will come from the Authority's reserve funds. All requests will be based on budgetary availability. Approval of road repair funding will require a minimum reserve of \$1.25 million in the Authority's budget and not exceed \$150,000 per year.

Table O-8 Budget Summary

Year	Revenue	Expenses	Annual Surplus/Deficit (\$)	Balance (\$)
2011	Ending Balance			\$909,445
2012	\$1,286,962	\$1,671,379	-\$384,417	\$525,028
2013	\$1,408,871	\$1,181,516	\$227,354	\$752,383
2014	\$1,416,935	\$1,060,984	\$355,951	\$1,108,334
2015	\$1,217,555	\$1,481,325	-\$263,770	\$844,564
2016	\$1,436,025	\$1,507,831	-\$71,806	\$772,757
2017	\$1,568,358	\$1,237,996	\$330,362	\$1,103,119
2018	\$1,637,354	\$1,122,361	\$514,993	\$1,618,112
2019	\$1,421,634	\$1,222,976	\$198,658	\$1,816,771
2020	\$1,457,958	\$1,231,395	\$226,563	\$2,043,334

Year	Revenue	Expenses	Annual Surplus/Deficit (\$)	Balance (\$)
2021	\$1,495,953	\$1,271,611	\$224,343	\$2,267,676
2022	\$1,535,631	\$1,313,167	\$222,463	\$2,490,140
2023	\$1,577,006	\$1,371,559	\$205,446	\$2,695,586
2024	\$1,620,099	\$1,426,233	\$193,866	\$2,889,452
2025	\$1,664,937	\$1,446,337	\$218,600	\$3,108,052
2026	\$1,711,550	\$1,493,721	\$217,829	\$3,325,881
2027	\$1,711,550	\$1,542,685	\$168,865	\$3,494,746
2028	\$1,711,550	\$1,609,197	\$102,353	\$3,597,099
2029	\$1,711,550	\$1,672,093	\$39,458	\$3,636,557
2030	\$1,711,550	\$1,699,602	\$11,948	\$3,648,505
2031	\$1,711,550	\$1,755,438	-\$43,888	\$3,604,617
2032	\$1,711,550	\$1,813,138	-\$101,587	\$3,503,030
2033	\$1,711,550	\$1,889,155	-\$177,605	\$3,325,425
2034	\$1,711,550	\$1,961,701	-\$250,151	\$3,075,274

The RCRSWMA started the 2016 reference year with a carry-over balance of \$772,757. Based on revenue and expenditure projections discussed throughout this appendix, the Authority is expected to begin the planning period in 2020 with an estimated carry-over balance of \$2,043,334 and end the planning period with a carry-over balance of \$3,075,274. Ample funding is projected to be available to finance the implementation of this plan update along with some contingency dollars for work at the Closed Richland County Landfill. Table O-8 presents a summary of the Authority's budget, including revenue, expenditures, and fund balance.

3. Alternative Budget

A. Contingent Funding

The OEPA requires the RCRSWMA to provide a contingent source of funding if the funding mechanism used has a high degree of uncertainty.

The primary funding source for the RCRSWMA is the generation fee. This is a dependable fee because it is collected on the waste generated in Richland County. The same fee is collected if the waste is disposed of in-district or if it is taken out of district for disposal.

The only revenue source that is somewhat uncertain is the contractual per ton fee paid by the Noble Road Landfill. The fee is paid on out-of-district and out-of-state waste. If the landfill were to cease operation for any reason, RCRSWMA will not receive the projected annual contract fee revenue (See Table O-3). It would not be feasible for the Authority to make program cuts that would allow the Authority to implement this Plan without an increase in other revenues. It is important that the Authority closely monitor the contract revenue and keep in contact with the landfill owners and operators to access any conditions which might severely reduce contract fee revenue. It is also important that the Authority maintain a reasonable fund balance to provide

some cushion for unexpected costs or unexpected drops in revenue. The Authority believes that the carry-over projected in this Plan is appropriate.

If the Authority Board of Directors identifies a short-fall in the Authority's revenue that threatens the Authority's ability to implement programs that are required in this Plan, the Authority Board of Directors will initiate the process to raise the generation fee to an amount that will allow the Authority to implement the Plan. Any increase in the generation fee that is not included in this Plan and ratified as part of the Plan ratification process will require ratification before it is implemented.

There is one specific circumstance which could jeopardize the contract fee revenue. The Ohio EPA's facility data report published in 2018 projects that the remaining life of the Noble Road landfill to be 5.3 years as of the end of 2017. If the Landfill does not receive a landfill expansion permit, the facility would close in 2023. However, Rumpke is actively pursuing the necessary expansion permit to remain open and the Authority believes that it will be in place sometime in 2019.

