Richland County Regional Solid Waste Management Authority

June 2026

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1. Solid Waste Management District Information

Table 1.1 Solid Waste Management District Information

SWMD Name	Richland County Regional Solid Waste Management Authority
Member Counties	Richland
Coordinator Name (main contact)	Eddie Hale
Job Title	Executive Director
Street Address	1125 National Parkway
City, State, Zip Code	Mansfield, Ohio 44906
Phone	419-774-5861
Fax	419-774-6330
E-mail address	ehale@richlandrecycles.com
Webpage	http://www.richlandrecycles.com

Table 1.2 Members of the Policy Committee/Board of Trustees

Member Name	Representing
Richland	
Darrell Banks	County Commissioners
Jodie Perry	Municipal Corporations
Jack Butler	Townships
Joe Harrod	Health District
Allen Wheeler	Generators
Terry Thompson	Citizens
Larry Weirich	Public

Table 1.3 Chairperson of the Policy Committee or Board of Trustees

Name	Jodie Perry
Street Address	30 North Diamond St
City, State, Zip Code	Mansfield, Ohio 44902
Phone	419-755-9626
Fax	
E-mail address	jperry@ci.mansfield.oh.us

Table 1.4 Board of County Commissioners/Board of Directors

Commissioner Name	County
Darrell Banks	Richland
Cliff Mears	Richland
Tony Vero	Richland

Technical Advisory Committee

None

Plan Preparation Consultant

The Mannik & Smith Group, Inc.
1800 Indian Wood Circle
Maumee, Ohio 43537

2. Executive Summary

Introduction

The Richland County Regional Solid Waste Management Authority (Richland County Solid Waste or RCSW) is charged with responsibly handling solid waste disposal within Richland County. Richland County Solid Waste is governed by a board of trustees and was formed as a single-county district in 1988. RCSW is dedicated to promoting recycling, waste reduction, and responsible disposal of all waste from households, retail establishments, industry, and schools. Promoting the diversion of solid waste from landfills is a major emphasis and RCSW offers numerous recycling programs to assist in this effort.

The Solid Waste Management Plan

This Solid Waste Management Plan Update ("Plan") is a regulatory document overseen by the Ohio Environmental Protection Agency ("Ohio EPA") and serves as a roadmap for Richland County to reduce its reliance on landfills and to manage the solid waste generated in the County. The Plan is updated every five years, describes the waste reduction and diversion programming that will be undertaken during the planning period, and demonstrates that these programs are adequate to achieve the Plan's goals. To update the prior plan ratified in 2020, the SWMD reviewed existing programs and services, recycling infrastructure, recovery efforts, and finances, as per Ohio EPA requirements.

To advance the Plan document to ratification, RCSW developed conclusions about the strengths and weaknesses of the Plan and worked with the board of trustees to demonstrate that programs and services will meet the needs of Richland County.

Ohio Revised Code (ORC) 3734.53 and Ohio Administrative Code (OAC) Rule 3745-27-90 specify the contents of a solid waste management plan. The Ohio EPA prescribes a District Solid Waste Management Plan Format that requires a series of Appendices.

Meeting State Goals

The State Solid Waste Management Plan establishes 10 goals designed to further waste reduction and recycling in Ohio. Goals 1 and 2 are considered the primary goals for SWMDs. The state plan encourages SWMDs to attempt to achieve both goals, they are only required to demonstrate compliance with either Goal 1 or Goal 2, not both.

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

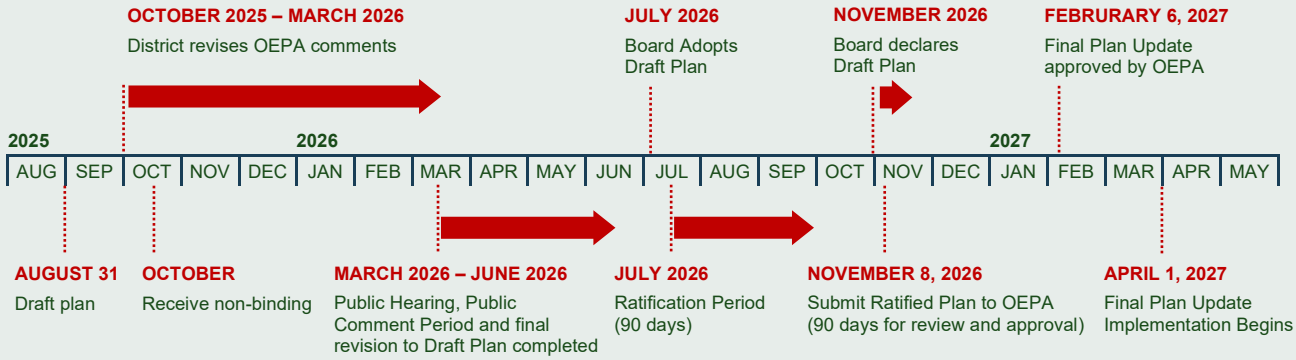
- ▷ RCSW has shown 84% of the residents of Richland County have access to recycling opportunities. This is mainly achieved through the drop-off program. Additionally, Richland County has adequate access to landfills for disposal, enough to serve the county's needs over the plan timeline (2027-2041).

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

- ▷ Based on the analysis, the Richland County's recycling rate through the planning period (2027-2041) is about 22%.

RCSW has demonstrated achievement for Goal #1 of the State Solid Waste Plan. The achievement of Goal #2 is very close. RCSW will work diligently through the planning period to exceed the projections and meet Goal #2.

Timeline



*This timeline is not final and subject to change.

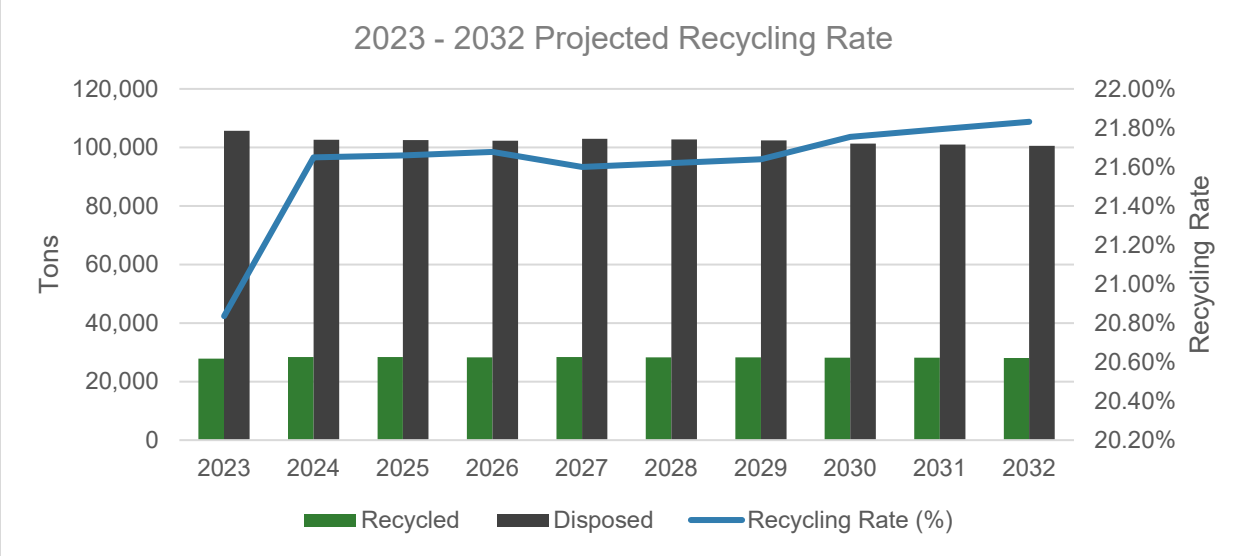
Key Facts

Between 2018 and 2023:

- ▷ Disposal of residential/Commercial waste has increased by about **2,700 tons annually**
- ▷ Recycling has increased by about **2,800 tons annually**

RCSW Provides Sufficient Collection, Recycling, Composting, and Disposal Capacity

3 communities with subscription curbside recycling services	Noble Road Landfill with over 25 years of useful life	2 composting facilities
36 recycling drop-off locations throughout Richland County	RCSW Recycling Facility	

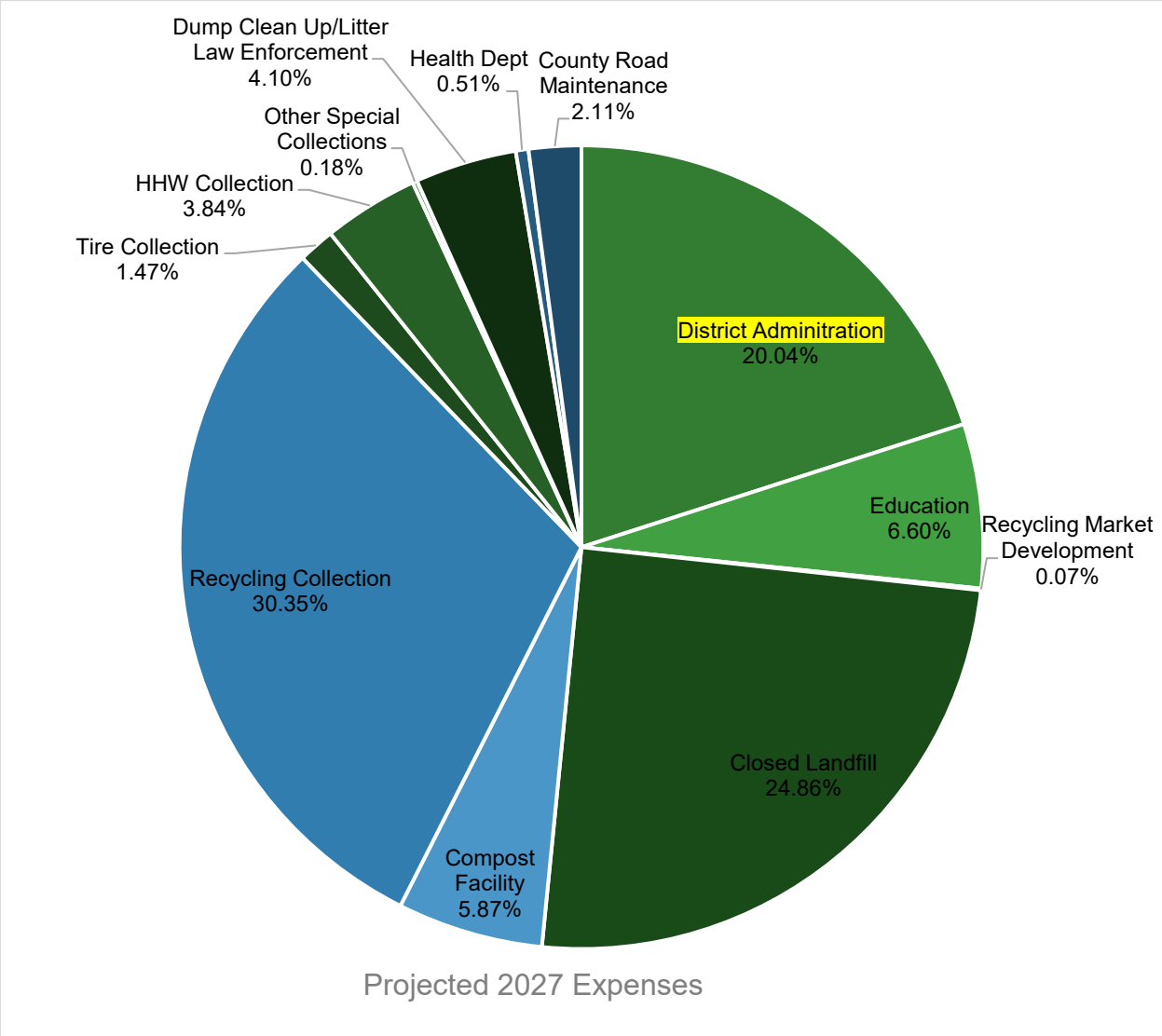


Sufficient Disposal Capacity

Noble Road Landfill accounts for 92 percent of the waste disposed of by Richland County. Noble Road has over 25 years of useful life, providing more than enough capacity to serve RCSW's needs over the planning period (2027-2041).

Budget

The SWMD funds programs that are consistent with the 10 allowable uses, as determined by the Ohio EPA. These programs include education, specialty waste management, administration, and others as shown in the Projected 2027 SWMD Expenses chart. RCSW is planning a generation fee increase from $7.50/ton to $8.50/ton in 2032 to support future programming.



Projected 2027 Expenses

Findings and Next Steps

RCSW is presently complying with the regulations and requirements set forth by the Ohio EPA. Additionally, RCSW is committed to remaining in compliance with the Ohio EPA guidelines throughout the planning period. Landfills serving Richland County have disposal capacity to serve the County's needs through 2041 and there is sufficient infrastructure to meet SWMD's recycling needs.

To support programming that assists in the responsible management of solid waste within Richland County, RCSW is planning to increase generation fees by $1.00 in 2032.

The following steps are selected actions generated by RCSW that will be pursued during the upcoming planning period:

Drop-off Collection

- ▷ Continue to maintain the drop-off locations.
- ▷ Partner with local communities to determine if additional drop-off locations are warranted.

Commercial Sector

- ▷ Promote the Richland County Collection/Recycling Facility to the commercial sector.

Industrial Sector

- ▷ Target 5 industrial businesses annually to provide education on diversion options.

Environmental Deputy

- ▷ Attend township meetings in an effort to make communities aware of RCSW programs.
- ▷ Offer classroom presentations to Richland County Schools.

Collection Events

- ▷ Continue to find community partners willing to assist RCSW host collection events

Financial Analysis

- ▷ Increase generation fee in 2032 to support proposed programming

Electronics Recycling

- ▷ Promote the electronics recycling program at the Richland County Collection/Recycling Center

Additional Information

A full version of the Richland County Solid Waste Management Plan along with other program specifics can be found at https://www.richlandrecycles.com/

Appendix A
Miscellaneous Information

Appendix A Miscellaneous Information

1. Reference Year
2. Planning Period
3. Goal Statement
4. Material Change in Circumstances
5. Explanations of Differences in Data

1. **Reference Year**

   The reference year for this solid waste management plan is 2023

2. **Planning Period (first and last years)**

   The planning period for this solid waste management plan is 2027 to 2041

3. **Goal Statement**

   The SWMD will achieve the following Goal(s): Goal 1

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

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

   In the reference year ADR it appears that the comingled recyclable collected by Rumpke were counted as part of the Industrial Waste Reduction, but their NAICS number (562000) puts them in the Residential category. For this Solid Waste Management Plan update Rumpke's recycling information has been reported as Commercial/ Residential.

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

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

   Differences in residential recycling infrastructure between the annual district report and the solid waste management plan.

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

5. **Material Change in Circumstances/Contingencies**

   Ohio law [ORC Section 3734.56(D)] requires the District Board of Directors (in this case RCSW's Board of Trustees) to update a district plan when they determine 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 affected by 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 RCSW modifies any other portion of the plan, they must update the entire plan. Moreover, the updated plan must be ratified, submitted to Ohio EPA, and obtain Ohio EPA's approval prior to becoming effective.

   RCSW will use its normal operational procedures to monitor plan implementation and determine whether and when a material change in circumstances has occurred in RCSW's jurisdiction, which requires a plan amendment. RCSW Board of Trustees meets at least quarterly to receive updates on the implementation of the Plan. RCSW reviews

implementation of the plan annually. The Board of Trustees meets frequently enough to detect and respond to changing circumstances.

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

- a reduction in the available capacity of the publicly-available landfills used for disposal of solid waste generated in Richland County (see 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 Richland County that is disposed of in landfills;
- changes in strategies for waste reduction or recycling including the closing of facilities or the discontinuation of a service or services which will result in RCSW not providing 80% recycling access as required to meet Goal #1of the State Plan.
- a decrease in revenue causing inadequate funding to maintain the programs; or
- a delay of more than six months in the implementation of programs and/or activities included in the Schedule of Facilities and Programs of this plan.

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 RCSW'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 RCSW's staff for additional analysis or for preliminary recommendation.

Unless the Board formally extends this period, the Board will make a determination within 90 days of adding the matter to its agenda, on whether to prepare a plan amendment, 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 the Board of Trustees recommends a plan amendment, they will prepare the plan amendment to address the material change of circumstances, with the assistance of any standing or special committees, as appropriate. Depending upon the extent of the amendment required to address the change in circumstances, the Board of Trustees will establish the schedule for development of the plan amendment, approval, ratification, and implementation. 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

Appendix B Recycling Infrastructure Inventory

1. Curbside Recycling Services
2. Drop-Off Recycling Locations
3. Mixed Solid Waste Materials Recovery Facilities
4. Curbside Recycling and Trash Collection Service Providers
5. Composting Facilities
6. Other Food Waste and Yard Waste Management Programs

1. Curbside Recycling Services

Table B1-A Inventory of Non-Subscription Curbside Recycling Services Available in the Reference Year

ID #	Name of Curbside Service	Service Provider	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	Village of Shiloh	Rumpke	Contract between Shiloh and Rumpke	weekly	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Single Stream	N	amounts are reported with Rumpke totals for Richland County	N

Due to a misunderstanding during leadership transition for RCSW, this program was not in places as previously understood. We are correcting the plan as part of this update and eliminating the curbside service.

Table B1-B Inventory of Subscription Curbside Recycling Services Available in the Reference Year

ID #	Name of Curbside Service	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)
SC1	Rumpke - Mansfield	Private Hauler	weekly	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Single stream	Y	amounts are reported with Rumpke totals for Richland County	Y
SC2	Rumpke - Lexington	Private Hauler	weekly	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Single stream	Y	amounts are reported with Rumpke totals for Richland County	Y
SC3	Rumpke - Ontario	Private Hauler	Weekly	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Single stream	Y	amounts are reported with Rumpke totals for Richland County	Y

Rumpke offers curbside recycling as an option for residential waste collection customers in Mansfield, Lexington and Ontario. Residents can add this service to the regular waste collection service for an additional fee.

2. Drop-Off Recycling Locations

Table B2-A Inventory of Full-Time, Urban Drop-off Sites Available in the Reference Year

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days/Hours Available to the Public	Materials Collected[(1)]	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Through out Planning Period (Y/N)
FTU1	Bellville/ Jefferson Township Garage	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTU2	Jackson Township Garage	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTU3	Lexington Village Maintenance Garage	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTU4	Mifflin Township Fire Department	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTU5	Sharon Township Garage	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTU6	RCSW Recycling Facility	RCSW	Drop-Off	Tuesday – Saturday 8AM - 4PM	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported through surveys	Y

ID#	Name of Drop-off Site	Service Provider	How Service is Provided	Days/Hours Available to the Public	Materials Collected[1]	Drop-off Meets All Minimum Standards (Y/N)	Weight of Materials Collected from SWMD (tons)	Service will Continue Through out Planning Period (Y/N)
FTU7	Springfield Township	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTU8	BlueScope Recycling	BlueScope	Private Hauler	Monday - Friday 8AM - 5PM Saturday 8AM - 12PM	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported through surveys	Y

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

In addition to the six 24/7 drop-off locations, RCSW 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 4:00 PM. Materials accepted at this facility include everything that can be recycled at the drop-off locations and electronics, appliances and tires. A fee is charged for some difficult to manage items.

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

A Richland County Map showing the locations of the full-time urban drop-off locations is located in Appendix W.

Table B2-B Inventory of Part-Time, Urban Drop-off Sites Available in the Reference Year

ID#	Name of Drop-off Site	Service Provider	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 SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU1	Eastview Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	1st Monday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU2	Malabar Middle School SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	1st Tuesday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU3	Madison Jr. High SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	1st Wednesday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU4	Discovery School SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	1st Thursday 1PM to 3PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU5	St. Mary's School - Mansfield Scrap Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	2nd Monday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU6	Shelby Central School SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	2nd Tuesday 3rd Wednesday 4th Tuesday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU7	Brinkerhoff Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	2nd Wednesday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y

ID#	Name of Drop-off Site	Service Provider	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 SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU8	St. Peters Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	2nd Friday 10AM to 11AM 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU9	Madison South Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	3rd Monday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU10	Prospect Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	3rd Tuesday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU11	Mifflin School SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	3rd Friday 12PM to 2PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU12	Mansfield Christian SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	4th Monday 10AM to 11AM 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU13	Woodland Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	4th Thursday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU14	St. Mary's School - Shelby SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	4th Friday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTU15	Ontario United Methodist SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	4th Friday – Monday	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y

ID#	Name of Drop-off Site	Service Provider	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 SWMD (tons)	Service will Continue Throughout Planning Period (Y/N)
PTU16	Ohio Bird Sanctuary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	Once a month From 1PM to 3PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTR1	Western Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	2nd Thursday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTR2	Eastern Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	1st Friday 2PM to 4PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTR3	Crestview High School SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	3rd Thursday 9:30AM to 12:30PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y
PTR4	Butler Elementary SCRAP Trailer	RCSW/ BlueScope	RCSW Partnership with BlueScope	4th Wednesday 11AM to 1PM	#1 & #2 plastics; aluminum cans; metal cans; newspaper; flattened cardboard	Y	Amounts are reported as a program total	Y

S.C.R.A.P. stands for Schools and Communities Recycling as Partners. BlueScope Recycling generously sponsors the SCRAP Trailer program. Richland County Solid Waste owns and operates the trailer. They use the SCRAP Trailer to collect recyclables at schools in Lexington, Madison, Mansfield and Shelby giving students, parents and neighbors the chance to recycle newspaper; cardboard; #1 and #2 plastic; aluminum soda pop cans and bi-metal cans (such as soup cans). The participating schools receive the money raised from the sale of the recyclables. In the reference year, 2016, there were 20 organizations participating in the SCRAP Trailer program. Some of these locations are rural, but they are included in this list because they are all part of the same RCSW program.

A Richland County Map showing the locations of the part-time rural drop-off locations is located in Appendix W.

Table B2-C Inventory of Full-Time, Rural Drop-off Sites Available in the Reference Year

ID#	Name of Drop-off Site	Service Provider	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	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTR2	Butler Village Garage	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTR3	Crestview High School, Weller Twp	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTR4	Lucas Village, Monroe Township	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTR5	Plymouth Township Garage	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTR6	Plymouth High School	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTR7	Weller Township Garage	Rumpke	RCSW Contract with Rumpke	24 Hours a day 7 Days a Week 365 Days a Year	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y
FTU8	Ohio National Guard	Rumpke	Private Hauler	only open to ANG	Paper; cardboard; plastic #1 & #2; aluminum; steel; glass	Y	amounts reported with Rumpke totals	Y

RCSW 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. A private contractor services the recycling bins. The contractor routinely collects the recyclables to process and market the materials. RCSW monitors the drop-off locations to assure that the areas are clean and to

notify the contractor if the bins need emptied. The materials collected at these locations include aluminum and bi-metal cans, paper, corrugated cardboard, plastic containers #1 & #2, and glass.

The 179th Cyberspace Wing at Mansfield Lahm Air National Guard Base offers drop-off recycling services similar to the other drop-off locations throughout Richland County. However, this drop-off location is only available to the service men and women and their families stationed at the air base.

A Richland County Map showing the locations of the full-time rural drop-off locations is located in Appendix W.

Table B2-D Inventory of Part-Time, Rural Drop-off Sites Available in the Reference Year

Four Part-Time, Rural Drop-off sites are part of the SCRAP Trailer program. They are Eastern Elementary and Western Elementary Schools in Lexington, Crestview High School and Butler Elementary School. Because these four recycling opportunities are all part of the SCRAP Trailer program, they were included in Table B2-B.

3. Mixed Solid Waste Material Recovery Facilities

Table B3-A Mixed Solid Waste Material Recovery Facility

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

4. Curbside Recycling and Trash Collection Service Providers

Table B4-A Inventory of Curbside Recycling / Trash Collection Service Providers in Reference Year

	Trash Collection Services				Curbside Recycling Services		
Name of Provider	**PAYT (Y/N)**	**Residential**	**Commercial**	**Industrial**	**Residential**	**Commercial**	**Industrial**
B & C Rubbish	Y						
Buckeye Refuse, Inc.	Y	Y	Y	Y			
CBA Waste Solutions LLC	Y						
Garbage Guys Who Care	Y						
Kurtz Roll-Off Dumpster Service	Y	Y	Y				
Kurtzman Sanitation	Y	Y	Y	Y			
Lyon's Affordable Hauling							
Monn's Trash Removal							
Rumpke	Y	Y	Y	Y	Y		
Special T Hauling							
Stantz Enterprises, LLC	Y	Y	Y	Y			
Trashmasters	Y	Y	Y	Y			
Wright's Refuse	Y	Y	Y	Y			

RCSW relies on private haulers to collect the solid waste 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.

5. Composting Facilities

Table B5-A 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
Richland County Composting Facility	Class IV	Y	441 Cairns Rd Mansfield, OH		3,218	3,218
City of Mansfield Public Works Division	Class IV	Y	480 Park Ave E Mansfield, OH		2,128	2,128
Willo'dell Yard Waste Facility	Class IV	Y	1398 US Route 42 Ashland, OH		25	25
Hauler/Grocer Food Waste Data	N/A	N/A	N/A	623		623
Total				**623**	**5,371**	**5,994**

In 2023, three compost facilities that managed yard waste and other compostable materials generated in Richland County. RCSW operated one of the three, 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 sold to the public. The City of Mansfield operates one of the remaining two facilities. This facility is available to the residents of Mansfield and accepts leaves, grass, limbs and other yard wastes. The third facility is a privately operated business open to the public. It accepts leaves, grass, limbs and other yard wastes. Both the Mansfield facility and Willo'dell process the materials they accept into a compost product that they use on site or sell depending on their license conditions.

There was no specific food waste programs or services provided in 2023. Ohio EPA reports information they receive from grocers and haulers. The amount of food waste reported to Ohio EPA is included here to show that there is composting of this material taking place.

6. Other Food Waste and Yard Waste Management Programs

Table B6-A Inventory of Other Food and Yard Waste Management Activities in the Reference Year

There are no other programs or services offered in Richland County that manage food waste or other yard waste.

Appendix C
Population Data

Appendix C Population Data

1. Reference Year Population
2. Population Projections

1. Reference Year Population

Table C1-A Reference Year Population Adjustments

	Richland
Before Adjustment	**125,319**
Additions	
Plymouth	800
Subtractions	
Crestline	18
After Adjustment	**126,101**

Source(s) of Information: Ohio Department of Development – 2022 Population Estimates (May 2023)

The estimated population of Plymouth was 1,697 in 2022 with approximately 897 people living in Richland County and approximately 800 people living in Huron County. Because the population residing in Richland County is slightly larger, the 800 people living in Plymouth, in Huron County were added to the Richland County population for this plan.

The estimated population of Crestline was 4,465 in 2022 with approximately 18 people living in Richland County and approximately 4,447 people living in Crawford County. Because the population residing in Richland County is less, the 18 people living in Crestline in Richland County were subtracted from the Richland County population for this plan.

Galion is also located in multiple counties (Richland, Crawford and Morrow), but the estimated population of Galion in Richland County was zero for 2023. Because the estimated population was zero, no adjustments were made for the population of Galion.

Table C1-B Total Reference Year Population

Unadjusted Population	Adjusted Population
125,319	126,101

2. Population Projections

Table C2-A Population Projections

Year	Richland	Total District Population
2023	126,101	126,101
2024	125,004	125,004
2025	124,826	124,826
2026	124,547	124,547
2027	125,319	125,319
2028	125,040	125,040
2029	124,761	124,761
2030	123,430	123,430
2031	122,952	122,952
2032	122,474	122,474
2033	121,996	121,996
2034	121,518	121,518
2035	121,040	121,040
2036	120,534	120,534
2037	120,028	120,028
2038	119,522	119,522
2039	119,016	119,016
2040	118,510	118,510
2041	117,245	117,245
2042	116,762	116,762

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 from Format 4.2 was used to project the population for Richland County during the planning period. Table C2-B below shows the estimated population for each five-year period and the estimated change for the years between.

Table C2-B Estimated Population

Year	Annual Change persons/year	Richland
2020	124,936	125,718
2021	-178	125,540
2022	-178	125,361
2023	-178	125,183
2024	-178	125,004
2025	124,044	124,826
2026	-279	124,547
2027	-279	125,319
2028	-279	125,040
2029	-279	124,761
2030	122,648	123,430
2031	-478	122,952
2032	-478	122,474
2033	-478	121,996
2034	-478	121,518
2035	120,258	121,040
2036	-506	120,534
2037	-506	120,028
2038	-506	119,522
2039	-506	119,016
2040	117,728	118,510
2041	-483	117,245
2042	-483	116,762
2043	-483	116,279
2044	-483	115,796
2045	115,313	116,095
2046	-369	114,944
2047	-369	114,575
2048	-369	114,207
2049	-369	113,838
2050	113,469	114,251
	Community Additions	**800**
	Community Subtractions	**18**

Appendix D
Disposal Data

Appendix D Disposal Data

1. Reference Year Waste Disposed
2. Historical Waste Analysis
3. Disposal Projections

1. Reference Year Waste Disposed

Table D1-A Waste Disposed in Reference Year – Publicly-Available Landfills (Direct Haul)[1]

	Location		Waste Accepted from the SWMD			
Crawford County Landfill	Crawford	OH	12,261.84	7.63	7,088.58	19,358
Erie County Sanitary Landfill	Erie	OH	0.00	0.00	6.01	6
Pine Grove Regional Facility	Fairfield	OH			2.17	2
SWACO Franklin County Sanitary Landfill	Franklin	OH	2.38			2
Hancock County Landfill	Hancock	OH	0.10			0
Carbon Limestone Landfill LLC	Mahoning	OH		8.52		9
Port Clinton Landfill Inc.	Ottawa	OH	9.08	0.00	0.00	9
Suburban Landfill Inc.	Perry	OH	0.02	19.03	59.50	79
Noble Road Landfill	Richland	OH	7,746.75	7,550.05	237,447.45	252,744
American Landfill, Inc.	Stark	OH		37.59		38
Countywide RDF - Republic Services	Stark	OH	18.34	188.92	14.64	222
Kimble Sanitary Landfill	Tuscarawas	OH	80.18	1,214.57	51.60	1,346
Evergreen Recycling & Disposal	Wood	OH	34.38	10.17		45
County Environmental of Wyandot	Wyandot	OH	176.61	0.00	20.21	197
Total			**20,330**	**9,036**	**244,690**	**274,056**

[1] *The facilities listed in Table D1-A and identified as able to accept waste from the SWMD (in Appendix M) will constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).*

Source(s) of Information: Ohio EPA, 2023 Ohio Solid Waste Facility Data Report, Table 14

Fourteen disposal facilities in 2016 accepted direct haul waste from Richland County. Noble Road Landfill and Crawford County Landfill accepted most of the direct hauled waste. Excluded waste made up nearly 90% of the direct hauled waste reported by Noble Road Landfill. Noble Road Landfill accepts a large volume of slag material from local steel companies.

Table D1-B Waste Disposed in Reference Year – Captive Landfills[1]

There are no captive landfills in Richland County.

Table D1-C Total Waste Disposed in Landfills (Direct Haul)

Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total
20,330	9,036	244,690	274,056

Table D1-D Waste Transferred in Reference Year[1]

	Location		Waste Received from the SWMD			
Facility Name	County	State	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)
Delaware County Transfer Facility	Delaware	OH	0.57		1.37	2
Delaware County Transfer Station and Recycling Center	Delaware	OH	0.48			0.48
Huron County Solid Waste Facility	Huron	OH	174.84	206.32		381
Republic Services Mount Vernon Transfer Facility	Knox	OH	77.63		101.97	180
Rumpke Waste Inc. Richland County Transfer Facility	Richland	OH	85,068.51		7,314.67	92,383
Kimble Transfer & Recycling - Canton	Stark	OH			5.47	5
Marion County Solid Waste Transfer Facility	Marion	OH	2.03			2
Total			**85,324**	**206**	**7,423**	**92,954**

[1] *The facilities listed in Table D1-D constitute those identified for purposes of Ohio Revised Code Section 3734.53(13)(a).*

Source(s) of Information: Ohio EPA, 2023 Ohio Solid Waste Facility Data Report, Table 14.

Seven transfer facilities in 2023 accepted waste from Richland County. The Richland County Transfer Facility operated by Rumpke accepted the majority of the waste for transfer. The majority of the waste accepted for transfer was residential and transferred to Noble Road Landfill for disposal.

Table D1-E Waste Incinerated/Burned for Energy Recovery in Reference Year[1]

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 D1-F Total Waste Disposed in Reference Year

	Residential/ Commercial (tons)	Industrial (tons)	Excluded (tons)	Total (tons)	% of Total Waste Disposed
Direct Hauled	20,330	9,036	244,690	274,056	75%
Transferred	85,324	206	7,423	92,954	25%
Incinerated	0	0	0	0	0%
Total	**105,654**	**9,243**	**252,114**	**367,010**	**100%**
Percent of Total	**29%**	**3%**	**69%**	**100%**	

Source(s) of Information: Ohio EPA, 2023 Ohio Solid Waste Facility Data Report, Table 14.

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

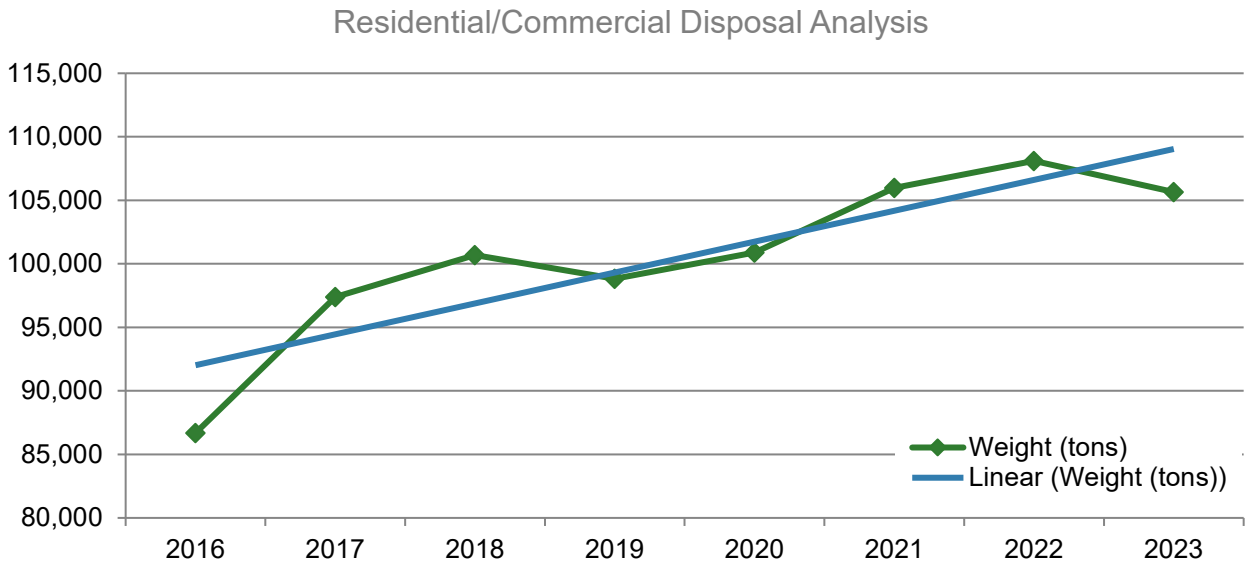
2. Historical Waste Analysis

Table D2-A Historical Disposal Data

Year	Population	Residential/ Commercial Solid Waste		Industrial Solid Waste	Excluded Waste	Total Waste
2016	122,656	3.87	86,681	86,890	152,232	325,803
2017	122,257	4.37	97,400	101,790	119,157	318,348
2018	120,589	4.58	100,696	19,776	208,300	328,772
2019	121,154	4.47	98,836	20,384	199,383	318,604
2020	121,488	4.55	100,883	8,343	175,745	284,970
2021	121,488	4.78	105,987	8,536	313,440	427,964
2022	124,504	4.76	108,105	15,239	255,750	379,094
2023	125,064	4.63	105,654	9,243	252,114	367,010

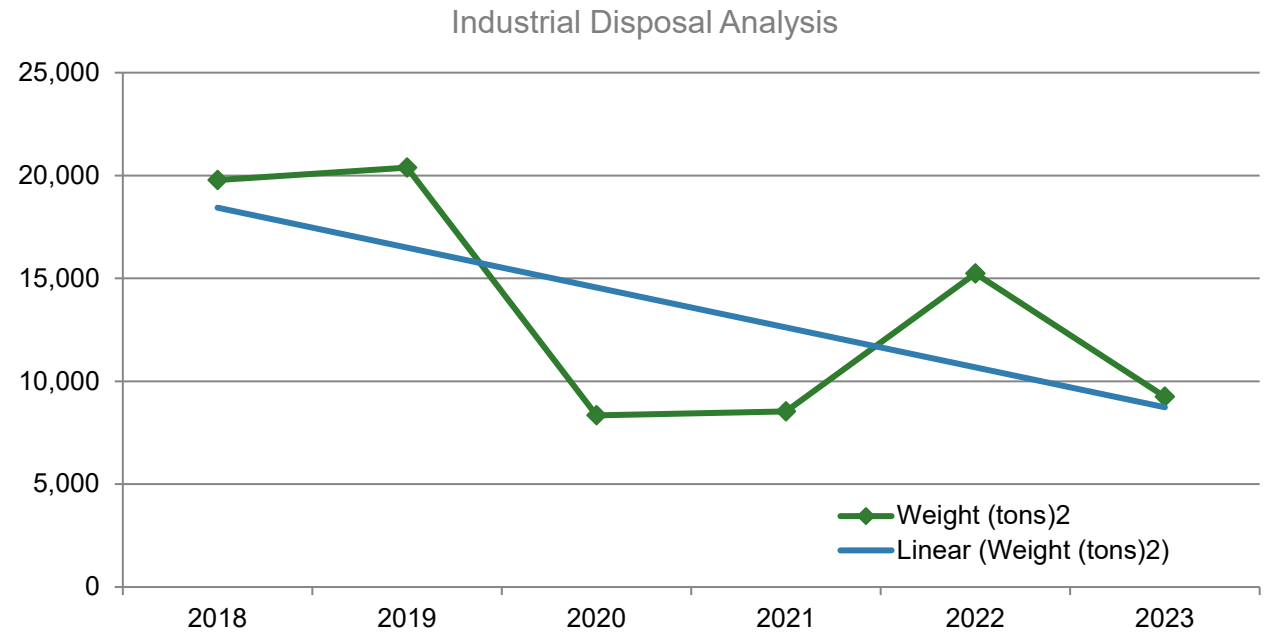
Source(s) of Information: Ohio EPA, 2023 Ohio Solid Waste Facility Data Report, Table 14

Residential/Commercial Waste



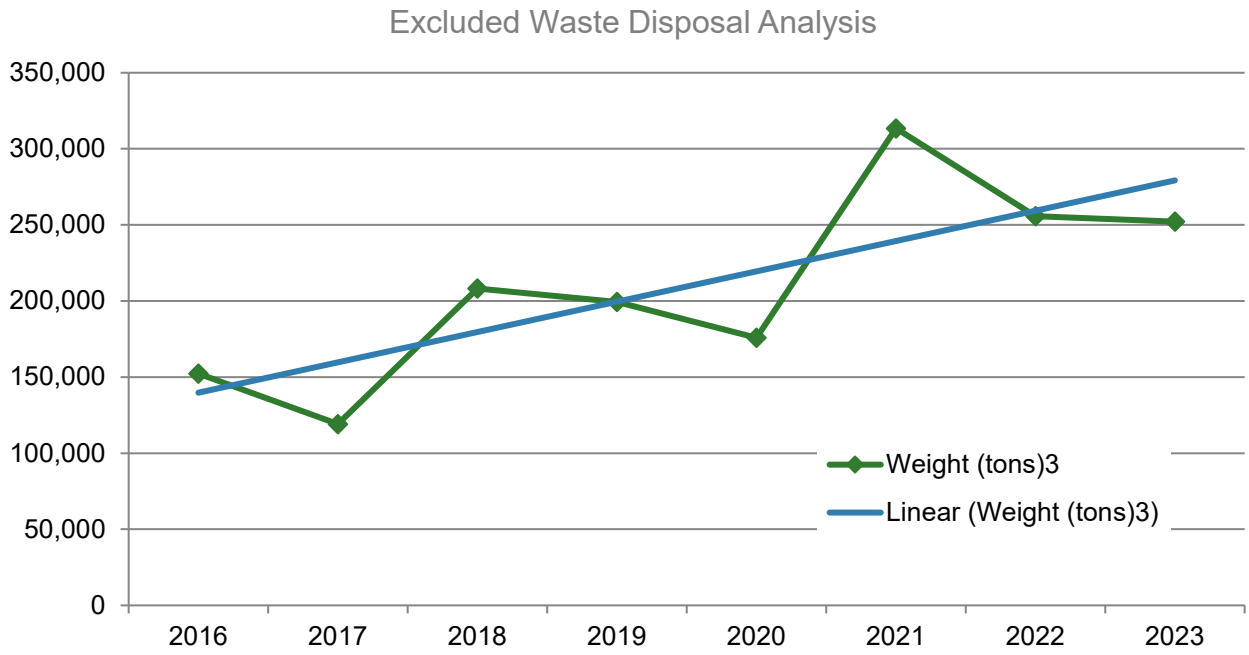
The annual amount of residential waste disposed of from Richland County is generally increasing since 2016.

Industrial Waste



The amount of industrial waste disposed of in Richland County since 2018 has varied. The drop seen from 2020 to 2021 is likely a result of the COVID pandemic. The overall trend for industrial waste disposal has been a slight decrease.

Excluded Waste



The majority of the excluded waste in Richland County is the auto shredder residue from BlueScope Recycling. The Noble Road Landfill used this material as an alternate daily cover. Even though this material is not recyclable, its use as a daily cover at the landfill is beneficial to the environment as they use less soil in the landfill preserving airspace for waste disposal.

3. Disposal Projections

Table D3-A Projections for Waste to be Disposed and Transferred

Year	Residential/ Commercial Solid Waste Weight (tons)	Industrial Solid Waste Weight (tons)	Excluded Waste Weight (tons)	Total Waste Weight (tons)	Waste Transferred (as part of Total Disposal) Weight (tons)
2023	105,654	9,243	252,114	367,010	92,954
2024	102,661	8,975	234,122	345,758	87,571
2025	102,515	8,714	234,122	345,351	87,468
2026	102,286	8,461	234,122	344,869	87,346
2027	102,920	8,216	234,122	345,258	87,445
2028	102,690	7,978	234,122	344,790	87,326
2029	102,461	7,746	234,122	344,329	87,209
2030	101,368	7,521	234,122	343,012	86,876
2031	100,976	7,303	234,122	342,401	86,721
2032	100,583	7,091	234,122	341,797	86,568
2033	100,583	7,091	234,122	341,797	86,568
2034	100,583	7,091	234,122	341,797	86,568
2035	100,583	7,091	234,122	341,797	86,568
2036	100,583	7,091	234,122	341,797	86,568
2037	100,583	7,091	234,122	341,797	86,568
2038	100,583	7,091	234,122	341,797	86,568
2039	100,583	7,091	234,122	341,797	86,568
2040	100,583	7,091	234,122	341,797	86,568
2041	100,583	7,091	234,122	341,797	86,568

Source(s) of Information: Ohio EPA Workbook

Based on the reference year total tons of waste disposed and total tons of waste transferred, in the planning period 25% of the total waste disposed from Richland County will pass through a transfer station.

From 2016 to 2023, the average residential/commercial waste disposal rate was 4.50 pounds per person per day (ppd). Using this average disposal rate and the population projection for the planning period, the amount of R/C waste disposed will decrease. Even though the historic waste analysis for the residential/commercial sector shows an increasing trend in R/C waste disposal, the amount of growth projected by the historic trend line results in a higher-than-expected disposal rate. The projected population during the planning period decreases and therefore results in a decrease in residential/commercial waste disposal. The resulting decrease is an average of 0.78% each year. In general, RCSW believes there will be little change to the residential commercial waste disposal rate during the planning period. Using the average disposal rate and the planning period population, there is a slow decline in the projected annual amount of residential/commercial waste disposed of.

From 2018 to 2023, the average annual change in the disposal rate of industrial waste was a 2.90% decrease. In 2020, the volume of industrial waste disposed dropped 59%. This is potentially a result of the COVID 19 pandemic. In 2021, there was a small increase in the disposal of industrial waste; in 2022, Richland County saw a sizeable increase in the industrial waste disposed, but not quite back up to the pre pandemic numbers. In 2023, the rate fell again. The overall trend of a 2.90% annual decline from 2018 to 2023 appears to be a reasonable planning period prediction of industrial waste disposal to 2032. Industrial waste disposal is constant from 2032 to the end of the 15 years plan.

From 2018 to 2023, the average annual change in the disposal rate of excluded waste was an 8.48% increase. If this rate is constant, the amount of excluded waste disposed by the end of the planning period exceeds a million tons. This is not a realistic prediction. Based on discussion with Rumpke Waste at the Noble Road Landfill, RCSW believes that the disposal rate for excluded waste is not likely to change significantly. Therefore, the average tons disposed over the historic review period will represent the disposal of excluded waste through the planning period.

Table D3-B Waste Imports

Year												
Facility Name	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Noble Road Landfill	707,359	707,800	793,108	766,119	742,289	752,684	763,224	773,912	784,749	795,739	806,882	818,181
Richland County Transfer Facility	57,559	50,335	50,539	58,201	60,172	61,135	62,114	63,108	64,118	65,145	66,188	67,247
Total Imported	**764,918**	**758,135**	**843,648**	**824,320**	**802,461**	**813,819**	**825,338**	**837,020**	**848,868**	**860,884**	**873,070**	**885,428**

Year											
Facility Name	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**
Noble Road Landfill	829,639	841,256	841,256	841,256	841,256	841,256	841,256	841,256	841,256	841,256	841,256
Richland County Transfer Facility	68,324	69,417	69,417	69,417	69,417	69,417	69,417	69,417	69,417	69,417	69,417
Total Imported	**897,962**	**910,674**	**910,674**	**910,674**	**910,674**	**910,674**	**910,674**	**910,674**	**910,674**	**910,674**	**910,674**

Source(s) of Information: Ohio EPA, 2023 Ohio Solid Waste Facility Data Report, Tables 7 and 10

From 2019 to 2023, the average annual change of imported waste was an increase of 1.36%. Using a 1.36% increase each year, Richland County waste imports were projected through 2031 and then held constant through the end of the planning period.