As long as the Noble Road landfill is issued the expansion permit, the Authority does not see any additional changes to the fee structure for the RCRSWMA. However, if the permit, for some reason, is not issued by January 1, 2023, the Authority will increase the generation fee by an additional \$4.75 per ton of waste generated. This increase is in addition to the proposed schedule for generation fee increase

APPENDIX P DESIGNATION



1. Statement Authorizing/Precluding 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.¹

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

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

Once the board of directors designates facilities, only designated facilities can receive the SWMD's waste. In more explicit terms, no one can legally take waste from the SWMD to undesignated facilities and undesignated facilities cannot legally accept waste from the SWMD. The only exception is when the board of directors grants a waiver to allow an undesignated facility to take the SWMD's waste. Ohio law prescribes the criteria that the board must consider when deciding whether to grant a waiver and the time period available to the board for making a decision on a waiver request.

A. Authorization Statement to Designate

The Board of Directors of the Richland County Regional Solid Waste Management Authority is hereby authorized to establish facility designations in accordance with ORC Section 343.014 of the Ohio Revised Code after this plan has been approved by the director of the Ohio Environmental Protection Agency.

B. Description of the SWMD's Designation Process

Decisions regarding designation or the granting of a designation waiver shall be made by the Authority, following a review of the request by the Board of Directors.

Where the Authority designates facilities, it may grant a waiver to a non-designated entity to provide solid waste disposal, transfer or resource recovery facilities or activities at any time after the plan update is approved and in accordance with the criteria specified in ORC 343.01(I)(2). The Board of Directors will evaluate each request for designation or waiver based upon, at least, the following general criteria:

- The facility's compatibility with the Authority's Solid Waste Management Plan.
- The facility's compliance with all rules promulgated by the Authority and the Authority's Solid Waste Management Plan.

2. Designated Facilities

At the present time, the Richland County Regional Solid Waste Management Authority has not designated facilities to which RCRSWMA waste must be taken. However, RCRSWMA reserves the right to designate a facility or facilities.

Waiver Process for Undesignated Facilities

If the RCRSWMA establishes facility designation and in the event that any person wants to use a facility, other than a designated facility, for the disposal of municipal solid waste, the person must submit a written request for a waiver of designation to the Board of Directors of the Richland County Regional Solid Waste Management Authority. The request must state the type and amount of material, the facility to be used, the intended duration of the waiver, and the reason for requesting the waiver.

The RCRSWMA staff will review the request and may request additional information if necessary. The Board of Directors will act on the request for a waiver within 90 days after receiving the request. The Board of Directors may grant the request for a waiver if the Board of Directors determines that:

- Issuance of the waiver is not inconsistent with projections contained in the RCRSWMA's approved plan under Section 3734.53 (A) (6) and (A) (7); and
- Issuance of the waiver will not adversely affect implementation and financing of the RCRSWMA's approved plan.

APPENDIX Q DISTRICT RULES



1. Existing Rules

The Richland County Regional Solid Waste Management Authority does not have any rules at this time.

2. Proposed Rules

After this updated plan has been approved by the Director of the Ohio Environmental Protection Agency, the Richland County Regional Solid Waste Management Authority may, as the RCRSWMA deems appropriate, adopt the rules necessary to implement the ratified and approved Solid Waste Management Plan. Since changes may occur during the planning period, the RCRSWMA reserves for the Board of Directors the power to make and enforce rules to the fullest extent authorized by Ohio law.

The Ohio Revised Code, Section 343.01 (G) gives solid waste districts the authority to adopt, publish and enforce rules to the extent authorized by the solid waste management plan of the district approved under section 3734.521 or 3734.55 of the Revised Code or subsequent amended plans of the district approved under section 3734.521 or 3734.56 of the Revised Code.

This plan authorizes the Richland County Regional Solid Waste Management Authority to adopt, publish and enforce rules doing any of the following:

- A. Prohibiting or limiting the receipt of solid waste generated outside the district or outside a service area prescribed in the solid waste management plan or amended plan, at facilities covered by the plan.
- B. Governing the maintenance, protection, and use of solid waste collection or other solid waste facilities located within its district.
- C. Governing the development and implementation of a program for the inspection of solid waste generated outside the boundaries of this state that are disposed of at solid waste facilities included in the district's solid waste management plan or amended plan.
- D. Exempting the owner or operator of any existing or proposed solid waste facility provided for in the plan or amended plan from compliance with any amendment to a township zoning resolution.

Section 343.01 of the ORC includes additional language that further defines the limits of the rules, which may be promulgated in the four areas listed above.

In order to adopt rules deemed necessary in the future, the Authority Board of Directors will use the following procedures:

- A. The Authority will draft rules as needed.
- B. Upon completion, the Board will mail copies of the rules to the Richland County Board of Commissioners and other interested parties.
- C. The Board will issue a public notice announcing the availability of the rules for review in the newspaper of greatest circulation in the county. The notice will include the date by which comments on the rules must be received and the dates, times and location of public hearings on the rules. The public comment period on the rules will extend at least thirty days from the date of the public notice.
- D. The Board will hold at least one public hearing on the proposed rule or rules.

- E. After the hearing/s and public comment, the Board will revise the proposed rules as necessary. If the Board determines that significant revisions have occurred, the Board will hold another public hearing.
- F. The Board will adopt the rules following any revisions at a regular meeting or a special meeting designated for rule adoption. Rules will be adopted by resolution approved by a majority of the quorum of the Board.
- G. Upon adoption, a copy of the rules will be mailed to the Richland County Commissioners and to the Ohio Environmental Protection Agency. The rule may be mailed to interested parties that have been identified during the comment and public hearing period.

APPENDIX R
BLANK SURVEY FORMS AND RELATED INFORMATION





Dear Ohio Business:

The Richland County Solid Waste Authority invites you to participate in a statewide recycling survey. The purpose of this survey is to collect data on the amounts and types of materials commercial and industrial businesses recycled in Ohio in 2018. The Richland County Solid Waste Authority is required to document its recycling efforts in an annual report to Ohio EPA. The Authority uses the data it receives through surveys to complete that report. By submitting data, your business can help the Richland County Solid Waste Authority meet its reporting requirements. Your data will also help the Authority track its progress towards meeting local and state recycling goals.

Why is your business being surveyed?

Your business is in the Richland County Solid Waste Authority. The Authority facilitates recycling and reduction efforts for commercial and industrial businesses, institutions, residents, and schools. To identify the programs that make the most sense and determine whether programs are achieving intended results, the Richland County Solid Waste Authority needs to know what and how much material was recycled.

Your completed survey will help the Richland County Solid Waste Authority better understand recycling in the business community in Richland County. Submitting a completed survey also allows your business to connect directly with the Authority, which may be able to assist your company with its recycling needs.

What happens to my data?

The Richland County Solid Waste Authority will combine your data with data it receives from other businesses and submit the combined data in its annual report to Ohio EPA. Ohio EPA will use the data to calculate recycling rates for the Authority. Ohio EPA will also combine the data reported by all solid waste management districts to calculate a recycling rate for Ohio.

Who do I contact for more information?

Please contact Haley Rowe-Frager, the Richland County Solid Waste Authority's consultant, with any questions regarding the survey. Haley can be reached at 419-891-2222 or HRowe@manniksmithgroup.com.

Please complete and return the survey to Haley Rowe-Frager by 3/1/2019.

Thank you for your time and participation.

Sincerely,

Ken Bender



Dear Commercial Business,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Richland County Solid Waste Authority'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 Richland County Solid Waste Authority and Ohio in 2018. 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 Haley Rowe-Frager, the Richland County Solid Waste Authority's consultant, at HRowe@manniksmithgroup.com or 419-891-2222.

Please complete and submit this survey no later than 3/1/2019.

Options for Returning the Completed Survey

- Email directly to Haley Rowe at HRowe@manniksmithgroup.com, Subject Line: 2018 Commercial Survey
- Fax to (419) 891-1595, Attention: Haley Rowe-Frager
- Mail to Haley Rowe-Frager at 1800 Indian Wood Circle, Maumee, OH 43537

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 Richland Co. Regional Solid Waste Mgt. Authority 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.

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 Richland County Solid Waste Authority may also be able to provide you with assistance.

Table B: Quantities of Recycled Materials			
Recyclable Material Category	Amount Recycled in 2018	Units	Name of hauler or processor that takes the material/ other Comments
Lead-Acid Batteries		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Food		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Glass		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Ferrous Metals		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Non-Ferrous Metals		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Corrugated Cardboard		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
All Other Paper		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Plastics		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Textiles		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Wood		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Rubber		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Commingled		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Yard Waste		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
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Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
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Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	

Table C: Please provide any additional information, comments, suggestions, questions etc.

Thank you again for taking the time to complete this survey. Please contact Haley Rowe with any questions.

Haley Rowe-Frager, Environmental Scientist
 Consultant to the Richland County Solid Waste Authority

Phone: 419-891-2222

Email: HRowe@manniksmithgroup.com

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.



Dear Industrial Facility,

Thank you for completing this survey. The information you provide for your company is crucial to monitoring the Richland County Solid Waste Authority'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 Richland County Solid Waste Authority and Ohio, in 2018. Your company's survey response **will not** be reported individually; all data will be summarized by each North American Industry Classification System (NAICS) category.

For assistance completing this form or any questions related to the survey, please contact Haley Rowe-Frager, the Richland County Solid Waste Authority's consultant, at HRowe@manniksmithgroup.com or 419-891-2222.

Please complete and submit this survey no later than 3/1/2019.