Appendix E
Residential/Commercial Reduction and Recycling Data

Appendix E Residential/Commercial Reduction and Recycling Data

1. Reference Year Recovery Data
2. Historical Recovery
3. Residential/Commercial Recovery Projections

1. 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 primarily engaged.

To obtain industrial sector recycling data, RCSW annually surveys commercial establishments classified under the following NAICS codes:

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

Table E1-A 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	Tires	
42						39			0								
44								17									
45																	
48																	
49																	
51																	
52																	
53																	
54																	
55																	
56						207		1,778	1,889	1		158		4,653	41	58	
61														43			
62																	
71																	
72																	
81																	
92																	
Unadjusted Total	0	0	0	0	0	246	0	1,795	1,889	1	0	158	0	4,696	41	58	8,885
Adjustments														43		58	-101
Adjusted Total	**0**	**0**	**0**	**0**	**0**	**246**	**0**	**1,795**	**1,889**	**1**	**0**	**158**	**0**	**4,653**	**41**	**0**	**8,784**

Source(s) of Information: RCSW 2023 Annual District Report

Tires were reported in the annual survey in 2023. Table E1-D includes tires based on Ohio EPA data, so to avoid double counting, the 58 tons reported here were removed from the totals.

Forty-three (43) tons of Commingled Recyclables were removed from the total in this table because they were managed by Rumpke and assumed to be included I the totals reported by Rumpke and accounted for in Table E1-B.

Commingled Recyclables made up the largest portion of the recycled tons in 2023. Metals, cardboard and paper have been the easiest source separated materials to recycle and market.

Table E1-B Data from Other Recycling Facilities

Program and/or Source of Materials/Data	Appliances/ "White Goods"	Electronics	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Yard Waste	Total
Processors/MRFs																
Richland County Materials Recovery Facility (Res)														20		20
Richland County Materials Recovery Facility (Com)						150		1,717	1,358					1,636		4,861
Rumpke Recycling Material Recovery Facility					1,518	306		2,695	3,040	641						8,200
Unadjusted Totals	0	0	0	0	1,518	455	0	4,413	4,399	641	0	0	0	1,656	0	13,081
Adjustments						206		1,778	1,889	1				1,636		5,510
Adjusted Totals	**0**	**0**	**0**	**0**	**1,518**	**249**	**0**	**2,635**	**2,510**	**640**	**0**	**0**	**0**	**20**	**0**	**7,571**

Source(s) of Information: Ohio Material Recovery Facilities and commercial Recycling – 2023; from Ohio EPA Solid Waste Management Web Page

The totals for ferrous metals, corrugated cardboard, paper, plastics, and commingled recyclables were adjusted to account for the materials reported in the 2023 ADR surveys.

The Recycling Facility operated by RCSW continues to be a highly utilized service by the citizens of Richland County. Rumpke continues to service the drop-off boxes throughout Richland County and processes the materials collected in their Columbus based material recovery facility.

Table E1-C Data Reported to Ohio EPA by Commercial Businesses

Ohio EPA Data Source	Glass	Plastic	Newspaper	Cardboard	All Other Paper/Mixed Paper	Nonferrous	Ferrous	Wood	Food: Compost	Food: Other	Commingled Recyclables (Mixed)	Other	Other	
Target	0	8		227	1		5				4	0	0	
Kroger	0	16		948	0		0				0	0	0	
Walmart	0	42		1,720	3		0				0	102	39	
Kohl's	0	7		52	0		0				0	0	0	
CVS	0	0		18	0		0				0	0	0	
Advance Auto Parts	0	1		11	0		1	5			0	67	11	
Aldi	0	1		131	0		0				0	0	0	
Meijer	0	21		107	0		5				0	0	0	
AutoZone	0	0		13	0		19	16			0	13	4	
Unadjusted Total	0	96	0	3,227	4	0	30	21	0	0	4	183	54	3,617
Adjustments														0
Adjusted Total	**0**	**96**	**0**	**3,227**	**4**	**0**	**30**	**21**	**0**	**0**	**4**	**183**	**54**	**3,617**

Source(s) of Information: Ohio Material Recovery Facilities and commercial Recycling – 2023;

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 E1-D Other Recycling Programs/Other Sources of Data

Other Programs or Sources of Data	Appliances/ "White Goods"	HHW	Used Motor Oil	Electronics	Scrap Tires	Dry Cell Batteries	Lead-Acid Batteries	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Yard Waste	Unadjusted Total	Adjustments	Adjusted Total
Curbside Recycling Services																				0		0
Drop-off Recycling Locations																				0		0
Composting Facilities								623											5,371	5,994		5,994
Other Food and Yard Waste Management Activities																				0		0
Ohio EPA Scrap Tire Data					1,841															1,841		1,841
Unadjusted Total	0	0	0	0	1,841	0	0	623	0	0	0	0	0	0	0	0	0	0	5,371	7,835	0	7,835
Adjustments																				0		
Adjusted Total	**0**	**0**	**0**	**0**	**1,841**	**0**	**0**	**623**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5,371**	**7,835**		

Source(s) of Information: Ohio Material Recovery Facilities and commercial Recycling – 2023

The data for any curbside program and the drop-off locations are captured in the numbers provided by Rumpke and reported in Table E1-B.

Table E1-E Residential/Commercial Material Recovered in Reference Year

Material	Quantity (tons)
Appliances/ "White Goods"	0
Household Hazardous Waste	0
Used Motor Oil	0
Electronics	0
Scrap Tires	1,841
Dry Cell Batteries	0
Lead-Acid Batteries	0
Food	623
Glass	1,518
Ferrous Metals	525
Non-Ferrous Metals	0
Corrugated Cardboard	7,656
All Other Paper	4,402
Plastics	737
Textiles	0
Wood	179
Rubber	0
Commingled Recyclables (Mixed)	4,677
Yard Waste	5,412
Other (Aggregated)	237
Total	**27,807**

Source(s) of Information: Totals from Table E1-A through Table E1-D

Total tons recycled in reference year, 2023, listed by type of material.

Table E1-F Quantities Recovered by Program/Source

Program/Source of R/C Recycling Data	Quantities (Tons)
Commercial Survey	8,784
Data from Other Recycling Facilities	7,571
Ohio EPA Commercial Retail Data	3,617
Curbside Recycling Services	0
Drop-off Recycling Locations	0
Composting Facilities	5,994
Other Food and Yard Waste Management Activities	0
Ohio EPA Scrap Tire Data	1,841
Total	**27,807**

Total tons recycled in reference year, 2023, listed by recycling program or information source.

2. Historical Recovery

Table E2-A Historical Residential/Commercial Recovery by Program/Source

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Composting Facilities	Ohio EPA Scrap Tire Data	Totals
2018	4,833	7,952	4,558	6,531	2,212	26,086
2019	3,414	9,485	5,046	7,307	2,392	27,644
2020	10,922	8,332	5,489	6,516	1,681	32,940
2021	13,300	8,969	4,539	5,883	1,401	34,091
2022	13,255	9,830	4,897	7,466	2,051	37,498
2023	8,784	7,571	3,617	5,994	1,841	27,807

Source(s) of Information: Ohio Material Recovery Facilities and commercial Recycling; RCSW Annual District Reports

The Commercial Surveys show variability over the historical review due to survey responsiveness. The data from the other program sources is consistent through the historic review.

3. Residential/Commercial Recovery Projections

Table E3-A Residential/Commercial Recovery Projections by Program/Source

Year	Commercial Survey	Data from Other Recycling Facilities	Ohio EPA Commercial Retail Data	Composting Facilities	Ohio EPA Scrap Tire Data	Totals
2023	8,784	7,571	3,617	5,994	1,841	27,807
2024	9,353	7,593	3,610	5,977	1,834	28,366
2025	9,340	7,614	3,602	5,959	1,826	28,341
2026	9,319	7,635	3,595	5,942	1,819	28,310
2027	9,377	7,657	3,587	5,925	1,811	28,356
2028	9,356	7,678	3,580	5,908	1,804	28,325
2029	9,335	7,700	3,572	5,890	1,796	28,293
2030	9,236	7,721	3,565	5,873	1,789	28,183
2031	9,200	7,743	3,557	5,856	1,782	28,137
2032	9,164	7,764	3,550	5,839	1,774	28,092
2033	9,164	7,764	3,550	5,839	1,774	28,092
2034	9,164	7,764	3,550	5,839	1,774	28,092
2035	9,164	7,764	3,550	5,839	1,774	28,092
2036	9,164	7,764	3,550	5,839	1,774	28,092
2037	9,164	7,764	3,550	5,839	1,774	28,092
2038	9,164	7,764	3,550	5,839	1,774	28,092
2039	9,164	7,764	3,550	5,839	1,774	28,092
2040	9,164	7,764	3,550	5,839	1,774	28,092
2041	9,164	7,764	3,550	5,839	1,774	28,092

Source(s) of Information: Ohio EPA Workbook

Because of the variability of the historic for the Commercial Surveys, the Average Per Capita Recovery Rate (0.41 ppd) was used to project the tons of material that will be recycled by the commercial sector. Due to the projected decline in population, we see a slow decline in the projected tons of material recycled in the commercial sector.

The Data from Other Recycling Facilities includes the numbers from the Rumpke Collections and the RCSW Recycling Facility. The historic review shows a 0.28% average percentage change in tons for these programs. This is not a big shift in materials and indicates consistent use of the programs.

The report of commercial retail data from Ohio EPA varies by as much as a drop of 1,279 tons from 2022 to 2023. Overall variation in the program seems to be steady. The down years are offset by the up years. Because it seems to have consistent ups and downs through the historic review period, the high and low annual percentage recovered were thrown out and -0.21% is the average percentage recovered.

During the historic review period, composting in Richland County showed a slight decline. The average annual percentage change was -0.29%. There is little change expected for compostable material during the planning period.

Similar to commercial retail data, the scrap tire data varies from year to year through the historic review. The average percentage change over the review period is -0.41%. The tons of scrap tires collected anticipated remaining consistent through the planning period.

Appendix F
Industrial Waste
Reduction and Recycling Data

Appendix F Industrial Waste Reduction and Recycling Data

(Completing this appendix is voluntary)

1. Reference Year Recovery Data
2. Historical Recovery
3. Industrial Recovery Projections

1. 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 primarily engaged.

To obtain industrial sector recycling data, RCSW annually surveys industrial establishments 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

Table F1-A Industrial Survey Results

NAICS	Food	Glass	Ferrous Metals	Non-Ferrous Metals	Corrugated Cardboard	All Other Paper	Plastics	Textiles	Wood	Rubber	Commingled Recyclables (Mixed)	Ash	Non-Excluded Foundry Sand	Flue Gas Desulfurization	Used Lamps and Ballasts	Used Oil	Grease	Electronics	Other	
22																				
31	20			2	5	1											22			
32		20,811		157																
33			158,611	481	325	8	9		725		11				1	402		3	9	
Unadjusted Total	20	20,811	158,611	640	330	9	9	0	725	0	11	0	0	0	1	402	22	3	4	181,606
Adjustments																				0
Adjusted Total	**20**	**20,811**	**158,611**	**640**	**330**	**9**	**9**	**0**	**725**	**0**	**11**	**0**	**0**	**0**	**1**	**402**	**22**	**3**	**4**	**181,606**

Source(s) of Information: RCSW Annual District Reports

Used oil, grease and electronic were reported as other items that were recycled through the industrial sector surveys.

Ferrous metal and glass were by far the most collected material in the industrial sector.

Table F1-B Data from Other Recycling Facilities

There is no data to report for Other Recycling Facilities.

Table F1-C Other Recycling Programs/Other Sources of Data

There is no data to report for Other Recycling Programs/Other Sources of Data

Table F1-D Industrial Material Recovered in Reference Year

Material	Quantity (tons)
Food	20
Glass	20,811
Ferrous Metals	158,611
Non-Ferrous Metals	640
Corrugated Cardboard	330
All Other Paper	9
Plastics	9
Textiles	0
Wood	725
Rubber	0
Commingled Recyclables (Mixed)	11
Ash	0
Non-Excluded Foundry Sand	0
Flue Gas Desulfurization	0
Other (Aggregated)	435
Total	**181,606**

Source(s) of Information: RCSW Annual District Reports

Total tons recycled in reference year, 2023, listed by type of material.

Table F1-E Quantities Recovered by Program/Source

Program/Source of Industrial Recycling Data	Quantity (Tons)
Industrial survey	181,606
Total	**181,606**

2. Historical Recovery

Table F2-A Historical Industrial Recovery by Program/Source

Year	Industrial survey	Annual Percentage Change	Annual Tonnage Change
2018	96,600		
2019	91,200	-5.59%	-5,400
2020	97,936	7.39%	6,736
2021	122,535	25.12%	24,599
2022	108,452	-11.49%	-14,083
2023	181,606	67.45%	73,154
Average Percentage Change			16.57%
Average Tonnage Change			17,001

Source(s) of Information: RCSW Annual District Reports

From 2018 to 2022 the recycled material reported in by the Industrial Sector survey was generally increasing. The large jump in material reported in 2023 is attributed to an increase in the survey responses received during the annual ADR survey. Including the change from 2022 to 2023 will inappropriately skew the average percentage change. If that data point is excluded the average percent change is 3.86%. This is a more realistic number to use for projections in the planning period.

3. Industrial Recovery Projections

Table F3-A Industrial Recovery Projections by Program/Source

Year	Industrial survey	Totals
2023	181,606	181,606
2024	188,616	188,616
2025	195,896	195,896
2026	203,458	203,458
2027	211,311	211,311
2028	219,468	219,468
2029	227,939	227,939
2030	236,738	236,738
2031	245,876	245,876
2032	255,367	255,367
2033	255,367	255,367
2034	255,367	255,367
2035	255,367	255,367
2036	255,367	255,367
2037	255,367	255,367
2038	255,367	255,367
2039	255,367	255,367
2040	255,367	255,367
2041	255,367	255,367

To project the amounts recovered through the planning period RCSW used the adjusted average percentage change from 2018 through 2023.

RCSW believes that there are materials recovered that and not captured through the current survey effort.

Appendix G
Waste Generation

Appendix G Waste Generation

1. Historical Year Waste Generated
2. Generation Projections
3.

1. Historical Year Waste Generated

Table G1-A Reference Year and Historical Waste Generated

Year	Population	Residential/ Commercial				Industrial			Excluded (tons)	Total (tons)	Annual % Change		
		Disposed (tons)	Recycled (tons)	Generated (tons)	Per Capita Generated (ppd)	Disposed (tons)	Recycled (tons)	Generated (tons)			Residential/ Commercial	Industrial	Excluded
2018	120,589	100,696	26,086	126,782	5.76	19,776	96,600	116,376	208,300	451,458			
2019	121,154	98,836	27,644	126,480	5.72	20,384	91,200	111,584	199,383	437,447	-0.24%	-4.12%	-4%
2020	121,488	100,883	32,940	133,823	6.04	8,343	97,936	106,279	175,745	415,846	5.81%	-4.75%	-12%
2021	121,488	105,987	34,091	140,079	6.32	8,536	122,535	131,071	313,440	584,590	4.67%	23.33%	78%
2022	124,504	108,105	37,498	145,604	6.41	15,239	108,452	123,691	255,750	525,044	3.94%	-5.63%	-18%
2023	125,064	105,654	27,807	133,461	5.85	9,243	181,606	190,849	252,114	576,423	-8.34%	54.30%	-1%

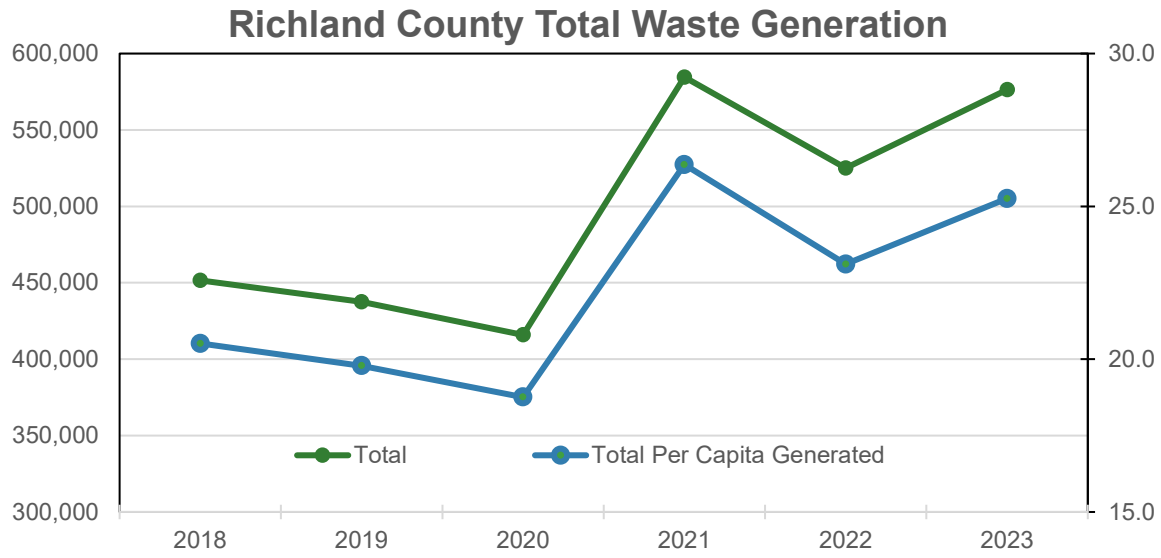
Source(s) of Information: Ohio EPA Facility Data Reports; Ohio EPA ADR Review Forms; RCSW Annual District Reports

Sample Calculations (2023):

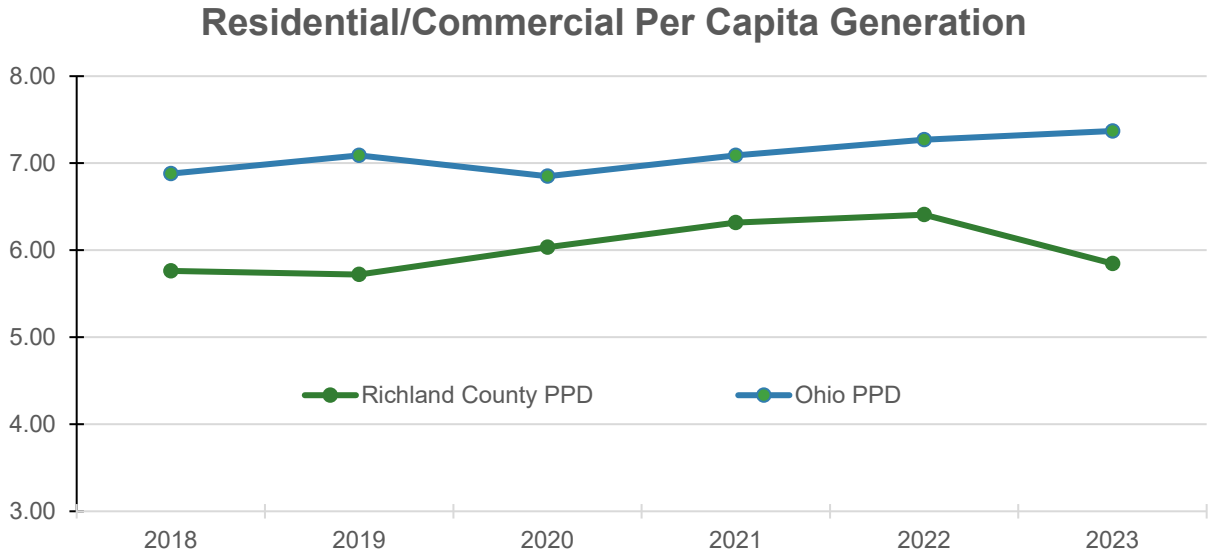
Per capita generation rate =
(tons generated/year) x (2000 lbs/ton) ÷ (365 days/year) x (population);
(133,461 tons/year) x (2,000 lbs/ton) ÷ (365 days/year) x 121,970people) = 5.7 ppd

Annual percentage change =
((new year – old year) ÷ old year) x 100%
((133,461 tons – 145,603 tons) ÷ 145,603 tons) x 100% = -8.34%

The historical waste generation for Richland County (years 2018 through 2023) is shown in Table G1-A. Generation was calculated based upon the sum of reported disposal and recycling quantities for each year. Residential/commercial per capita generation generally increased from 2018 to 2022 and then decreased from 2022 to 2023.

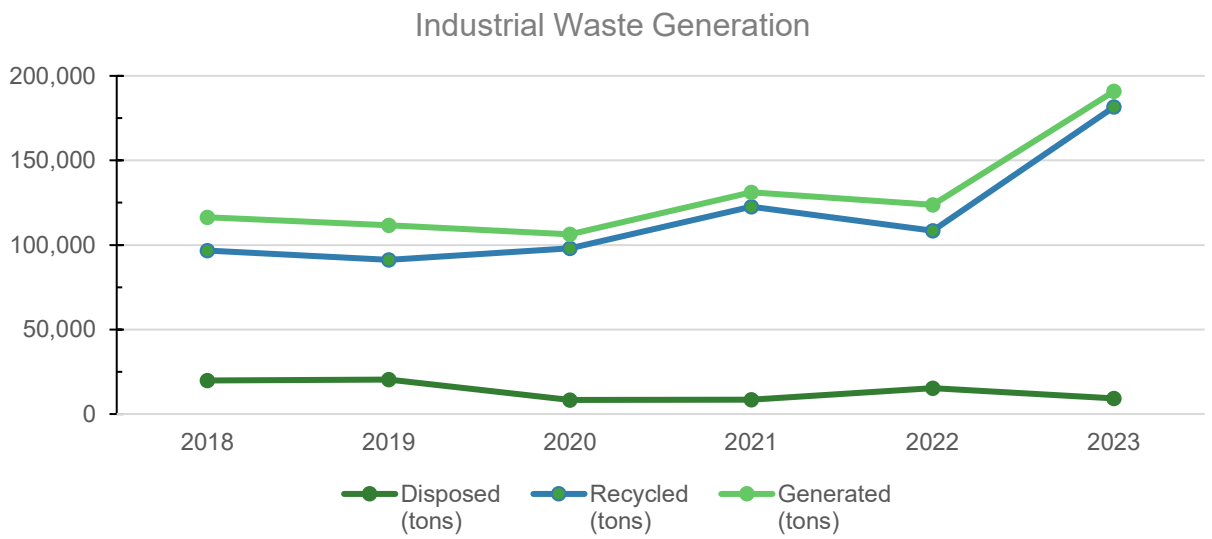


Residential/Commercial Waste



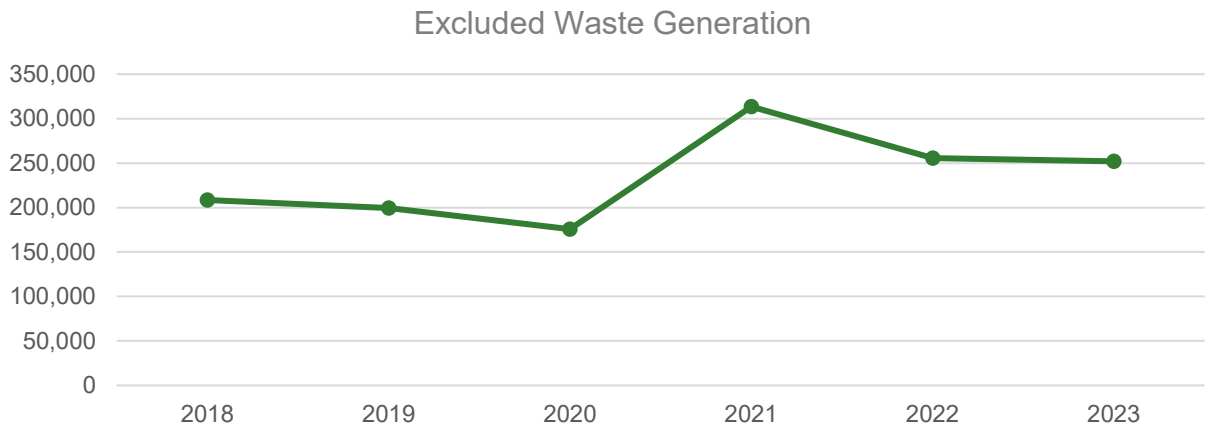
Richland County per capita generation rate is lower than the Ohio per capita generation, but they generally follow the same trend over the historic review period.

Industrial Waste



Total industrial waste generation in Richland County increased from 2018 to 2023 with a marked increase in 2023. Throughout the historic review period the recycling tonnage has been the greater percentage of industrial waste generated. A review of the data collected during the historic review period indicates that the majority of the materials recycled from the industrial waste sector are ferrous metals and glass. The increase in 2023 is due to survey results from Pittsburgh Glass Works, a company that had not previously completed the ADR survey.

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 figure indicates that the amount of excluded waste from Richland County disposed during the historic review period ranged from 175,000 tons to 313,000 tons. The increase in excluded waste in 2021 can be linked to an increased use of auto shredder residue and slag as alternate daily cover at the Noble Road Landfill.

2. Generation Projections

Table G2-A Generation Projections

Year	Population	Residential/ Commercial				Industrial			Excluded Waste (tons)	Total (tons)	Annual Percentage Change			
		Disposal (tons)	Recycle (tons)	Generation (tons)	Per Capita Generation (ppd)	Disposal (tons)	Recycle (tons)	Generation (tons)			Residential/ Commercial	Industrial	Excluded	Total
2023	126,101	105,654	27,807	133,461	5.80	9,243	181,606	190,849	252,114	576,423	-------	-------	-------	-------
2024	125,004	102,661	28,366	131,027		8,975	188,616	197,590	234,122	562,740	-1.8%	3.5%	-7.1%	-2.4%
2025	124,826	102,515	28,341	130,856		8,714	195,896	204,611	234,122	569,589	-0.1%	3.6%	0.0%	1.2%
2026	124,547	102,286	28,310	130,595		8,461	203,458	211,919	234,122	576,637	-0.2%	3.6%	0.0%	1.2%
2027	125,319	102,920	28,356	131,276		8,216	211,311	219,527	234,122	584,926	0.5%	3.6%	0.0%	1.4%
2028	125,040	102,690	28,325	131,015		7,978	219,468	227,446	234,122	592,583	-0.2%	3.6%	0.0%	1.3%
2029	124,761	102,461	28,293	130,755		7,746	227,939	235,686	234,122	600,562	-0.2%	3.6%	0.0%	1.3%
2030	123,430	101,368	28,183	129,552		7,521	236,738	244,259	234,122	607,933	-0.9%	3.6%	0.0%	1.2%
2031	122,952	100,976	28,137	129,113		7,303	245,876	253,179	234,122	616,415	-0.3%	3.7%	0.0%	1.4%
2032	122,474	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	-0.3%	3.7%	0.0%	1.4%
2033	121,996	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%
2034	121,518	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%
2035	121,040	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%
2036	120,534	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%
2037	120,028	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%
2038	119,522	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%
2039	119,016	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%
2040	118,510	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%
2041	117,245	100,583	28,092	128,675		7,091	255,367	262,458	234,122	625,255	0.0%	0.0%	0.0%	0.0%

The waste generation and recycling projections for Richland County found in Appendix D, Appendix E, and Appendix F are summarized in Table G2-A

RCSW predicted the residential/commercial and industrial generation rates out to the year 2033 and then held those rates constant for the remainder of the planning period. RCSW used the annual average excluded waste generated throughout the review period as the predicted excluded waste generation rate throughout the entire planning period. This seemed appropriate in that the annual average percentage change was an increase of 8.50% and the annual average change in tons disposed was 36,000. Had RCSW used either of these numbers to predict the generation rate through the planning period, the amount of excluded waste generated would have been unreasonable.

3. Waste Composition

Table G3-A Composition of Residential/Commercial Waste

Material	Percent Total Generation[1]	Year																		
		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Paper and Paperboard	23.10%	24,406	23,715	23,681	23,628	23,774	23,722	23,669	23,416	23,325	23,235	23,235	23,235	23,235	23,235	23,235	23,235	23,235	23,235	23,235
Glass	4.20%	4,437	4,312	4,306	4,296	4,323	4,313	4,303	4,257	4,241	4,224	4,224	4,224	4,224	4,224	4,224	4,224	4,224	4,224	4,224
Ferrous	6.60%	6,973	6,776	6,766	6,751	6,793	6,778	6,762	6,690	6,664	6,638	6,638	6,638	6,638	6,638	6,638	6,638	6,638	6,638	6,638
Aluminum	1.30%	1,373	1,335	1,333	1,330	1,338	1,335	1,332	1,318	1,313	1,308	1,308	1,308	1,308	1,308	1,308	1,308	1,308	1,308	1,308
Other Nonferrous	0.90%	951	924	923	921	926	924	922	912	909	905	905	905	905	905	905	905	905	905	905
Plastics	12.20%	12,890	12,525	12,507	12,479	12,556	12,528	12,500	12,367	12,319	12,271	12,271	12,271	12,271	12,271	12,271	12,271	12,271	12,271	12,271
Rubber and Leather	3.10%	3,275	3,183	3,178	3,171	3,191	3,183	3,176	3,142	3,130	3,118	3,118	3,118	3,118	3,118	3,118	3,118	3,118	3,118	3,118
Textiles	5.80%	6,128	5,954	5,946	5,933	5,969	5,956	5,943	5,879	5,857	5,834	5,834	5,834	5,834	5,834	5,834	5,834	5,834	5,834	5,834
Wood	6.20%	6,551	6,365	6,356	6,342	6,381	6,367	6,353	6,285	6,261	6,236	6,236	6,236	6,236	6,236	6,236	6,236	6,236	6,236	6,236
Other	1.50%	1,585	1,540	1,538	1,534	1,544	1,540	1,537	1,521	1,515	1,509	1,509	1,509	1,509	1,509	1,509	1,509	1,509	1,509	1,509
Food	21.60%	22,821	22,175	22,143	22,094	22,231	22,181	22,132	21,896	21,811	21,726	21,726	21,726	21,726	21,726	21,726	21,726	21,726	21,726	21,726
Yard Trimmings	12.10%	12,784	12,422	12,404	12,377	12,453	12,426	12,398	12,266	12,218	12,171	12,171	12,171	12,171	12,171	12,171	12,171	12,171	12,171	12,171
Misc. Inorganic Wastes	1.40%	1,479	1,437	1,435	1,432	1,441	1,438	1,434	1,419	1,414	1,408	1,408	1,408	1,408	1,408	1,408	1,408	1,408	1,408	1,408
R/C Waste Generated		105,654	102,661	102,515	102,286	102,920	102,690	102,461	101,368	100,976	100,583	100,583	100,583	100,583	100,583	100,583	100,583	100,583	100,583	100,583

[1]*From Advancing Sustainable Materials Management: 2018 Tables and Figures Assessing Trends in Materials Generation and Management in the United States December 2020*

Appendix H
Strategic Evaluation

Appendix H Strategic Evaluation

1. Special Program Needs Analysis

1. Special Program Needs Analysis

During the first quarter of 2022, RCSW worked with the Richland County Sheriff's Department to establish an Environmental Deputy position. This position would be a Deputy Sheriff that worked with RCSW to enforce local litter laws as well as State of Ohio environmental laws.

RCSW had previously decided that a stronger law enforcement presence would benefit their efforts to curb open dumping in Richland County. RCSW also saw the potential for the Environmental Deputy to assist patrolling the drop-off locations throughout the county and treat garbage left at the drop-off as open dumping as well.

Since the establishment of this position, the Environmental Deputy has had the opportunity to investigate open dumping cases, identify the responsible parties and write citations that have allowed RCSW to recoup the cost of the open dump clean up. Because Richland County has been able to successfully prosecute these cases, the program has become a deterrent for open dumping. It is still too early to identify if open dumping has been reduced in Richland County.

Additionally, the Environmental Deputy acts as another RCSW staff member and helps to inform Richland County citizens of the programs RCSW offers. The Deputy attends local government meetings such as township and village councils and conduct presentations at schools. These are treated as opportunities to encourage recycling and interaction with RCSW.

In 2025 the Environmental Deputy applied for a grant through Ohio Attorney General's office. They County was awarded $19,900 dollars. With this money RCSW purchased new "No Littering" and "No Dumping Allowed" signs. There are enough signs that every township, city and village in Richland County will get at least two.

Table H1-A Statistics

Richland County Environmental Enforcement				
Activity	**2022**	**2023**	**2024**	**Total**
Littering Calls	60	100	76	236
G.O.	38	59	46	143
Littering Summons	34	45	27	106
Traffic Stops	20	20	16	56
Citations	15	12	6	33
Warnings	4	10	11	25
Other Summonses	5	0	2	7
Restitution Request	$1,025	$1,362	$1,453	$3,840
Felony Charges		3	3	6

Appendix I
Actions, Priorities, and Program Descriptions

Appendix I Actions, Priorities, and Program Descriptions

1. Actions and Priorities

1. Actions and Priorities

Priorities

RCSW believes that the recycling programs implemented through the previous plan period have been successful and allowed RCSW to meet the goals of the State Solid Waste Plan. For the duration of this planning period, RCSW intends to continue the programs that they have implemented. The priority through this planning period will be ensuring that the programs are run efficiently.

Programs

Residential Recycling Infrastructure

Curbside Recycling Services

Non-Subscription Curbside Recycling

In previous plans, RCSW reported the Village of Shiloh provided curbside recycling collection service for their residents through a contract with Rumpke. At this time, RCSW has learned that is not the case and has eliminated the service from this current plan update.

Subscription Curbside Recycling

Table I1-A Subscription Curbside Recycling

ID	Name	Start Date	End Date	Goal(s)
SC1	Mansfield Subscription Recycling	on going	on going	1, 2, 7
SC2	Lexington Subscription Recycling	on going	on going	1, 2, 7
SC3	Ontario Subscription Recycling	on going	on going	1, 2, 7

Rumpke offers subscription curbside recycling in these communities. At this time, there is no anticipated change to these programs.

Drop-off Recycling Locations

RCSW maintains large, single stream recycling containers at locations throughout Richland County. These containers are managed through a contract 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. With the exception of the Ohio 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 specified hours.

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

The use of the containers is promoted through RCSW 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.

Materials that are currently collected include; plastic bottles, jugs and food tubs, paper and 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 RCSW and monitors the material that is collected for contamination or other issues that may need to be addressed. Throughout the review period, RCSW has not had issues with contaminated loads or open dumping at the drop-off locations. RCSW continues to educate the citizens of Richland County on the appropriate materials to recycle.

Table I1-B Full-Time, Urban Drop-offs

ID	Name	Start Date	End Date	Goal(s)
FTU1	Bellville/Jefferson Township Garage	on going	on going	1, 2, 7
FTU2	Jackson Township Garage	on going	on going	1, 2, 7
FTU3	Lexington Village Maintenance Garage	on going	on going	1, 2, 7
FTU4	Mifflin Township Fire Department	on going	on going	1, 2, 7
FTU5	Sharon Township Garage	on going	on going	1, 2, 7
FTU6	Richland County Collection/Recycling Facility	on going	on going	1, 2, 7
FTU7	Springfield Township	on going	on going	1, 2, 7
FTU8	Ohio National Guard	on going	on going	1, 2, 7
FTU9	BlueScope Recycling and Materials Drop-Off	on going	on going	1, 2, 7

RCSW will continue operation of these nine full-time urban drop-off locations through the planning period. RCSW will adjust the locations of the drop-off boxes as necessary to ensure appropriate access throughout Richland County.

Table I1-C Part-Time, Urban Drop-offs

ID	Name	Start Date	End Date	Goal(s)
PTU1	Eastview Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTU2	Malabar Middle School SCRAP Trailer	on going	on going	1, 2, 7
PTU3	Madison Jr. High SCRAP Trailer	on going	on going	1, 2, 7
PTU4	Discovery School SCRAP Trailer	on going	on going	1, 2, 7
PTU5	Eastern Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTU6	St. Mary's School – Mansfield Scrap Trailer	on going	on going	1, 2, 7
PTU7	Shelby Central School SCRAP Trailer	on going	on going	1, 2, 7
PTU8	Brinkerhoff Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTU9	Western Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTU10	St. Peters Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTU11	Madison South Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTU12	Prospect Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTU13	Crestview High School SCRAP Trailer	on going	on going	1, 2, 7
PTU14	Mifflin School SCRAP Trailer	on going	on going	1, 2, 7
PTU15	Mansfield Christian SCRAP Trailer	on going	on going	1, 2, 7
PTU16	Butler Elementary SCRAP Trailer	on going	on going	1, 2, 7

ID	Name	Start Date	End Date	Goal(s)
PTU17	Woodland Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTU18	St. Mary's School – Shelby SCRAP Trailer	on going	on going	1, 2, 7
PTU19	Ontario United Methodist SCRAP Trailer	on going	on going	1, 2, 7
PTU20	Ohio Bird Sanctuary SCRAP Trailer	on going	on going	1, 2, 7

RCSW will continue operation of these twenty part-time urban drop-off locations through the planning period. RCSW will adjust the locations of the SCRAP Trailer stops as necessary to ensure appropriate access throughout Richland County.

Table I1-D Full-Time, Rural Drop-offs

ID	Name	Start Date	End Date	Goal(s)
FTR1	Bloomingrove Township Garage	on going	on going	1, 2, 7
FTR2	Butler Village Garage	on going	on going	1, 2, 7
FTR3	Crestview High School, Weller Twp	on going	on going	1, 2, 7
FTR4	Lucas Village, Monroe Township	on going	on going	1, 2, 7
FTR5	Plymouth Township Garage	on going	on going	1, 2, 7
FTR6	Plymouth High School	on going	on going	1, 2, 7
FTR7	Weller Township Garage	on going	on going	1, 2, 7

RCSW will continue operation of these seven full-time rural drop-offs through the planning period. RCSW will adjust the locations of the drop-off boxes as necessary to ensure appropriate access throughout Richland County.

Table I1-E Part-Time, Rural Drop-offs

ID	Name	Start Date	End Date	Goal(s)
PTR1	Western Elementary SCRAP Trailer	on going	on going	1, 2, 7
PTR2	Eastern-Lexington SCRAP Trailer	on going	on going	1, 2, 7
PTR3	Crestview High School SCRAP Trailer	on going	on going	1, 2, 7
PTR4	Butler Elementary SCRAP Trailer	on going	on going	1, 2, 7

RCSW will continue operation of these four part-time rural drop-off locations through the planning period. RCSW will adjust the locations of the SCRAP Trailer stops as necessary to ensure appropriate access throughout Richland County.

Table I1-F Mixed solid waste materials recovery facility

Name	Start Date	End Date	Goal
Richland County Collection/Recycling Facility	on going	on going	1, 2, 7

RCSW operates the Mid-Ohio Recycling facility located at 1125 National Parkway in Mansfield. The Authority 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 opportunities for citizens to drop-off more common recyclables. The Mid-Ohio Facility also provides opportunities for small businesses that do not generate enough material to support the collection of recyclables at the business site.

The Authority maintains the Mid-Ohio Recycling facility as a drop-off location accepting electronic items, appliances, tires for recycling, and common household recyclables. The facility is open 7 a.m. to 4:00 p.m. Tuesday through Friday and 8 a.m. to 12 p.m. on Saturday. 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 include 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.

Table I1-G Other Residential Recycling Programs

Name	Start Date	End Date	Goal
Off Site Recycling Events	2024	On going	1, 2, 7

RCSW partnered with Metal Conversions to collect appliances and tires at Lexington High School. This program benefitted both Lexington School and the United Way. RCSW brought any Freon containing appliances back to 1125 National Parkway where RCSW employees removed the Freon for recycling and then the appliances were recycled with the rest of the materials collected at the school. RCSW intends to continue to collaborate with Metal Conversions and possibly move the event to different locations throughout Richland County.

Commercial/Institutional Sector Reduction and Recycling Programs

Table I1-H School Recycling

Name	Start Date	End Date	Goal
SCRAP Trailer Program – RCSW collects material and takes it to BlueScope Recycling. BlueScope writes a check to the school for the materials	on going	on going	1, 2, 7

Since 2001, RCSW has operated the SCRAP Trailer program in conjunction with Richland County Schools. RCSW works with school organizations that serve as site hosts to promote the drop-off programs. In turn, the host organization receives the proceeds from the sale of the materials. RCSW publishes a calendar listing the locations and times that the SCRAP Trailer will be available. This schedule is kept as consistent as possible but occasionally changes are necessary due to school closing or additional groups participating in the program.

RCSW operates the program with a truck and trailer owned by the Authority. RCSW staff delivers the trailer to each participating site, tends the trailer during collection, and then takes the materials to BlueScope Recycling where the trailers are emptied and the materials are processed. RCSW covers any processing costs and returns money earned from the sale of materials to the cooperating host organization.

In addition to providing community access to recycling, the authority uses this program as an educational opportunity for the students at the various schools that participate. It provides a connection between recycling and community and helps encourage participation.

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.

The SCRAP Trailer program has been a success and continues to be an important program for the Authority, providing recycling access and education. Over the years the amount of material collected through this program has generally increased.

This program is generously sponsored by BlueScope Recycling and the recycling trailer purchased in 2021 is partially funded by an Ohio EPA grant.

Table I1-I Collection Services (small businesses, government offices, etc.)

Name	Start Date	End Date	Goal
Government, Schools, business and Institution recycling collection route	on going	on going	1, 2, 7

RCSW provides a weekly recycling pick up service to Richland County government and school offices, businesses and institutions. Materials collected include typical office recyclables such as cans, plastic paper and cardboard.

Table I1-J Large Venue Recycling

Name	Start Date	End Date	Goal
Richland County Fair	on going	on going	1, 2, 7
King Wood Garden events	on going	on going	1, 2, 7

RCSW provides recycling containers for these events. Rumpke collects the materials.

Table I1-K Waste Assessments/Waste Audits

Name	Start Date	End Date	Goal
Waste Assessments and Audits	on going	on going	3, 4

RCSW provides waste audits to commercial and industrial entities upon request. Any interested businesses can find additional information on the Authority's website. An audit consists of a site visit by a representative from RCSW. The representative will review site operations and collect waste data to determine what materials can be recycled or reduced. After the audit is complete, the Authority provides the entity with recommendations on materials to recycle, how to prepare and store materials, and pickup/delivery options. Audits can be scheduled by contacting RCSW.

This 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.

RCSW measures the success of this program in terms of the number of assessments, tons identified for diversion, and cost savings identified. In recent years the demand for waste audits has dropped. This is likely due to the rise of programs such as ISO and other corporate ideals that internally promote lean operations and reduced waste production. Even though RCSW is not performing as many audits in recent years, these alternate corporate programs provide similar outcomes through the same ideals of waste reduction and reuse/recycling where possible.

Table I1-L Award/Recognition

Name	Start Date	End Date	Goal
Earth Stewardship Program	on going	on going	3,4,7

RCSW recognizes businesses in Richland County for their clean up and/or recycling efforts. This program encourages community groups and organizations to select a project and "Plant Pride …" in the community. Projects may be litter clean ups, beautifications, graffiti removal, recycling drives, etc. The top three projects receive awards. This program fosters community awareness and builds the community up.

Industrial Sector Reduction and Recycling Programs

Table I1-M Waste Assessments/Waste Audits

Name	Start Date	End Date	Goal
Waste Assessments and Audits	on going	on going	3,4

Upon request, RCSW provides assistance, guidelines and methodology for performing waste audits to help businesses and industry identify alternatives to disposal and potential for decrease in waste generation.

See above for waste audit information.

Table I1-N Collection Services

Name	Start Date	End Date	Goal
SCRAP Trailer partnership with BlueScope Recycling	on going	on going	1,2,3,4,7
Richland County Collection/Recycling Facility	on going	on going	1,2,3,5,6,

Collection services provided by RCSW include the recycling route for government and school offices, businesses and institutions described above.

The RCSW Facility at 1125 National Parkway in Mansfield is also open to Richland County businesses. Local businesses can recycle the same materials as residents.

Restricted/Difficult to Manage Wastes

Table I1-O Yard Waste

Name	Start Date	End Date	Goal
Richland County Composting Facility	on going	on going	1,2,6,
City of Mansfield Public Works	on going	on going	1,2,6
Willo'dell Yard Waste Facility	on going	on going	1,2,6

RCRSWMA Compost Facility, Cairns Road, Mansfield
Since 1997, RCSW has maintained a Class IV compost facility accepting yard waste from Richland County residents 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, Tuesday through Saturday from 8 a.m. to 4:00 p.m.

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 class IV compost facility at 480 Park Avenue East. This facility mainly collects leaves in the fall and distributes compost generated from the collected material. Mansfield City is responsible for the facility and operates it for the benefit of Mansfield residents.

Willo'dell Nursery
Willo'dell Nursery operates a class IV compost facility at their 1398 US-42 location in Ashland, Ohio. This commercial facility collects yard waste from the public and uses it in their operation and offers it for sale.

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

Table I1-P Household Hazardous Waste

Name	Start Date	End Date	Goal
Richland County Collection/Recycling Facility	on going	on going	1,2,5,6
Annual HHW Collection	on going	on going	1,2,5,6

RCSW collects select Household Hazardous Waste at their collection facility at 1125 National Parkway. Items accepted here include bulbs and batteries. Annually, RCSW holds a broader material collection at the Richland County Fairgrounds. Materials accepted at the

fairgrounds include paints, thinners, pesticides, batteries, cleaners, lawn chemicals, propane, pharmaceuticals, etc. For a full list see the annual flyer distributed by RCSW.

Table I1-Q Scrap Tires

Name	Start Date	End Date	Goal
Richland County Collection/Recycling Facility	on going	on going	1,2,5,6
Tire Amnesty Day at Fair Grounds (includes AG tires)	on going	on going	1,2,5,6

RCSW accepts passenger tires at their collection facility for a fee. Annually RCSW hosts a Tire Amnesty Day at the Richland County Fairgrounds. On the amnesty day, up to 10 tires per vehicle are collected free of charge. Additionally on the amnesty day, RCSW accepts agricultural tires up to 60 inches.