Options for Returning the Completed Survey

- Email directly to Haley Rowe at HRowe@manniksmithgroup.com, Subject Line: 2018 Industrial Survey
- Fax to (419) 891-1595, Attention: Haley Rowe-Frager
- Mail to Haley Rowe-Frager at 1800 Indian Wood Circle, Maumee, OH 43537

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 Richland Co. Regional Solid Waste Mgt. Authority to contact you in the future to discuss your recycling needs.

Table A: Company Information			
Name:		County:	
Address:		City:	Zip:
Contact Person:		Title:	
Email:		Telephone Number (include area code): () —	
Primary NAICS:	Secondary NAICS:	Number of full-time employees:	
Would you like to be contacted by your local solid waste management district for recycling assistance? <input type="checkbox"/> Yes <input type="checkbox"/> No			

Instructions for completing Table B:

Table B provides a list of common materials that are recycled by industrial facilities 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 facility recycles a material that is not listed in **Table B**, please enter the name and quantity of that material on a line labeled “Other.” Some materials may not apply to your operation; simply enter “0” for those materials. Some of the materials are listed in broad categories. For example, “Plastics” include plastics #1-7, plastic films, etc. Please refer to the “**Materials Cheat Sheet**” attached to the end of this document for examples of materials and definitions.

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 Richland County Solid Waste Authority may also be able to provide you with assistance.

Table B: Quantities of Recycled Materials			
Recyclable Material Category	Amount Recycled in 2018	Units	Name of hauler or processor that takes the material/other comments
Food		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Glass		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Ferrous Metals		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Non-Ferrous Metals		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Corrugated Cardboard		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
All Other Paper		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Plastics		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Textiles		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Wood		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Rubber		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Commingled		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Ash (recycled ash)		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Non-Excluded		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Flue Gas		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	
Other:		<input type="checkbox"/> lbs. <input type="checkbox"/> tons <input type="checkbox"/>	

Table C: Please provide any additional information, comments, suggestions, questions etc.

Thank you again for taking the time to complete this survey. Please contact Haley Rowe with any questions.

Haley Rowe-Frager, Environmental Scientist
 Consultant to the Richland County Solid Waste Authority
 Phone: 419-891-2000

Email: HRowe@manniksmithgroup.com

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
- Electronics
- Non-hazardous chemicals (solids only)
- Stone/Clay/Sand
- Yard Waste
- Sludge
- Tires
- 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 S

SITING STRATEGY



The RCRSWMA does not plan to site or build any RCRSWMA owned or financed solid waste transfer or disposal facilities during the planning period. The RCRSWMA does not plan to site any privately owned transfer or solid waste disposal facilities to serve RCRSWMA needs.

If a private owner decides to site a waste disposal facility or transfer station in Richland County, which requires a permit, the RCRSWMA will review the permit applications that are submitted to Ohio EPA and will actively participate in the public review and comment process. RCRSWMA has chosen not to include a siting strategy in this plan because the RCRSWMA does not believe that it has the necessary authority to approve or deny facility siting.

The RCRSWMA does not believe that a formal siting process is necessary for facilities that do not require solid waste facility permits, like recycling facilities. These facilities are subject to local zoning and building regulations and should be treated like other manufacturing and processing facilities.

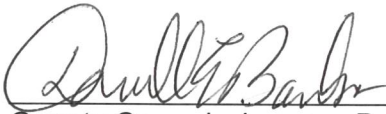
APPENDIX T
MISCELLANEOUS PLAN DOCUMENTS



Certification Statement for the Draft Plan

For the Richland Co. Regional Solid Waste Management Authority:

We as representatives of the board of trustees for the Richland County Regional Solid Waste Management Authority (Authority) do hereby certify that to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the Authority's solid waste management plan (Plan) are accurate and are in compliance with the requirements in the *District Solid Waste Management Plan Format*, version 4.0, the *2009 State Solid Waste Management Plan*, and the Ohio Revised Code.



County Commissioner or Designee

3/12/2020
Date Signed

Municipal Officer or Designee

Date Signed



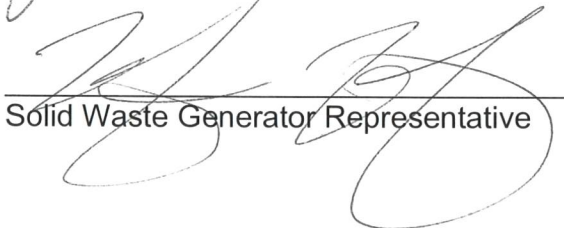
Township Representative

2-12-2020
Date Signed



Health Commissioner or Designee

2/12/20
Date Signed



Solid Waste Generator Representative

2-12-20
Date Signed

Member Representing General Interests of Citizens

Date Signed



Public Representative

2/12/2020
Date Signed

APPENDIX U RATIFICATION RESULTS