Table I1-R Electronic Equipment

Name	Start Date	End Date	Goal
Richland County Collection/Recycling Facility	on going	on going	1,2,5,6

RCSW accepts electronics at their collection facility. There is a fee to drop off items such as televisions and computer monitors.

Table I1-S Lead-Acid Batteries

Name	Start Date	End Date	Goal
Richland County Collection/Recycling Facility	on going	on going	1,2,5,6

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.

Table I1-T Appliances

Name	Start Date	End Date	Goal
Richland County Collection/Recycling Facility	on going	on going	1,2,5,6

The Mid-Ohio Recycling facility is operated by RCSW where the accepted materials include electronics and appliances. The Authority has held special collection events that feature appliances, electronics or tires 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. There is a fee to drop off items such as microwaves and Freon containing appliances. RCSW typically sells the scrap metal to BlueScope Recycling and recycles the Freon with Allied Supply.

Table I1-U Pharmaceuticals

Name	Start Date	End Date	Goal
Richland County Collection/Recycling Facility	on going	on going	1,2,5,6

In addition to the household hazardous waste collection, RCSW collaborates with METRIC, a county law enforcement group, to collect and manage prescription drugs. Typically, RCSW holds two collections each year at their facility.

Other Material Specific Programs

Table I1-V Glass

Name	Start Date	End Date	Goal
Part of single stream recycling	on going	on going	1,2,5

Glass is collected throughout Richland County as part of the single stream recycling drop-off program.

Funding/Grants

Table I1-W Incentive Based Grants

Name	Start Date	End Date	Goal
Earth Stewardship Celebration (Roadside Cleanup Dumpsters) – $11,000 pays running the program, trophies, dumpster rental	on going	on going	1,2,4,7
$500 grants to schools – 2 grants each year to buy recycle bins or other reduce, reuse, recycle programs (water refill station)	on going	on going	1,2,4,7

RCSW receives a $11,000 grant to run the Earth Stewardship Program. This grant pays for dumpsters used during roadside cleanup, trophies, advertising and administration.

RCSW awards two $500 grants to local schools each year. These grants cover costs for programs that promote reduce, reuse and recycle. An example of a recent award was for the installation of water bottle filling stations.

Table I1-X Other Funding/Grant Programs (list individually with a table and description)

Name	Start Date	End Date	Goal
Nobel Road improvements Collaboration with the Richland County Engineer $150,000 in 2023 and $150,000 in 2025			

The traffic into and out of the Noble Road Landfill is heavier than what Noble Road was originally designed to manage. To provide better access to the landfill and a safer road for Richland County residents, RCSW provided funds to the Richland County Engineer for improvements to Noble Road. This is not an annual program, but RCSW provides these funds when it is necessary to make repairs to Noble Road.

Facilities

Table I1-Y Materials Recovery Facilities/Recycling Centers

Name	Start Date	End Date	Goal
Richland County Collection/Recycling Facility	on going	on going	1,2,4,5,6,7
BlueScope Industries Recycling	on going	on going	1,2,5,6,7

The RCSW Material Recovery Facility and BlueScope Recycling provide opportunities for material recovery in Richland County. These two entities work together as well as with other Richland County groups and organizations to promote recycling.

Table I1-Z Landfills

Name	Start Date	End Date	Goal
Rumpke – Noble Road Landfill	on going	on going	

Rumpke operates the Noble Road Landfill. This facility accepts the majority of Richland County waste that is disposed of. The remaining volume in the Noble Road Landfill and the planned expansion of the facility will provide sufficient disposal capacity for the future.

Table I1-AA Closed Facility Maintenance (Closure/Post-Closure Care)

Name	Start Date	End Date	Goal
Closed Richland County Landfill	on going	on going	

RCSW maintains the Closed Richland County Landfill. This effort includes groundwater and explosive gas monitoring programs as well as general cap maintenance. In addition to the ongoing post closure care, RCSW is exploring the potential to use the closed landfill property for solar power.

Table I1-BB Transfer Facilities

Name	Start Date	End Date	Goal
Rumpke	on going	on going	1,2

Rumpke operates a transfer facility in Mansfield.

Table I1-CC Composting Facilities

Name	Start Date	End Date	Goal
Richland County Composting Facility	on going	on going	1,2
City of Mansfield Public Works	on going	on going	1,2

There are two Class IV compost facilities in Richland County. RCSW operates the Richland County Composting Facility, and the City of Mansfield operates a Class IV facility at 480 Park Avenue East.

Table I1-DD Data Collection

Name	Start Date	End Date	Goal
ADR Survey	on going	on going	10

RCSW annual surveys the commercial and industrial businesses in Richland County. This survey is intended to track recycling in Richland County and to gage the success of the recycling programs and determine if adjustments are necessary.

Table I1-EE Health department support (Allowable Use 3)

Name	Start Date	End Date	Goal
Provide $9000 annually for HD to administer the SW program in the County	on going	on going	

RCSW provides $9,000 annually to Richland Public Health to assist in the administration of the solid waste program in Richland County. This includes landfill inspections, open dump complaints, etc.

Table I1-FF Open Dumping/Litter Enforcement

Name	Start Date	End Date	Goal
Roadside clean ups, including tires	on going	on going	1,2,4,6

RCSW provides funds for the cleanup of open dumping incidents and tires along Richland County roadways. RCSW will attempt to recoup costs if the sheriff's deputy can find evidence of who left the waste along the road.

Table I1-GG Open dump/tire dump cleanup

Name	Start Date	End Date	Goal
Roadside clean ups, including tires	on going	on going	1,2,4,6

RCSW provides funds for the cleanup of open dumping incidents and tires along Richland County roadways. RCSW will attempt to recoup costs if the sheriff's deputy can find evidence of who left the waste along the road.

Table I1-HH Litter law enforcement (boards of health and sheriff offices) (allowable use 7)

Name	Start Date	End Date	Goal
Deputy Sheriff	2022	on going	1,2,4,7

RCSW provides funds for a full-time sheriff's deputy to investigate litter and open dumping incidents.

Table I1-II Disaster debris/disaster assistance

Name	Start Date	End Date	Goal
Offer assistance to EMA but none in recent years amount is dependent on the situation	on going	on going	1,2,6

RCSW has provided assistance for storm clean ups or other disasters that involve Richland County EMA.

Table I1-JJ Waste-to-energy projects

Name	Start Date	End Date	Goal
Noble Road Collecting gas to power vehicles			

Rumpke is pursuing a renewable gas project at the Noble Road Landfill. They are currently pursuing the use of landfill gas to power their fleet vehicles. This is not a RCSW program, but worth mentioning as it is happening in the county.

RCSW is pursuing a solar energy project at the Close Richland County Landfill. Details of this project have not yet been determined. RCSW is looking to partner with a third party to design and install a solar field that will maximize the energy production potential.

Appendix J
Reference Year Recycle Opportunity / Demonstration of Achieving Goal 1

Appendix J Reference Year Recycle Opportunity / Demonstration of Achieving Goal 1

1. Residential Sector Opportunity to Recycle
2. Commercial Sector Opportunity to Recycle
3. Demonstration of Meeting Other Requirements for Achieving Goal 1

1. Residential Sector Opportunity to Recycle

Table J1-A Demonstration of Residential Opportunity to Recycle

ID #	Richland	2023		2041	
	Name of Community (City, Village, Township)	Community Population	Population Credit	Community Population	Population Credit
	Non-subscription curbside				
	Subscription curbside				
SC1	Rumpke - Mansfield	47,865	7,865	44,503	4,503
SC2	Rumpke - Lexington	4,851		4,510	
SC3	Rumpke - Ontario	6,669	1,667	6,201	1,550
	Full-time, urban drop-off				
FTU1	Bellville Village serving Jefferson and Worthington Twps 89 School Street, Bellville	7,928	5,000	7,371	5,000
FTU2	Shelby City, Jackson Township 3761 Plymouth-Springmill Rd, Shelby	9,278	5,000	8,626	5,000
FTU3	Lexington Village serving Troy and Washington Twps 205 Mill Street, Lexington	13,714	5,000	12,751	5,000
FTU4	Mifflin Township Fire Department 2325 Park Avenue East, Mansfield	6,110	5,000	5,681	5,000
FTU5	Sharon Township Garage 5141 St. Rt. 61, Shelby	9,003	5,000	8,371	5,000
FTU6	Richland County Collection/Recycling Facility 1125 National Parkway, Mansfield	47,865	5,000	44,503	5,000
FTU7	Springfield Township Emerson Way, Railroad St. behind Duchess Gas Station	11,099	5,000	10,320	5,000
FTU8	BlueScope Recycling and Materials Drop-Off 2384 Springmill Rd, Mansfield	47,865	5,000	44,503	5,000

ID #	Richland	2023		2041	
	Name of Community (City, Village, Township)	Community Population	Population Credit	Community Population	Population Credit
	Part-time, urban drop-off				
PTU1	Eastview Elementary SCRAP Trailer 1262 Eastview Drive, Mansfield	47,865	2,500	44,503	2,500
PTU2	Malabar Middle School SCRAP Trailer 205 West Cook Road, Mansfield	47,865	2,500	44,503	2,500
PTU3	Madison Jr. High School SCRAP Trailer 690 Ashland Road, Mansfield	47,865	2,500	44,503	2,500
PTU4	Discovery School SCRAP Trailer 855 Millsboro Road Mansfield	47,865	2,500	44,503	2,500
PTU5	St. Mary's School Scrap Trailer 1630 Ashland Road, Mansfield	47,865	2,500	44,503	2,500
PTU6	Shelby Central School SCRAP Trailer 25 High School Ave. Shelby	9,278	2,500	8,626	2,500
PTU7	Brinkerhoff Elementary SCRAP Trailer Corner of South Linden and Oakwood Drive Maple Lake Park, Mansfield	47,865	2,500	44,503	2,500
PTU8	St. Peters Elementary SCRAP Trailer 63 South Mulberry Street Mansfield	47,865	2,500	44,503	2,500
PTU9	Madison South Elementary SCRAP Trailer 690 S. Illinois Ave. Mansfield	47,865	2,500	44,503	2,500
PTU10	Prospect Elementary SCRAP Trailer Prospect Park Mansfield	47,865	2,500	44,503	2,500
PTU11	Mifflin School SCRAP Trailer 411 Reed Road Mansfield	47,865	2,500	44,503	2,500
PTU12	Mansfield Christian School SCRAP Trailer 500 Logan Road Mansfield	47,865	2,500	44,503	2,500
PTU13	Woodland Elementary SCRAP Trailer 460 Davis Rd. Mansfield,	47,865	2,500	44,503	2,500
PTU14	St. Mary's School SCRAP Trailer 29 West Street, Shelby	9,278	1,778	8,626	1,126
PTU15	Ontario United Methodist Church SCRAP Trailer 3540 Park Ave. W. Ontario	6,669	2,500	6,201	2,500
PTU16	Ohio Bird Sanctuary SCRAP Trailer 3774 Orweiler Road, Mansfield	11,099	2,500	10,320	2,500

ID #	Richland	2023		2041	
	Name of Community (City, Village, Township)	Community Population	Population Credit	Community Population	Population Credit
	Full-time, rural drop-off				
FTR1	Bloomingrove Township Garage 466 State Route 603, Shiloh	1,290	1,290	1,199	1,199
FTR2	Butler Village Garage Traxler Street, Butler	937	937	871	871
FTR3	Crestview High School, Weller Twp 1575 State Route 96, Ashland	2,990	997	2,780	917
FTR4	Lucas Village, Monroe Township Pleasant St. & Union St, Lucas	2,744	2,500	2,551	2,500
FTR5	Plymouth Township Garage 7025 Kuhn Road Shelby	1,964	1,964	1,826	1,826
FTR6	Plymouth High School 400 Trux Street Plymouth	897	897	834	834
FTR7	Weller Township Garage Adario Rd & St. Rt. 545 Mansfield	2,990	997	2,780	917
FTR8	Ohio National Guard 1947 Harrington Memorial Road, Mansfield	900	900	837	837
	Part-time, rural drop-off				
PTR1	Western Elementary SCRAP Trailer 385 West Main Street Lexington, Ohio	4,851	2,426	4,510	2,255
PTR2	Eastern Elementary SCRAP Trailer 155 Castor Road, Lexington, Ohio	4,851	2,426	4,510	2,255
PTR3	Crestview High School SCRAP Trailer 1575 State Route 96, Ashland	2,990	997	2,780	1,001
PTR4	Butler Elementary SCRAP Trailer 125 College Street, Butler	937	937	871	871
Total County Population		**126,101**		**117,245**	
Total Population Credit		**106,078**		**100,962**	
Percent of Population		**84%**		**86%**	

Non-subscription curbside

There is no non-subscription curbside service in Richland County.

Subscription curbside

Mansfield's population for the subscription curbside service was adjusted based on the population credits taken for the drop-off locations. The total population credits for the drop-off locations is 40,000. The remainder of the population for the city of Mansfield was used as the credit for the subscription service.

The total population credits for the drop-off locations in Lexington is 4,851. Because this accounts for the entire population of Lexington, the subscription service credit is 0.

Ontario's credit for the subscription service is 25% of the population, or 1,667. The credit for the subscription curbside service did not need to be adjusted based on the credits taken for the drop-off locations.

Full-time Urban Drop-off

The full credit of 5,000 was used for each of the full-time urban drop-off locations.

Part-time Urban Drop-off side

The full credit of 2,500 was used for each of the part-time urban drop-off locations, except for St. Mary's School SCRAP Trailer (PTU14). Because Shelby has a full-time urban drop-off ((FTU2) and another part-time urban drop-off (PTU6), the credit for St. Mary's School SCRAP Trailer was the balance of Shelby's population.

Full-time Rural Drop-off

The credit for the full-time rural drop-off locations was generally the full population of the community being served. This adjustment from the full 2,500 credit was made because the population for those communities was less than the allowable 2,500. Exceptions include Lucas Village, Monroe Township (FTR4), the population was large enough to take the full 2,500 credit, and Crestview High School and Weller Township Garage (FTR3 and FTR7), these drop-offs along with a part time rural drop-off all serve the same community and the credit for each was one third, or 997.

Part-time Rural Drop-off

The Eastern and Western Elementary SCRAP Trailer stops (PTR1 and PTR2) are both in Lexington. The credit for each of these stops was half the population of Lexington. The Crestview High School SCRAP Trailer is part of the three drop-off locations serving Weller Township. It was adjusted as described above.

2. Commercial Sector Opportunity to Recycle

Table J2-A Demonstration of Commercial Opportunity to Recycle

Service Provider	Type of Recycling Service Provided	Plastic Containers	Office Paper	Corrugated Cardboard	Glass Containers	Aluminum Cans
Richland						
RCSW	Commercial Recycling Routes	X	X	X	X	X
RCSW	Drop-off at the Recycling Center	X	X	X	X	X
BlueScope	BlueScope Recycling	X	X	X	X	X

Richland County Solid Waste offers a recycling route to the commercial and institutional generators throughout Richland County. This service collects the materials from county businesses and takes the materials to BlueScope Recycling or back to the Richland County drop-off center. Businesses are also encouraged to use the drop-off center.

BlueScope Recycling offers a drop-off service to businesses as well.

3. Demonstration of Meeting Other Requirements for Achieving Goal 1

Residential/Commercial Waste Reduction and Recycling Rate

In reference year, 2023, 20.84% of the residential/commercial waste generated in Richland County was recycled. Throughout the planning period, RCSW anticipates slight annual increases that will result in 21.83% of the residential/ commercial waste generated being recycled.

Encouraging Participation

- The SCRAP Trailer Program encourages residents to participate by providing funding back to the schools.
- Richland County Solid Waste provides information about all the recycling programs offered anytime they provide educational programming to schools and community groups.
- Booth at Richland County Fair, Belleville Fair, Malabar Farms spring event to promote RCSW programs.

Appendix K
Waste Reduction & Recycling Rates / Demonstration of Achieving Goal 2

Appendix K Waste Reduction & Recycling Rates / Demonstration of Achieving Goal 2

1. Annual Rate of Waste Reduction

1. Annual Rate of Waste Reduction

Table K1-A Annual Rate of Waste Reduction: Residential/Commercial Solid Waste

Year	Population	Recycled	Disposed	Total Generated	Waste Reduction & Recycling Rate (%)	Per Capita Waste Reduction & Recycling Rate (ppd)
2023	126,101	27,807	105,654	133,461	20.84%	1.21
2024	125,004	28,366	102,661	131,027	21.65%	1.24
2025	124,826	28,341	102,515	130,856	21.66%	1.24
2026	124,547	28,310	102,286	130,595	21.68%	1.25
2027	125,319	28,356	102,920	131,276	21.60%	1.24
2028	125,040	28,325	102,690	131,015	21.62%	1.24
2029	124,761	28,293	102,461	130,755	21.64%	1.24
2030	123,430	28,183	101,368	129,552	21.75%	1.25
2031	122,952	28,137	100,976	129,113	21.79%	1.25
2032	122,474	28,092	100,583	128,675	21.83%	1.26
2033	121,996	28,092	100,583	128,675	21.83%	1.26
2034	121,518	28,092	100,583	128,675	21.83%	1.27
2035	121,040	28,092	100,583	128,675	21.83%	1.27
2036	120,534	28,092	100,583	128,675	21.83%	1.28
2037	120,028	28,092	100,583	128,675	21.83%	1.28
2038	119,522	28,092	100,583	128,675	21.83%	1.29
2039	119,016	28,092	100,583	128,675	21.83%	1.29
2040	118,510	28,092	100,583	128,675	21.83%	1.30
2041	117,245	28,092	100,583	128,675	21.83%	1.31

Sources of Information: Table C-2; Table E-8; Table G-2

Assumptions:
The generation and recycling rates for years 6 through 15 of the planning period were held constant. This was due to unrealistic prediction results that resulted in later years of the plan.

Appendix L
Education & Outreach

Appendix L Education & Outreach

1. Minimum Required Education Programs
2. Outreach and Marketing Plan
3. General Education Requirements

1. Minimum Required Education Programs

Table L1-A Web Page

Name	Start Date	End Date	Goal
https://www.richlandrecycles.com/	on going	on going	3,4,5,6

RCSW maintains richlandrecycles.com as their website. Richland County citizens can visit the website and find resources about recycling, education programs and composting. RCSW advertises the web page on bling distributed at in-person events such as HHW recycling, tire collections and the Richland County Fair. They use billboards and social media to advertise special events and direct citizens to the webpage for event details. The RCSW Education Coordinator is responsible for maintenance and updates on the webpage and Facebook page.

Table L1-B Infrastructure Inventory

Name	Start Date	End Date	Goal
Noble Road Landfill	on going	on going	1,3,4
Rumpke Transfer Facility	on going	on going	1,3,4
Scrap Tires	on going	on going	1,3,4
Curbside	on going	on going	1,3,4
Drop-off	on going	on going	1,3,4
Compost	on going	on going	1,3,4
Yard Waste Collection	on going	on going	1,3,4
Recycling Centers	on going	on going	1,3,4
Material Recovery Facilities	on going	on going	1,3,4

This infrastructure inventory is available on RCSW's web page. As disposal and recycling services are added or discontinued, the inventory is updated.

Table L1-C Resource Guide

Name	Start Date	End Date	Goal
Residential Guide to Recycling	on going	on going	3,4,6
Business Recycling-Waste-Disposal Service Guide	on going	on going	3,4,5,6

RCSW maintains a resource guide for both residents and businesses in Richland County. The resource guides can be found on RCSW's webpage, and they are updated annually to add or remove recycling outlets as appropriate.

Table L1-D Speaker/Presenter

Name	Start Date	End Date	Goal
Environmental Classroom	on going	on going	3,4

RCSW employs an education coordinator to oversee the Environmental Classroom. The person filling this position organizes field trips, contests, and a grant program for the Richland County schools as well as provides information and presentations to civic groups. They also provide information for distribution at special events such as HHW and scrap tire collections, and the Richland County Fair.

The Environmental Classroom offers schools the opportunity for Grades K through 5 to experience a day of educational programing centered around recycling and the environment. The program provides standard based activities related to science, math and social studies. In addition to providing the programming at their facility, RCSW also provides transportation assistance in the form of a $100 stipend per visiting class to help cover bus costs.

Additional educational offerings include Inservice Days for teachers to provide resources with lesson plans, books, videos, "teacher boxes" and other materials suitable for children at all age levels for the use of teachers and youth leaders. The RCSW Education Coordinator maintains public awareness of this valuable library.

2. Outreach and Marketing Plan

General:

The 2020 State Plan states each Solid Waste District will provide education, outreach, marketing, and technical assistance. This includes the following:

- Address five target audiences
- Follow best practices when developing and selecting priority outreach programs
- Select an outreach priority and provide education and outreach

The Outreach and Marketing Plan needs to demonstrate these best practices:

- Demonstrate how the SWMD will address the five target audiences
- Explain how the SWMD will follow best practices when developing and selecting outreach programs
- The SWMD will select an outreach priority and provide education and outreach programs to all appropriate audiences in the context of using social marketing principles and tools as the priority.

As shown above and below RCSW uses a variety of different tools to promote change and education. Mailers, website, and promotional items are all part of the outreach that RCSW disseminates throughout the county.

All five audiences, which include residents, schools, industries, institutions and commercial businesses, and communities and elected officials are able to use the website, social media and Recycling Guides section as an online resource.

Programs

Table L2-A Residential Sector

Name	Start Date	End Date	Goal
website/ social media, promotional items, events	on going	on going	3,4,6

Website/ Social media

Social media is used to launch new events and educational tools. https://www.facebook.com/RichlandCountySolidWaste has 998 followers that are able to stay up to date on events and resources.

Events

The RCSW staff participate in the County Fair, Belleville Fair, Malabar Farms Spring event, and Earth Day events throughout the year. Residents, businesses and students are encouraged to learn about recycling during these events. RCSW uses all staff to answer questions and talk about education.

Table L2-B Commercial/Institutional Sector

Name	Start Date	End Date	Goal
Commercial/ Institutional Outreach	on going	on going	3,4,5,6

The website and social media help to reach the commercial sector. RCSW participates in events held at commercial businesses. Information is provided for the commercial sector on appropriate recycling options for various materials. The data collected on the ADR and by surveying will provide data analysis. Waste audits are available by RCSW upon request. There were no waste audit requests during the reference year.

Target for next five years: Promote the Richland County Collection/Recycling Facility to the commercial and institutional sector. This could be done through mailings or social media.

Table L2-C Industrial Sector

Name	Start Date	End Date	Goal
Industrial Business Engagement	on going	on going	3,4,5,6

RCSW promotes the website, social media, and the Recycling Guide for businesses. Additionally, waste audits are available upon request.

Target for the next five years: send mailers or emails to 5 industrial businesses annually to educate on diversion options.

Table L2-D Political Leaders

Name	Start Date	End Date	Goal
Communities and Elected Officials Outreach	on going	on going	3,4,6

Outreach is provided by emails to each community council or township on an annual basis. This includes sharing social media posts and upcoming events. Staff communicates with individuals and provides promotional items.

Target for next five years: the Environmental Deputy Sheriff will attend Richland County Township meetings and provide information on the programs offered through RCSW.

Table L2-E Schools

Name	Start Date	End Date	Goal
SCRAP Trailer; Environmental Classroom; Commercial Recycling Route	on going	on going	3,4,6

RCSW promotes the website, social media, and the Recycling Guide to the Richland County schools.

Environmental field trips are offered to all the schools. These events include a lesson taught in the RCSW Environmental Classroom, a tour of the Richland County Collection/Recycling Facility and the Gorman Nature Center.

The SCRAP Trailer is promoted as a way to involve the community and schools in the collection of recyclables. It is a visible program at the school that shows children recycling can be a way to help your community. This program reinforces new habits that are intended to promote recycling. RCSW partners with other businesses in Richland County to hold recycling events at schools. Similar to the SCRAP Trailer, these events also benefit the schools through the sale of the recyclables and provide a visual reminder that recycling is beneficial to our community.

RCSW sponsors an annual Calendar/Poster Contest for grades K through 12. The posters are judged by the RCSW Board of Trustees and staff. Twelve winning posters are chosen to be used in a school year calendar and distributed to schools, county agencies and to the public. The twelve winning posters are also 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 provides valuable information about recycling and services provided by RCSW.

Target for the next five years: Send email annually to each school district in Richland County to encourage recycling, show available diversion programs and assess interest in hosting recycling events.

3. Outreach Priority

Table L3-A Electronics Collection/Recycling

Name	Start Date	End Date	Goal
Electronics Recycling	January 1, 2027	December 31, 2031	1,2,3,4,5,6

Goal/Purpose: Electronics are frequently discarded. In an effort to reduce the amount of electronics sent to landfills, RCSW will focus on collection of electronics at the Richland County Collection/Recycling facility and other events throughout the year.

The target audience includes all five target audiences and includes residents, schools, industries, institutions and commercial businesses, and communities and elected officials.

RCSW will focus on education and hosting opportunities for events as the strategy. The education will be focused on changing unwanted behaviors and providing diversion options. RCSW will use social media, flyers distributed at the SCRAP Trailer, information provided to teachers and radio ads (targeted for HHW collections and other events) to provide education and disseminate information regarding electronics recycling. RCSW will contact schools and businesses by email, social media, and/or mailers that promote the education of the program and to collect electronics. This information will also be shared at speaker events that RCSW attends.

Events will be held continuously at the Richland County Collection/Recycling Facility and periodically throughout the county. It will be a goal to include electronics recycling at as many special collection days as possible, especially the HHW and appliance collections.

The Richland County Collection/Recycling Facility accepts electronics for recycling. By sending drop-off flyers and promoting the facility, a better awareness of available diversion options will be made. RCSW will also share the website of Ohio EPA that focuses on environmental educational materials. Electronics based information regarding batteries specifically could potentially help prevent truck and material recovery facility fires while diverting material from the landfill.

RCSW will use 2027 as a base year to track any change in the amount of electronics collected for recycling. RCSW hopes to accomplish higher diversion rates for electronic waste in Richland County with a goal of 5% increase per year through the planning period. Results will be tracked through our annual district report.

Appendix M
Waste Management Capacity Analysis

Appendix M Waste Management Capacity Analysis

1. Access to Publicly Available Landfill Facilities
2. Access to Captive Landfill Facilities
3. Incinerators and Energy Recovery Facilities

1. Access to Publicly Available Landfill Facilities

Table M1-A Remaining Operating Life of Publicly Available Landfills

Facility	Location (County)	Years of Remaining Capacity [1]	Status (enter no change, planned expansion, pending expansion, or closing)	Applicable Dates
In-District				
Rumpke of Northern Ohio Inc Noble Road Landfill	Richland	15		12/31/2023
Out-of-District				
American Landfill, Inc	Stark	95		12/31/2023
Carbon Limestone Landfill LLC	Mahoning	32		12/31/2023
County Environmental Landfill of Wyandot	Wyandot	103		12/31/2023
Countywide RDF - Republic Services	Stark	61		
Crawford County Landfill	Crawford	18		12/31/2023
Erie County Sanitary Landfill	Erie	33		
Evergreen Recycling & Disposal	Wood	102		12/31/2023
Hancock County Landfill	Hancock	18		
Kimble Sanitary Landfill	Tuscarawas	9		
Pine Grove Regional Facility	Fairfield	93		12/31/2023
Port Clinton Landfill Inc	Ottawa	81		12/31/2023
SWACO Franklin County Sanitary Landfill	Franklin	40		12/31/2023
Suburban Landfill Inc	Perry	90		

[1] The years of remaining capacity are based on the 2023 annual report for the facility and current rate of use.

Source(s) of Information: Ohio EPA 2023 Ohio Facility Data Report Tables
https://dam.assets.ohio.gov/image/upload/epa.ohio.gov/Portals/34/document/general/2023-FDR.pdf

2. Access to Captive Landfill Facilities

Table M2-A Remaining Operating Life of Privately Available (i.e. captive) Landfills

Facility	Location	Years of Remaining Capacity
None		

3. Incinerators and Energy Recovery Facilities

None

Appendix N
Evaluating Greenhouse Gas Emissions

Appendix N Evaluating Greenhouse Gas Emissions

1. Waste Reduction Model (WARM) Input · Run 1
2. Waste Reduction Model (WARM) Input · Run 2

1. Waste Reduction Model (WARM) Input · Run 1

Greenhouse Gas Emissions Analysis · Run 1

- Summary Report
  - GHG Emissions from Baseline Waste Management ($MTCO_2E$)
  - GHG Emissions from Alternative Waste Management Scenario ($MTCO_2E$)
- WARM Results
  - Per Ton Estimates of GHG Emissions for Baseline and Alternative Management Scenarios
  - GHG Emissions from Baseline Management of Municipal Solid Waste
  - GHG Emissions from Alternative Management of Municipal Solid Waste
  - Incremental GHG Emissions from Alternative Management of Municipal Solid Waste
- Production and End-of-Life Report
  - Baseline and Alternate Production + End-of-Life Emissions ($MTCO_2E$)
  - Material Weight for Baseline and Alternate Scenarios (Short Tons)
  - Baseline Waste Management Scenario Production + End-of-Life Impact
  - Alternate Waste Management Scenario Production + End-of-Life Impact

Energy Use Analysis · Run 1

- Summary Report
  - Energy Use from Baseline Waste Management (million BTU)
  - Energy Use from Alternative Waste Management Scenario (million BTU)
- WARM Results
  - Per Ton Estimates of Energy Use for Alternative Management Scenarios
  - Energy Use from Baseline Management of Municipal Solid Waste
  - Energy Use from Alternative Management of Municipal Solid Waste
  - Incremental Energy Use from Alternative Management of Municipal Solid Waste
- Production and End-of-Life Report
  - Baseline and Alternate Production + End-of-Life Energy Use (million BTU)
  - Material Weight for Baseline and Alternate Scenarios (Short Tons)
  - Baseline Waste Management Scenario Production + End-of-Life Impact
  - Alternate Waste Management Scenario Production + End-of-Life Impact

Table N1-A GHG Emissions from Baseline & Alternative Waste Management ($MTCO_2E$)

GHG Emissions from Baseline Waste Management ($MTCO_2E$)						
Material	**Tons Recycled***	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Tons Anaerobically Digested**	**Total $MTCO_2E$**
Corrugated Containers	-	7,656.00	-	NA	NA	(748.14)
Mixed Paper (general)	-	4,403.00	-	NA	NA	(774.95)
Mixed Plastics	-	737.00	-	NA	NA	14.93
Steel Cans	-	525.00	-	NA	NA	10.63
Glass	-	1,518.00	-	NA	NA	30.75
Dimensional Lumber*	-	179.00	-	NA	NA	(184.92)
Tires	-	1,841.00	-	NA	NA	37.29
Mixed Recyclables	-	4,914.00	-	NA	NA	(1,145.64)
						(2,760.06)

GHG Emissions from Alternative Waste Management ($MTCO_2E$)							
Material	**Tons Source Reduced**	**Tons Recycled***	**Tons Landfilled**	**Tons Combusted**	**Tons Composted**	**Tons Anaerobically Digested**	**Total $MTCO_2E$**
Corrugated Containers	-	7,656.00	-	-	NA	NA	(24,004.14)
Mixed Paper (general)	-	4,403.00	-	-	NA	NA	(15,610.94)
Mixed Plastics	-	737.00	-	-	NA	NA	(682.11)
Steel Cans	-	525.00	-	-	NA	NA	(961.84)
Glass	-	1,518.00	-	-	NA	NA	(419.10)
Dimensional Lumber*	-	179.00	-	-	NA	NA	(297.06)
Tires	-	1,841.00	-	-	NA	NA	(692.77)
Mixed Recyclables	NA	4,914.00	-	-	NA	NA	(13,763.87)
							(56,431.85)

TOTAL
Change (Alt - Base) $MTCO_2E$
(23,256.00)
(14,835.99)
(697.04)
(972.47)
(449.85)
(112.14)
(730.06)
(12,618.24)
(53,671.79)

Note: a negative value (i.e., a value in parentheses) indicates an emission reduction; a positive value indicates an emission increase.

**Wood Flooring and Dimensional Lumber model reuse under the recycling management pathway.*

a) For explanation of methodology, see the EPA WARM Documentation: *Documentation Chapters for Greenhouse Gas Emission, Energy and Economic Factors Used in the Waste Reduction Model* available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.
c) The GHG emissions results estimated in WARM indicate the full life-cycle benefits waste management alternatives. Due to the timing of the GHG emissions from the waste management pathways, (e.g., avoided landfilling and increased recycling), the actual GHG implications may accrue over the long-term. Therefore, one should not interpret the GHG emissions implications as occurring all in one year, but rather through time.

Total is equivalent to:

Removing annual emissions from	11,395	Passenger Vehicles
Conserving	6,039,360	Gallons of Gasoline
Conserving	2,236,325	Cylinders of Propane Used for Home Barbeques
	0.00301%	Annual CO2 emissions from the U.S. transportation sector
	0.00297%	Annual CO2 emissions from the U.S. electricity sector

Total GHG Emissions from Baseline MSW Generation and Management ($MTCO_2E$):	(2,760.06)
Total GHG Emissions from Alternative MSW Generation and Management ($MTCO_2E$):	(56,431.85)
Incremental GHG Emissions ($MTCO_2E$):	**(53,671.79)**

$MTCO_2E$ = Metric Tons of Carbon Dioxide Equivalent

Table N1-B Per Ton Estimates of GHG Emissions for Baseline and Alternative Management Scenarios

Material	GHG Emissions per Ton of Material Produced ($MTCO_2E$)	GHG Emissions per Ton of Material Source Reduced ($MTCO_2E$)	GHG Emissions per Ton of Material Recycled ($MTCO_2E$)	GHG Emissions per Ton of Material Landfilled ($MTCO_2E$)	GHG Emissions per Ton of Material Combusted ($MTCO_2E$)	GHG Emissions per Ton of Material Composted ($MTCO_2E$)	GHG Emissions per Ton of Material Anaerobically Digested ($MTCO_2E$)
Corrugated Containers	5.58	(5.58)	(3.14)	(0.10)	(0.49)	NA	NA
Magazines/third-class mail	8.57	(8.57)	(3.07)	(0.53)	(0.35)	NA	NA
Newspaper	4.68	(4.68)	(2.71)	(0.96)	(0.56)	NA	NA
Office Paper	7.95	(7.95)	(2.86)	0.72	(0.47)	NA	NA
Phonebooks	6.17	(6.17)	(2.62)	(0.96)	(0.56)	NA	NA
Textbooks	9.02	(9.02)	(3.10)	0.72	(0.47)	NA	NA
Mixed Paper (general)	6.07	(6.07)	(3.55)	(0.18)	(0.49)	NA	NA
Mixed Paper (primarily residential)	6.00	(6.00)	(3.55)	(0.23)	(0.49)	NA	NA
Mixed Paper (primarily from offices)	7.37	(7.37)	(3.58)	(0.11)	(0.45)	NA	NA
Food Waste	3.66	(3.66)	NA	0.36	(0.13)	(0.15)	(0.04)
Food Waste (non-meat)	0.76	(0.76)	NA	0.36	(0.13)	(0.15)	(0.04)
Food Waste (meat only)	15.10	(15.10)	NA	0.32	(0.13)	(0.15)	(0.04)
Beef	30.09	(30.09)	NA	0.30	(0.13)	(0.15)	(0.04)
Poultry	2.45	(2.45)	NA	0.34	(0.13)	(0.15)	(0.04)
Grains	0.62	(0.62)	NA	0.94	(0.13)	(0.15)	(0.04)
Bread	0.66	(0.66)	NA	0.68	(0.13)	(0.15)	(0.04)
Fruits and Vegetables	0.44	(0.44)	NA	0.17	(0.13)	(0.15)	(0.04)
Dairy Products	1.75	(1.75)	NA	0.33	(0.13)	(0.15)	(0.04)
Yard Trimmings	NA	NA	NA	(0.26)	(0.17)	(0.11)	(0.09)
Grass	NA	NA	NA	0.08	(0.17)	(0.11)	0.00
Leaves	NA	NA	NA	(0.58)	(0.17)	(0.11)	(0.14)
Branches	NA	NA	NA	(0.69)	(0.17)	(0.11)	(0.22)
HDPE	1.42	(1.42)	(0.76)	0.02	1.29	NA	NA
LDPE	1.80	(1.80)	NA	0.02	1.29	NA	NA
PET	2.17	(2.17)	(1.04)	0.02	1.24	NA	NA
LLDPE	1.58	(1.58)	NA	0.02	1.29	NA	NA
PP	1.52	(1.52)	(0.79)	0.02	1.29	NA	NA
PS	2.50	(2.50)	NA	0.02	1.65	NA	NA

Material	GHG Emissions per Ton of Material Produced ($MTCO_2E$)	GHG Emissions per Ton of Material Source Reduced ($MTCO_2E$)	GHG Emissions per Ton of Material Recycled ($MTCO_2E$)	GHG Emissions per Ton of Material Landfilled ($MTCO_2E$)	GHG Emissions per Ton of Material Combusted ($MTCO_2E$)	GHG Emissions per Ton of Material Composted ($MTCO_2E$)	GHG Emissions per Ton of Material Anaerobically Digested ($MTCO_2E$)
PVC	1.93	(1.93)	NA	0.02	0.66	NA	NA
Mixed Plastics	1.87	(1.87)	(0.93)	0.02	1.26	NA	NA
PLA	2.45	(2.45)	NA	(1.64)	(0.63)	(0.13)	NA
Desktop CPUs	20.86	(20.86)	(1.49)	0.02	(0.66)	NA	NA
Portable Electronic Devices	29.83	(29.83)	(1.06)	0.02	0.65	NA	NA
Flat-Panel Displays	24.19	(24.19)	(0.99)	0.02	0.03	NA	NA
CRT Displays	NA	NA	(0.57)	0.02	0.45	NA	NA
Electronic Peripherals	10.32	(10.32)	(0.36)	0.02	2.08	NA	NA
Hard-Copy Devices	7.65	(7.65)	(0.56)	0.02	1.20	NA	NA
Mixed Electronics	20.79	(20.79)	(0.90)	0.02	0.34	NA	NA
Aluminum Cans	4.80	(4.80)	(9.13)	0.02	0.03	NA	NA
Aluminum Ingot	7.48	(7.48)	(7.20)	0.02	0.03	NA	NA
Steel Cans	3.03	(3.03)	(1.83)	0.02	(1.59)	NA	NA
Copper Wire	6.72	(6.72)	(4.49)	0.02	0.03	NA	NA
Mixed Metals	3.65	(3.65)	(4.39)	0.02	(1.02)	NA	NA
Glass	0.53	(0.53)	(0.28)	0.02	0.03	NA	NA
Asphalt Concrete	0.11	(0.11)	(0.08)	0.02	NA	NA	NA
Asphalt Shingles	0.19	(0.19)	(0.09)	0.02	(0.35)	NA	NA
Carpet	3.68	(3.68)	(2.38)	0.02	1.10	NA	NA
Clay Bricks	0.27	(0.27)	NA	0.02	NA	NA	NA
Concrete	NA	NA	(0.01)	0.02	NA	NA	NA
Dimensional Lumber*	2.11	(2.11)	(1.66)	(1.03)	(0.58)	NA	NA
Drywall	0.22	(0.22)	0.03	(0.06)	NA	NA	NA
Fiberglass Insulation	0.38	(0.38)	NA	0.02	NA	NA	NA
Fly Ash	NA	NA	(0.87)	0.02	NA	NA	NA
Medium-density Fiberboard	3.05	(3.05)	NA	(0.89)	(0.58)	NA	NA
Structural Steel	1.67	(1.67)	(1.93)	0.02	NA	NA	NA
Vinyl Flooring	0.58	(0.58)	NA	0.02	(0.31)	NA	NA
Wood Flooring*	4.11	(4.11)	(3.68)	(0.86)	(0.74)	NA	NA
Tires	4.30	(4.30)	(0.38)	0.02	0.50	NA	NA
Mixed Recyclables	NA	NA	(2.80)	(0.23)	(0.42)	NA	NA
Mixed Organics	NA	NA	NA	0.05	(0.15)	(0.13)	(0.06)
Mixed MSW	NA	NA	NA	0.14	0.01	NA	NA

Table N1-C GHG Emissions from Baseline Management of Municipal Solid Waste

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Baseline Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Baseline Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Baseline Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Baseline Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total GHG Emissions ($MTCO_2E$)
Corrugated Containers	7,656.00	0.00	0.00	7,656.00	(748.14)	0.00	0.00	NA	NA	NA	NA	(748.14)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	4,403.00	0.00	0.00	4,403.00	(774.95)	0.00	0.00	NA	NA	NA	NA	(774.95)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	737.00	0.00	0.00	737.00	14.93	0.00	0.00	NA	NA	NA	NA	14.93
PLA	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Baseline Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Baseline Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Baseline Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Baseline Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total GHG Emissions ($MTCO_2E$)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	525.00	0.00	0.00	525.00	10.63	0.00	0.00	NA	NA	NA	NA	10.63
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	1,518.00	0.00	0.00	1,518.00	30.75	0.00	0.00	NA	NA	NA	NA	30.75
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	179.00	0.00	0.00	179.00	(184.92)	0.00	0.00	NA	NA	NA	NA	(184.92)
Drywall	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	1,841.00	0.00	0.00	1,841.00	37.29	0.00	0.00	NA	NA	NA	NA	37.29
Mixed Recyclables	4,914.00	0.00	0.00	4,914.00	(1,145.64)	0.00	0.00	NA	NA	NA	NA	(1,145.64)
Mixed Organics	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	**21,773.00**	**0.00**	**0.00**	**21,773.00**	**(2,760.06)**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(2,760.06)**

Table N1-D GHG Emissions from Alternative Management of Municipal Solid Waste

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	GHG Emissions from Source Reduction ($MTCO_2E$)	Alternative Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Alternative Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Alternative Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Alternative Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Alternative Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total GHG Emissions ($MTCO_2E$)
Corrugated Containers	7,656.00	0.00	0.00	7,656.00	(24,004.14)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(24,004.14)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	4,403.00	0.00	0.00	4,403.00	(15,610.94)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(15,610.94)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	737.00	0.00	0.00	737.00	(682.11)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(682.11)
PLA	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	GHG Emissions from Source Reduction ($MTCO_2E$)	Alternative Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Alternative Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Alternative Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Alternative Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Alternative Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total GHG Emissions ($MTCO_2E$)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	525.00	0.00	0.00	525.00	(961.84)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(961.84)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	1,518.00	0.00	0.00	1,518.00	(419.10)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(419.10)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	179.00	0.00	0.00	179.00	(297.06)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(297.06)
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	1,841.00	0.00	0.00	1,841.00	(692.77)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(692.77)
Mixed Recyclables	4,914.00	NA	NA	4,914.00	(13,763.87)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(13,763.87)
Mixed Organics	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	**21,773.00**	**0.00**	**0.00**	**21,773.00**	**(56,431.85)**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(56,431.85)**

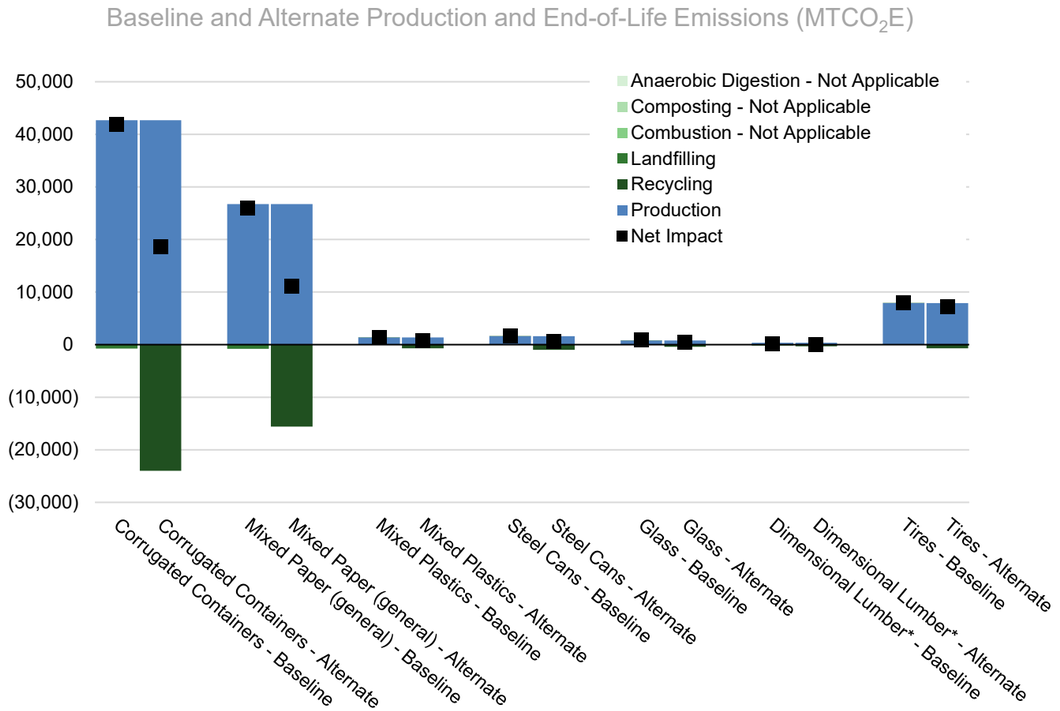
Table N1-E Incremental GHG Emissions from Alternative Management of Municipal Solid Waste

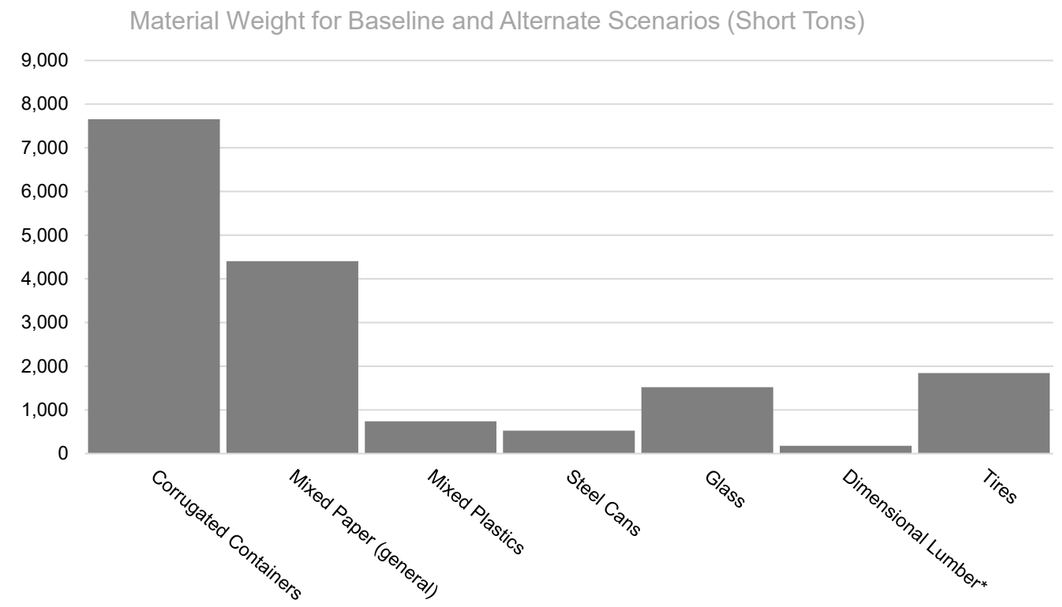
Material	Source Reduction (Tons)	Incremental GHG Emissions from Source Reduction ($MTCO_2E$)	Incremental Recycling (Tons)	Incremental GHG Emissions from Recycling ($MTCO_2E$)	Incremental Landfilling (Tons)	Incremental GHG Emissions from Landfilling ($MTCO_2E$)	Incremental Combustion (Tons)	Incremental GHG Emissions from Combustion ($MTCO_2E$)	Incremental Composting (Tons)	Incremental GHG Emissions from Composting ($MTCO_2E$)	Incremental Anaerobic Digestion (Tons)	Incremental GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total Incremental GHG Emissions ($MTCO_2E$)
Corrugated Containers	0.00	0.00	7,656.00	(24,004.14)	(7,656.00)	748.14	0.00	0.00	NA	NA	NA	NA	(23,256.00)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	4,403.00	(15,610.94)	(4,403.00)	774.95	0.00	0.00	NA	NA	NA	NA	(14,835.99)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	0.00	0.00	737.00	(682.11)	(737.00)	(14.93)	0.00	0.00	NA	NA	NA	NA	(697.04)
PLA	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Source Reduction (Tons)	Incremental GHG Emissions from Source Reduction ($MTCO_2E$)	Incremental Recycling (Tons)	Incremental GHG Emissions from Recycling ($MTCO_2E$)	Incremental Landfilling (Tons)	Incremental GHG Emissions from Landfilling ($MTCO_2E$)	Incremental Combustion (Tons)	Incremental GHG Emissions from Combustion ($MTCO_2E$)	Incremental Composting (Tons)	Incremental GHG Emissions from Composting ($MTCO_2E$)	Incremental Anaerobic Digestion (Tons)	Incremental GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total Incremental GHG Emissions ($MTCO_2E$)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	525.00	(961.84)	(525.00)	(10.63)	0.00	0.00	NA	NA	NA	NA	(972.47)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	0.00	0.00	1,518.00	(419.10)	(1,518.00)	(30.75)	0.00	0.00	NA	NA	NA	NA	(449.85)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	0.00	0.00	179.00	(297.06)	(179.00)	184.92	0.00	0.00	NA	NA	NA	NA	(112.14)
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	1,841.00	(692.77)	(1,841.00)	(37.29)	0.00	0.00	NA	NA	NA	NA	(730.06)
Mixed Recyclables	NA	NA	4,914.00	(13,763.87)	(4,914.00)	1,145.64	0.00	0.00	NA	NA	NA	NA	(12,618.24)
Mixed Organics	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	**0.00**	**0.00**	**21,773.00**	**(56,431.85)**	**(21,773.00)**	**2,760.06**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(53,671.79)**

**Wood Flooring and Dimensional Lumber model reuse under the recycling management pathway.*

a) For explanation of methodology, see the EPA WARM Documentation: *Documentation Chapters for Greenhouse Gas Emission, Energy and Economic Factors Used in the Waste Reduction Model* available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.





Notes: Up to seven materials will display in the figures above. Production emissions are not available for materials for which source reduction impacts are not estimated in WARM. Material weights are based on quantities entered under the baseline scenario.

Table N1-F Production + End-of-Life Impact from Baseline & Alternative Waste Management

Production + End-of-Life Impact from Baseline Waste Management Scenario							
Material	GHG Emissions from Production ($MTCO_2E$)	End of Life Impacts ($MTCO_2E$)					Production + End-of-Life Impact ($MTCO_2E$)
		GHG Emissions from Recycling	GHG Emissions from Landfilling	GHG Emissions from Combustion	GHG Emissions from Composting	GHG Emissions from Anaerobic Digestion	
Corrugated Containers	42,683.79	-	(748.14)	-	NA	NA	41,935.65
Mixed Paper (general)	26,742.62	-	(774.95)	-	NA	NA	25,967.67
Mixed Plastics	1,380.70	-	14.93	-	NA	NA	1,395.62
Steel Cans	1,589.42	-	10.63	-	NA	NA	1,600.06
Glass	805.79	-	30.75	-	NA	NA	836.53
Dimensional Lumber*	378.22	-	(184.92)	-	NA	NA	193.29
Tires	7,914.11	-	37.29	-	NA	NA	7,951.40
Mixed Recyclables	NA	-	(1,145.64)	-	NA	NA	(1,145.64)

Production + End-of-Life Impact from Alternate Waste Management Scenario							
Material	GHG Emissions from Production ($MTCO_2E$)	End of Life Impacts ($MTCO_2E$)					Production + End-of-Life Impact ($MTCO_2E$)
		GHG Emissions from Recycling	GHG Emissions from Landfilling	GHG Emissions from Combustion	GHG Emissions from Composting	GHG Emissions from Anaerobic Digestion	
Corrugated Containers	42,683.79	(24,004.14)	-	-	NA	NA	18,679.66
Mixed Paper (general)	26,742.62	(15,610.94)	-	-	NA	NA	11,131.68
Mixed Plastics	1,380.70	(682.11)	-	-	NA	NA	698.59
Steel Cans	1,589.42	(961.84)	-	-	NA	NA	627.58
Glass	805.79	(419.10)	-	-	NA	NA	386.68
Dimensional Lumber*	378.22	(297.06)	-	-	NA	NA	81.15
Tires	7,914.11	(692.77)	-	-	NA	NA	7,221.34
Mixed Recyclables	NA	(13,763.87)	-	-	NA	NA	(13,763.87)

Table N1-G Energy Use from Baseline & Alternative Waste Management Scenarios (million BTU)

Energy Use from Baseline Waste Management (million BTU)						
Material	Tons Recycled*	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Million BTU
Corrugated Containers	-	7,656.00	-	NA	NA	(2,233.34)
Mixed Paper (general)	-	4,403.00	-	NA	NA	(1,099.57)
Mixed Plastics	-	737.00	-	NA	NA	197.72
Steel Cans	-	525.00	-	NA	NA	140.84
Glass	-	1,518.00	-	NA	NA	407.24
Dimensional Lumber*	-	179.00	-	NA	NA	41.49
Tires	-	1,841.00	-	NA	NA	493.89
Mixed Recyclables	-	4,914.00	-	NA	NA	(539.29)
						(2,591.01)

Energy Use from Alternative Waste Management Scenario (million BTU)							
Material	Tons Source Reduced	Tons Recycled*	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Million BTU
Corrugated Containers	-	7,656.00	-	-	NA	NA	(115,630.45)
Mixed Paper (general)	-	4,403.00	-	-	NA	NA	(90,543.83)
Mixed Plastics	-	737.00	-	-	NA	NA	(25,811.18)
Steel Cans	-	525.00	-	-	NA	NA	(10,482.26)
Glass	-	1,518.00	-	-	NA	NA	(3,226.37)
Dimensional Lumber*	-	179.00	-	-	NA	NA	(931.94)
Tires	-	1,841.00	-	-	NA	NA	(6,632.33)
Mixed Recyclables	NA	4,914.00	-	-	NA	NA	(73,417.73)
							(326,676.09)

TOTAL
Change (Alt - Base) Million BTU
(113,397.12)
(89,444.26)
(26,008.90)
(10,623.10)
(3,633.61)
(973.43)
(7,126.22)
(72,878.44)
(324,085.07)

Note: a negative value (i.e., a value in parentheses) indicates a reduction in energy consumption; a positive value indicates an increase.

**Wood Flooring and Dimensional Lumber model reuse under the recycling management pathway.*

a) For explanation of methodology, see the EPA WARM Documentation: *Documentation Chapters for Greenhouse Gas Emission, Energy and Economic Factors Used in the Waste Reduction Model* available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Energy estimates provided by this model are intended to support voluntary energy measurement and reporting initiatives

Total is equivalent to

Conserving	3,538	Households' Annual Energy Consumption
Conserving	55,781	Barrels of Oil
Conserving	2,690,566	Gallons of Gasoline

Total Energy Use from Baseline MSW Generation and Management (million BTU):	(2,591.01)
Total Energy Use from Alternative MSW Generation and Management (million BTU):	(326,676.09)
Incremental Energy Use (million BTU):	**(324,085.07)**

BTU = British Thermal Unit

Table N1-H Per Ton Estimates of Energy Use for Alternative Management Scenarios

Material	Energy Savings per Ton of Material Produced (million BTU)	Energy Savings per Ton of Material Source Reduced (million BTU)	Energy Savings per Ton of Material Recycled (million BTU)	Energy Savings per Ton of Material Landfilled (million BTU)	Energy Savings per Ton of Material Combusted (million BTU)	Energy Savings per Ton of Material Composted (million BTU)	Energy Savings per Ton of Material Anaerobically Digested (million BTU)
Corrugated Containers	22.32	(22.32)	(15.10)	(0.29)	(6.63)	NA	NA
Magazines/third-class mail	33.23	(33.23)	(0.69)	0.02	(4.95)	NA	NA
Newspaper	36.46	(36.46)	(16.49)	0.03	(7.49)	NA	NA
Office Paper	36.60	(36.60)	(10.08)	(0.60)	(6.41)	NA	NA
Phonebooks	40.20	(40.20)	(11.93)	0.03	(7.49)	NA	NA
Textbooks	35.60	(35.60)	(1.03)	(0.60)	(6.41)	NA	NA
Mixed Paper (general)	29.44	(29.44)	(20.56)	(0.25)	(6.66)	NA	NA
Mixed Paper (primarily residential)	28.66	(28.66)	(20.56)	(0.23)	(6.63)	NA	NA
Mixed Paper (primarily from offices)	34.64	(34.64)	(20.85)	(0.22)	(6.12)	NA	NA
Food Waste	14.56	(14.56)	NA	(0.07)	(2.23)	0.73	(1.44)
Food Waste (non-meat)	7.20	(7.20)	NA	(0.06)	(2.23)	0.73	(1.44)
Food Waste (meat only)	43.60	(43.60)	NA	(0.07)	(2.23)	0.73	(1.44)
Beef	63.88	(63.88)	NA	(0.05)	(2.23)	0.73	(1.44)
Poultry	26.48	(26.48)	NA	(0.10)	(2.23)	0.73	(1.44)
Grains	5.64	(5.64)	NA	(0.78)	(2.23)	0.73	(1.44)
Bread	6.52	(6.52)	NA	(0.48)	(2.23)	0.73	(1.44)
Fruits and Vegetables	5.07	(5.07)	NA	0.13	(2.23)	0.73	(1.44)
Dairy Products	14.27	(14.27)	NA	(0.09)	(2.23)	0.73	(1.44)
Yard Trimmings	0.00	0.00	NA	0.13	(2.64)	0.26	(0.17)
Grass	0.00	0.00	NA	0.18	(2.64)	0.26	(0.18)
Leaves	0.00	0.00	NA	0.15	(2.64)	0.26	0.07
Branches	0.00	0.00	NA	(0.03)	(2.64)	0.26	(0.38)
HDPE	61.12	(61.12)	(44.78)	0.27	(18.83)	NA	NA
LDPE	70.92	(70.92)	NA	0.27	(18.72)	NA	NA
PET	50.02	(50.02)	(28.59)	0.27	(9.99)	NA	NA
LLDPE	66.29	(66.29)	NA	0.27	(18.79)	NA	NA
PP	65.91	(65.91)	(44.50)	0.27	(18.79)	NA	NA
PS	74.85	(74.85)	NA	0.27	(16.96)	NA	NA

Material	Energy Savings per Ton of Material Produced (million BTU)	Energy Savings per Ton of Material Source Reduced (million BTU)	Energy Savings per Ton of Material Recycled (million BTU)	Energy Savings per Ton of Material Landfilled (million BTU)	Energy Savings per Ton of Material Combusted (million BTU)	Energy Savings per Ton of Material Composted (million BTU)	Energy Savings per Ton of Material Anaerobically Digested (million BTU)
PVC	48.14	(48.14)	NA	0.27	(7.42)	NA	NA
Mixed Plastics	54.43	(54.43)	(35.02)	0.27	(13.50)	NA	NA
PLA	30.09	(30.09)	NA	0.27	(7.88)	0.51	NA
Desktop CPUs	130.63	(130.63)	(21.21)	0.27	(11.76)	NA	NA
Portable Electronic Devices	163.36	(163.36)	(20.95)	0.27	(2.73)	NA	NA
Flat-Panel Displays	125.66	(125.66)	(15.07)	0.27	(7.96)	NA	NA
CRT Displays	NA	NA	(7.95)	0.27	(2.30)	NA	NA
Electronic Peripherals	106.00	(106.00)	(7.88)	0.27	(1.82)	NA	NA
Hard-Copy Devices	72.53	(72.53)	(7.91)	0.27	(8.03)	NA	NA
Mixed Electronics	119.70	(119.70)	(14.02)	0.27	(6.89)	NA	NA
Aluminum Cans	89.69	(89.69)	(152.76)	0.27	0.32	NA	NA
Aluminum Ingot	126.95	(126.95)	(113.85)	0.27	0.32	NA	NA
Steel Cans	29.88	(29.88)	(19.97)	0.27	(17.41)	NA	NA
Copper Wire	122.36	(122.36)	(82.59)	0.27	0.26	NA	NA
Mixed Metals	50.86	(50.86)	(66.55)	0.27	(11.19)	NA	NA
Glass	6.90	(6.90)	(2.13)	0.27	0.22	NA	NA
Asphalt Concrete	1.68	(1.68)	(1.22)	0.27	NA	NA	NA
Asphalt Shingles	3.11	(3.11)	(2.41)	0.27	(8.80)	NA	NA
Carpet	91.06	(91.06)	(21.46)	0.27	(7.16)	NA	NA
Clay Bricks	5.13	(5.13)	NA	0.27	NA	NA	NA
Concrete	NA	NA	(0.11)	0.27	NA	NA	NA
Dimensional Lumber*	7.06	(7.06)	(5.21)	0.23	(7.82)	NA	NA
Drywall	3.56	(3.56)	(2.60)	0.27	NA	NA	NA
Fiberglass Insulation	4.73	(4.73)	NA	0.27	NA	NA	NA
Fly Ash	NA	NA	(4.77)	0.27	NA	NA	NA
Medium-density Fiberboard	22.39	(22.39)	NA	0.26	(7.82)	NA	NA
Structural Steel	15.90	(15.90)	(9.25)	0.27	NA	NA	NA
Vinyl Flooring	10.60	(10.60)	NA	0.27	(7.42)	NA	NA
Wood Flooring*	10.14	(10.14)	(7.99)	0.27	(10.23)	NA	NA
Tires	71.71	(71.71)	(3.60)	0.27	(28.79)	NA	NA
Mixed Recyclables	NA	NA	(14.94)	(0.11)	(6.61)	NA	NA
Mixed Organics	NA	NA	NA	0.03	(2.42)	0.51	(0.85)
Mixed MSW	NA	NA	NA	(0.10)	(4.71)	NA	NA

Table N1-I Energy Use from Baseline Management of Municipal Solid Waste

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Baseline Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Baseline Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Baseline Composting (Tons)	Energy Consumption from Composting (million BTU)	Baseline Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
Corrugated Containers	7,656.00	0.00	0.00	7,656.00	(2,233.34)	0.00	0.00	NA	NA	NA	NA	(2,233.34)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	4,403.00	0.00	0.00	4,403.00	(1,099.57)	0.00	0.00	NA	NA	NA	NA	(1,099.57)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	737.00	0.00	0.00	737.00	197.72	0.00	0.00	NA	NA	NA	NA	197.72
PLA	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Baseline Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Baseline Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Baseline Composting (Tons)	Energy Consumption from Composting (million BTU)	Baseline Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	525.00	0.00	0.00	525.00	140.84	0.00	0.00	NA	NA	NA	NA	140.84
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	1,518.00	0.00	0.00	1,518.00	407.24	0.00	0.00	NA	NA	NA	NA	407.24
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	179.00	0.00	0.00	179.00	41.49	0.00	0.00	NA	NA	NA	NA	41.49
Drywall	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	1,841.00	0.00	0.00	1,841.00	493.89	0.00	0.00	NA	NA	NA	NA	493.89
Mixed Recyclables	4,914.00	0.00	0.00	4,914.00	(539.29)	0.00	0.00	NA	NA	NA	NA	(539.29)
Mixed Organics	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
TOTAL	**21,773.00**	**0.00**	**0.00**	**21,773.00**	**(2,591.01)**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(2,591.01)**

Table N1-J Energy Use from Alternative Management of Municipal Solid Waste

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	Energy Consumption from Source Reduction (million BTU)	Alternative Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Alternative Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Alternative Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Alternative Composting (Tons)	Energy Consumption from Composting (million BTU)	Alternative Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
Corrugated Containers	7,656.00	0.00	0.00	7,656.00	(115,630.45)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(115,630.45)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	4,403.00	0.00	0.00	4,403.00	(90,543.83)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(90,543.83)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	737.00	0.00	0.00	737.00	(25,811.18)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(25,811.18)
PLA	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	Energy Consumption from Source Reduction (million BTU)	Alternative Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Alternative Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Alternative Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Alternative Composting (Tons)	Energy Consumption from Composting (million BTU)	Alternative Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
CRT Displays	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	525.00	0.00	0.00	525.00	(10,482.26)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(10,482.26)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	1,518.00	0.00	0.00	1,518.00	(3,226.37)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(3,226.37)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	179.00	0.00	0.00	179.00	(931.94)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(931.94)
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	1,841.00	0.00	0.00	1,841.00	(6,632.33)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(6,632.33)
Mixed Recyclables	4,914.00	NA	NA	4,914.00	(73,417.73)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(73,417.73)
Mixed Organics	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
TOTAL	**21,773.00**	**0.00**	**0.00**	**21,773.00**	**(326,676.09)**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(326,676.09)**

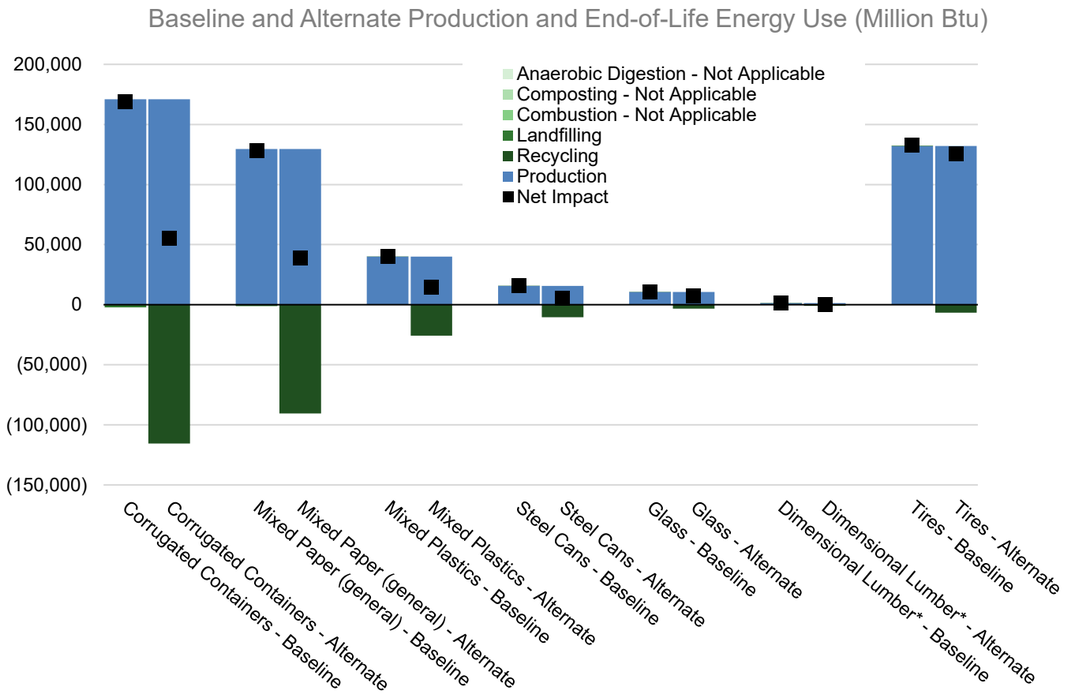
Table N1-K Incremental Energy Use from Alternative Management of Municipal Solid Waste

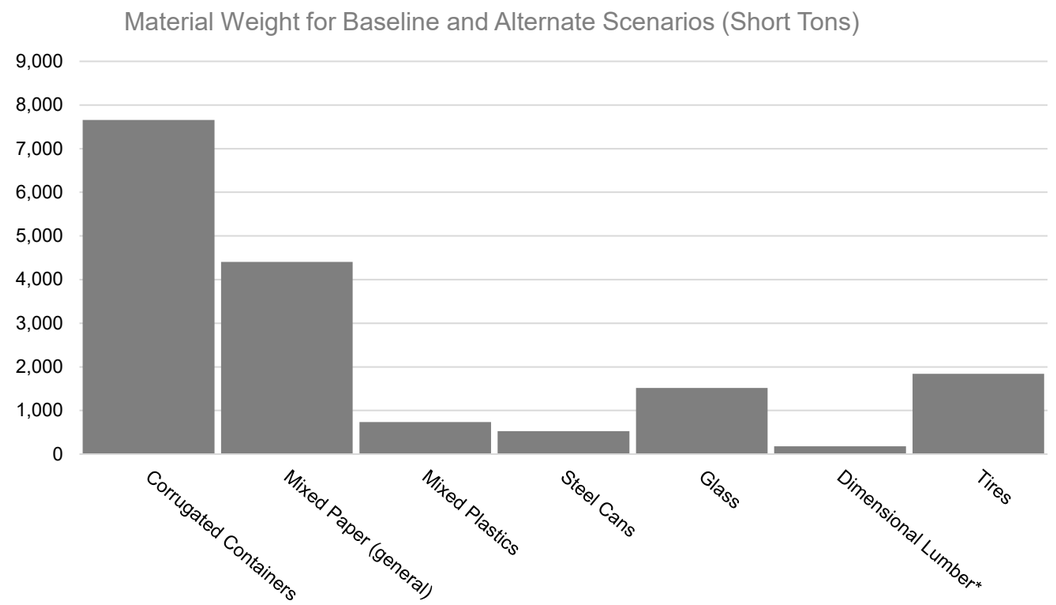
Material	Source Reduction (Tons)	Incremental Energy Consumption from Source Reduction (million BTU)	Incremental Recycling (Tons)	Incremental Energy Consumption from Recycling (million BTU)	Incremental Landfilling (Tons)	Incremental Energy Consumption from Landfilling (million BTU)	Incremental Combustion (Tons)	Incremental Energy Consumption from Combustion (million BTU)	Incremental Composting (Tons)	Incremental Energy Consumption from Composting (million BTU)	Incremental Anaerobic Digestion (Tons)	Incremental Energy Consumption from Anaerobic Digestion (million BTU)	Total Incremental Energy Consumption (million BTU)
Corrugated Containers	0.00	0.00	7,656.00	(115,630.45)	(7,656.00)	2,233.34	0.00	0.00	NA	NA	NA	NA	(113,397.12)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	4,403.00	(90,543.83)	(4,403.00)	1,099.57	0.00	0.00	NA	NA	NA	NA	(89,444.26)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	0.00	0.00	737.00	(25,811.18)	(737.00)	(197.72)	0.00	0.00	NA	NA	NA	NA	(26,008.90)
PLA	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Source Reduction (Tons)	Incremental Energy Consumption from Source Reduction (million BTU)	Incremental Recycling (Tons)	Incremental Energy Consumption from Recycling (million BTU)	Incremental Landfilling (Tons)	Incremental Energy Consumption from Landfilling (million BTU)	Incremental Combustion (Tons)	Incremental Energy Consumption from Combustion (million BTU)	Incremental Composting (Tons)	Incremental Energy Consumption from Composting (million BTU)	Incremental Anaerobic Digestion (Tons)	Incremental Energy Consumption from Anaerobic Digestion (million BTU)	Total Incremental Energy Consumption (million BTU)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	525.00	(10,482.26)	(525.00)	(140.84)	0.00	0.00	NA	NA	NA	NA	(10,623.10)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	0.00	0.00	1,518.00	(3,226.37)	(1,518.00)	(407.24)	0.00	0.00	NA	NA	NA	NA	(3,633.61)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	0.00	0.00	179.00	(931.94)	(179.00)	(41.49)	0.00	0.00	NA	NA	NA	NA	(973.43)
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	1,841.00	(6,632.33)	(1,841.00)	(493.89)	0.00	0.00	NA	NA	NA	NA	(7,126.22)
Mixed Recyclables	NA	NA	4,914.00	(73,417.73)	(4,914.00)	539.29	0.00	0.00	NA	NA	NA	NA	(72,878.44)
Mixed Organics	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
TOTAL	**0.00**	**0.00**	**21,773.00**	**(326,676.09)**	**(21,773.00)**	**2,591.01**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(324,085.07)**

**Wood Flooring and Dimensional Lumber model reuse under the recycling management pathway.*

c) For explanation of methodology, see the EPA WARM Documentation: *Documentation Chapters for Greenhouse Gas Emission, Energy and Economic Factors Used in the Waste Reduction Model* available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
d) Energy estimates provided by this model are intended to support voluntary energy measurement and reporting initiatives





Notes: Up to seven materials will display in the figures shown. Production emissions are not available for materials for which source reduction impacts are not estimated in WARM. Material weights are based on quantities entered under the baseline scenario.

Table N1-L Production + End-of-Life Impact from Baseline & Alternative Waste Management Scenarios

Production + End-of-Life Impact from Baseline Waste Management Scenario							
Material	Energy Use from Production (million BTU)	End of Life Impacts (million BTU)					Production + End-of-Life Impact (million BTU)
		Energy Use from Recycling	Energy Use from Landfilling	Energy Use from Combustion	Energy Use from Composting	Energy Use from Anaerobic Digestion	
Corrugated Containers	170,885.85	-	(2,233.34)	-	NA	NA	168,652.52
Mixed Paper (general)	129,637.71	-	(1,099.57)	-	NA	NA	128,538.14
Mixed Plastics	40,115.29	-	197.72	-	NA	NA	40,313.01
Steel Cans	15,687.29	-	140.84	-	NA	NA	15,828.13
Glass	10,481.13	-	407.24	-	NA	NA	10,888.37
Dimensional Lumber*	1,262.85	-	41.49	-	NA	NA	1,304.34
Tires	132,015.64	-	493.89	-	NA	NA	132,509.53
Mixed Recyclables	NA	-	(1,145.64)	-	NA	NA	(1,145.64)

Production + End-of-Life Impact from Alternate Waste Management Scenario							
Material	Energy Use from Production (million BTU)	End of Life Impacts (million BTU)					Production + End-of-Life Impact (million BTU)
		Energy Use from Recycling	Energy Use from Landfilling	Energy Use from Combustion	Energy Use from Composting	Energy Use from Anaerobic Digestion	
Corrugated Containers	170,885.85	(115,630.45)	-	-	NA	NA	55,255.40
Mixed Paper (general)	129,637.71	(90,543.83)	-	-	NA	NA	39,093.88
Mixed Plastics	40,115.29	(25,811.18)	-	-	NA	NA	14,304.11
Steel Cans	15,687.29	(10,482.26)	-	-	NA	NA	5,205.03
Glass	10,481.13	(3,226.37)	-	-	NA	NA	7,254.76
Dimensional Lumber*	1,262.85	(931.94)	-	-	NA	NA	330.91
Tires	132,015.64	(6,632.33)	-	-	NA	NA	125,383.32
Mixed Recyclables	NA	(13,763.87)	-	-	NA	NA	(13,763.87)

2. Waste Reduction Model (WARM) Input · Run 2

Greenhouse Gas Emissions Analysis · Run 2

- Summary Report
  - GHG Emissions from Baseline Waste Management ($MTCO_2E$)
  - GHG Emissions from Alternative Waste Management Scenario ($MTCO_2E$)
- WARM Results
  - Per Ton Estimates of GHG Emissions for Baseline and Alternative Management Scenarios
  - GHG Emissions from Baseline Management of Municipal Solid Waste
  - GHG Emissions from Alternative Management of Municipal Solid Waste
  - Incremental GHG Emissions from Alternative Management of Municipal Solid Waste
- Production and End-of-Life Report
  - Baseline and Alternate Production + End-of-Life Emissions ($MTCO_2E$)
  - Material Weight for Baseline and Alternate Scenarios (Short Tons)
  - Baseline Waste Management Scenario Production + End-of-Life Impact
  - Alternate Waste Management Scenario Production + End-of-Life Impact

Energy Use Analysis · Run 2

- Summary Report
  - Energy Use from Baseline Waste Management (million BTU)
  - Energy Use from Alternative Waste Management Scenario (million BTU)
- WARM Results
  - Per Ton Estimates of Energy Use for Alternative Management Scenarios
  - Energy Use from Baseline Management of Municipal Solid Waste
  - Energy Use from Alternative Management of Municipal Solid Waste
  - Incremental Energy Use from Alternative Management of Municipal Solid Waste
- Production and End-of-Life Report
  - Baseline and Alternate Production + End-of-Life Energy Use (million BTU)
  - Material Weight for Baseline and Alternate Scenarios (Short Tons)
  - Baseline Waste Management Scenario Production + End-of-Life Impact
  - Alternate Waste Management Scenario Production + End-of-Life Impact

Table N2-A GHG Emissions from Baseline & Alternative Waste Management ($MTCO_2E$)

GHG Emissions from Baseline Waste Management ($MTCO_2E$)						
Material	Tons Recycled*	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total $MTCO_2E$
Corrugated Containers	7,656.00	174.53	-	NA	NA	(23,972.44)
Mixed Paper (general)	4,403.00	-	-	NA	NA	(15,610.94)
Mixed Plastics	737.00	9.00	-	NA	NA	(681.93)
Steel Cans	525.00	7.00	-	NA	NA	(961.70)
Glass	1,518.00	30.00	-	NA	NA	(418.50)
Dimensional Lumber*	179.00	12.00	-	NA	NA	(308.14)
Tires	1,841.00	22.00	-	NA	NA	(692.33)
Mixed Recyclables	4,914.00	58.00	-	NA	NA	(13,761.89)
						(56,407.87)

GHG Emissions from Alternative Waste Management ($MTCO_2E$)							
Material	Tons Source Reduced	Tons Recycled*	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total $MTCO_2E$
Corrugated Containers	-	7,830.53	-	-	NA	NA	(24,551.35)
Mixed Paper (general)	-	4,369.67	33.33	-	NA	NA	(15,490.28)
Mixed Plastics	-	746.00	-	-	NA	NA	(690.44)
Steel Cans	-	532.00	-	-	NA	NA	(974.66)
Glass	-	1,548.00	-	-	NA	NA	(427.39)
Dimensional Lumber*	-	191.00	-	-	NA	NA	(316.98)
Tires	-	1,863.00	-	-	NA	NA	(701.05)
Mixed Recyclables	NA	4,972.00	-	-	NA	NA	(13,926.33)
							(57,078.48)

TOTAL
Change (Alt - Base) $MTCO_2E$
(578.91)
120.66
(8.51)
(12.97)
(8.89)
(8.83)
(8.72)
(164.44)
(670.61)

Note: a negative value (i.e., a value in parentheses) indicates an emission reduction; a positive value indicates an emission increase.

**Wood Flooring and Dimensional Lumber model reuse under the recycling management pathway.*

a) For explanation of methodology, see the EPA WARM Documentation: *Documentation Chapters for Greenhouse Gas Emission, Energy and Economic Factors Used in the Waste Reduction Model* available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.
c) The GHG emissions results estimated in WARM indicate the full life-cycle benefits waste management alternatives. Due to the timing of the GHG emissions from the waste management pathways, (e.g., avoided landfilling and increased recycling), the actual GHG implications may accrue over the long-term. Therefore, one should not interpret the GHG emissions implications as occurring all in one year, but rather through time.

Total is equivalent to:

Removing annual emissions from	142	Passenger Vehicles
Conserving	75,460	Gallons of Gasoline
Conserving	27,942	Cylinders of Propane Used for Home Barbeques
	0.00004%	Annual CO_2 emissions from the U.S. transportation sector
	0.00004%	Annual CO_2 emissions from the U.S. electricity sector

Total GHG Emissions from Baseline MSW Generation and Management ($MTCO_2E$):	(56,407.87)
Total GHG Emissions from Alternative MSW Generation and Management ($MTCO_2E$):	(57,078.48)
Incremental GHG Emissions ($MTCO_2E$):	**(670.61)**

$MTCO_2E$ = Metric Tons of Carbon Dioxide Equivalent

Table N2-B Per Ton Estimates of GHG Emissions for Baseline and Alternative Management Scenarios

Material	GHG Emissions per Ton of Material Produced ($MTCO_2E$)	GHG Emissions per Ton of Material Source Reduced ($MTCO_2E$)	GHG Emissions per Ton of Material Recycled ($MTCO_2E$)	GHG Emissions per Ton of Material Landfilled ($MTCO_2E$)	GHG Emissions per Ton of Material Combusted ($MTCO_2E$)	GHG Emissions per Ton of Material Composted ($MTCO_2E$)	GHG Emissions per Ton of Material Anaerobically Digested ($MTCO_2E$)
Corrugated Containers	5.58	(5.58)	(3.14)	0.18	(0.49)	NA	NA
Magazines/third-class mail	8.57	(8.57)	(3.07)	(0.43)	(0.35)	NA	NA
Newspaper	4.68	(4.68)	(2.71)	(0.85)	(0.56)	NA	NA
Office Paper	7.95	(7.95)	(2.86)	1.13	(0.47)	NA	NA
Phonebooks	6.17	(6.17)	(2.62)	(0.85)	(0.56)	NA	NA
Textbooks	9.02	(9.02)	(3.10)	1.13	(0.47)	NA	NA
Mixed Paper (general)	6.07	(6.07)	(3.55)	0.07	(0.49)	NA	NA
Mixed Paper (primarily residential)	6.00	(6.00)	(3.55)	0.02	(0.49)	NA	NA
Mixed Paper (primarily from offices)	7.37	(7.37)	(3.58)	0.11	(0.45)	NA	NA
Food Waste	3.66	(3.66)	NA	0.50	(0.13)	(0.15)	(0.04)
Food Waste (non-meat)	0.76	(0.76)	NA	0.50	(0.13)	(0.15)	(0.04)
Food Waste (meat only)	15.10	(15.10)	NA	0.46	(0.13)	(0.15)	(0.04)
Beef	30.09	(30.09)	NA	0.43	(0.13)	(0.15)	(0.04)
Poultry	2.45	(2.45)	NA	0.49	(0.13)	(0.15)	(0.04)
Grains	0.62	(0.62)	NA	1.37	(0.13)	(0.15)	(0.04)
Bread	0.66	(0.66)	NA	0.99	(0.13)	(0.15)	(0.04)
Fruits and Vegetables	0.44	(0.44)	NA	0.23	(0.13)	(0.15)	(0.04)
Dairy Products	1.75	(1.75)	NA	0.48	(0.13)	(0.15)	(0.04)
Yard Trimmings	NA	NA	NA	(0.20)	(0.17)	(0.11)	(0.09)
Grass	NA	NA	NA	0.12	(0.17)	(0.11)	0.00
Leaves	NA	NA	NA	(0.53)	(0.17)	(0.11)	(0.14)
Branches	NA	NA	NA	(0.54)	(0.17)	(0.11)	(0.22)
HDPE	1.42	(1.42)	(0.76)	0.02	1.29	NA	NA
LDPE	1.80	(1.80)	NA	0.02	1.29	NA	NA
PET	2.17	(2.17)	(1.04)	0.02	1.24	NA	NA
LLDPE	1.58	(1.58)	NA	0.02	1.29	NA	NA
PP	1.52	(1.52)	(0.79)	0.02	1.29	NA	NA
PS	2.50	(2.50)	NA	0.02	1.65	NA	NA

Material	GHG Emissions per Ton of Material Produced ($MTCO_2E$)	GHG Emissions per Ton of Material Source Reduced ($MTCO_2E$)	GHG Emissions per Ton of Material Recycled ($MTCO_2E$)	GHG Emissions per Ton of Material Landfilled ($MTCO_2E$)	GHG Emissions per Ton of Material Combusted ($MTCO_2E$)	GHG Emissions per Ton of Material Composted ($MTCO_2E$)	GHG Emissions per Ton of Material Anaerobically Digested ($MTCO_2E$)
PVC	1.93	(1.93)	NA	0.02	0.66	NA	NA
Mixed Plastics	1.87	(1.87)	(0.93)	0.02	1.26	NA	NA
PLA	2.45	(2.45)	NA	(1.64)	(0.63)	(0.13)	NA
Desktop CPUs	20.86	(20.86)	(1.49)	0.02	(0.66)	NA	NA
Portable Electronic Devices	29.83	(29.83)	(1.06)	0.02	0.65	NA	NA
Flat-Panel Displays	24.19	(24.19)	(0.99)	0.02	0.03	NA	NA
CRT Displays	NA	NA	(0.57)	0.02	0.45	NA	NA
Electronic Peripherals	10.32	(10.32)	(0.36)	0.02	2.08	NA	NA
Hard-Copy Devices	7.65	(7.65)	(0.56)	0.02	1.20	NA	NA
Mixed Electronics	20.79	(20.79)	(0.90)	0.02	0.34	NA	NA
Aluminum Cans	4.80	(4.80)	(9.13)	0.02	0.03	NA	NA
Aluminum Ingot	7.48	(7.48)	(7.20)	0.02	0.03	NA	NA
Steel Cans	3.03	(3.03)	(1.83)	0.02	(1.59)	NA	NA
Copper Wire	6.72	(6.72)	(4.49)	0.02	0.03	NA	NA
Mixed Metals	3.65	(3.65)	(4.39)	0.02	(1.02)	NA	NA
Glass	0.53	(0.53)	(0.28)	0.02	0.03	NA	NA
Asphalt Concrete	0.11	(0.11)	(0.08)	0.02	NA	NA	NA
Asphalt Shingles	0.19	(0.19)	(0.09)	0.02	(0.35)	NA	NA
Carpet	3.68	(3.68)	(2.38)	0.02	1.10	NA	NA
Clay Bricks	0.27	(0.27)	NA	0.02	NA	NA	NA
Concrete	NA	NA	(0.01)	0.02	NA	NA	NA
Dimensional Lumber*	2.11	(2.11)	(1.66)	(0.92)	(0.58)	NA	NA
Drywall	0.22	(0.22)	0.03	(0.06)	NA	NA	NA
Fiberglass Insulation	0.38	(0.38)	NA	0.02	NA	NA	NA
Fly Ash	NA	NA	(0.87)	0.02	NA	NA	NA
Medium-density Fiberboard	3.05	(3.05)	NA	(0.85)	(0.58)	NA	NA
Structural Steel	1.67	(1.67)	(1.93)	0.02	NA	NA	NA
Vinyl Flooring	0.58	(0.58)	NA	0.02	(0.31)	NA	NA
Wood Flooring*	4.11	(4.11)	(3.68)	(0.86)	(0.74)	NA	NA
Tires	4.30	(4.30)	(0.38)	0.02	0.50	NA	NA
Mixed Recyclables	NA	NA	(2.80)	0.03	(0.42)	NA	NA
Mixed Organics	NA	NA	NA	0.16	(0.15)	(0.13)	(0.06)
Mixed MSW	NA	NA	NA	0.31	0.01	NA	NA

Table N2-C GHG Emissions from Baseline Management of Municipal Solid Waste

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Baseline Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Baseline Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Baseline Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Baseline Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total GHG Emissions ($MTCO_2E$)
Corrugated Containers	7,830.53	7,656.00	(24,004.14)	174.53	31.70	0.00	0.00	NA	NA	NA	NA	(23,972.44)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	4,403.00	4,403.00	(15,610.94)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(15,610.94)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	746.00	737.00	(682.11)	9.00	0.18	0.00	0.00	NA	NA	NA	NA	(681.93)
PLA	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Baseline Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Baseline Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Baseline Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Baseline Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total GHG Emissions ($MTCO_2E$)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	532.00	525.00	(961.84)	7.00	0.14	0.00	0.00	NA	NA	NA	NA	(961.70)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	1,548.00	1,518.00	(419.10)	30.00	0.61	0.00	0.00	NA	NA	NA	NA	(418.50)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	191.00	179.00	(297.06)	12.00	(11.08)	0.00	0.00	NA	NA	NA	NA	(308.14)
Drywall	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	1,863.00	1,841.00	(692.77)	22.00	0.45	0.00	0.00	NA	NA	NA	NA	(692.33)
Mixed Recyclables	4,972.00	4,914.00	(13,763.87)	58.00	1.98	0.00	0.00	NA	NA	NA	NA	(13,761.89)
Mixed Organics	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	**22,085.53**	**21,773.00**	**(56,431.85)**	**312.53**	**23.98**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(56,407.87)**

Table N2-D GHG Emissions from Alternative Management of Municipal Solid Waste

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	GHG Emissions from Source Reduction ($MTCO_2E$)	Alternative Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Alternative Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Alternative Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Alternative Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Alternative Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total GHG Emissions ($MTCO_2E$)
Corrugated Containers	7,830.53	0.00	0.00	7,830.53	(24,551.35)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(24,551.35)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	4,403.00	0.00	0.00	4,369.67	(15,492.77)	33.33	2.49	0.00	0.00	NA	NA	NA	NA	(15,490.28)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	746.00	0.00	0.00	746.00	(690.44)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(690.44)
PLA	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	GHG Emissions from Source Reduction ($MTCO_2E$)	Alternative Recycling (Tons)	GHG Emissions from Recycling ($MTCO_2E$)	Alternative Landfilling (Tons)	GHG Emissions from Landfilling ($MTCO_2E$)	Alternative Combustion (Tons)	GHG Emissions from Combustion ($MTCO_2E$)	Alternative Composting (Tons)	GHG Emissions from Composting ($MTCO_2E$)	Alternative Anaerobic Digestion (Tons)	GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total GHG Emissions ($MTCO_2E$)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	532.00	0.00	0.00	532.00	(974.66)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(974.66)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	1,548.00	0.00	0.00	1,548.00	(427.39)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(427.39)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	191.00	0.00	0.00	191.00	(316.98)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(316.98)
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	1,863.00	0.00	0.00	1,863.00	(701.05)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(701.05)
Mixed Recyclables	4,972.00	NA	NA	4,972.00	(13,926.33)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(13,926.33)
Mixed Organics	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	**22,085.53**	**0.00**	**0.00**	**22,052.20**	**(57,080.97)**	**33.33**	**2.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(57,078.48)**

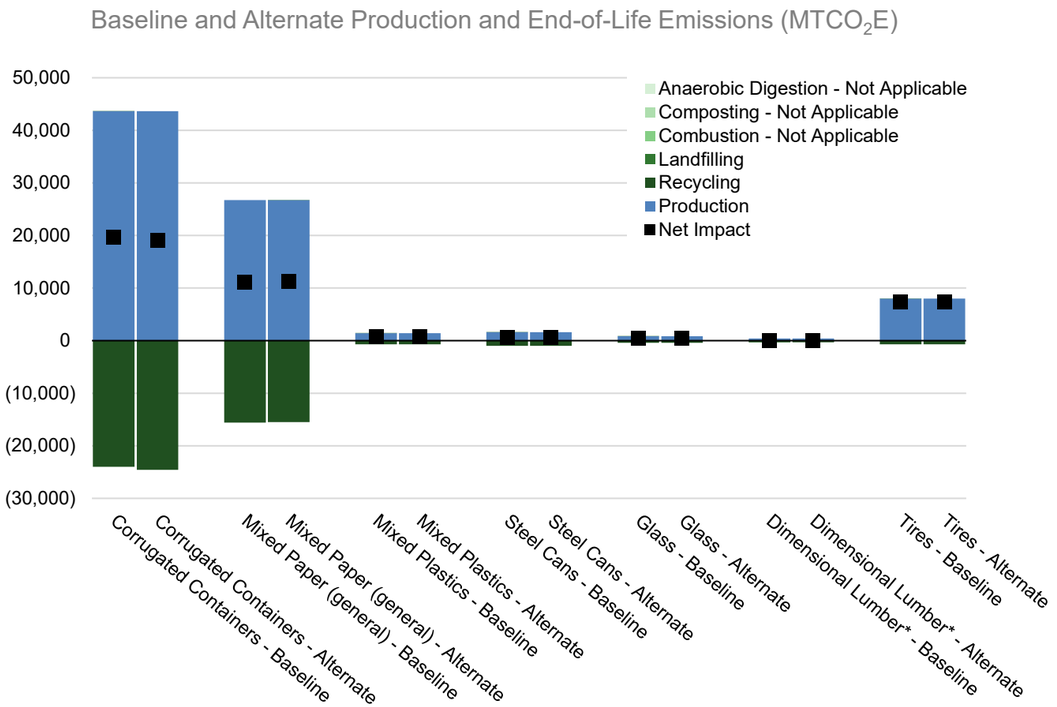
Table N2-E Incremental GHG Emissions from Alternative Management of Municipal Solid Waste

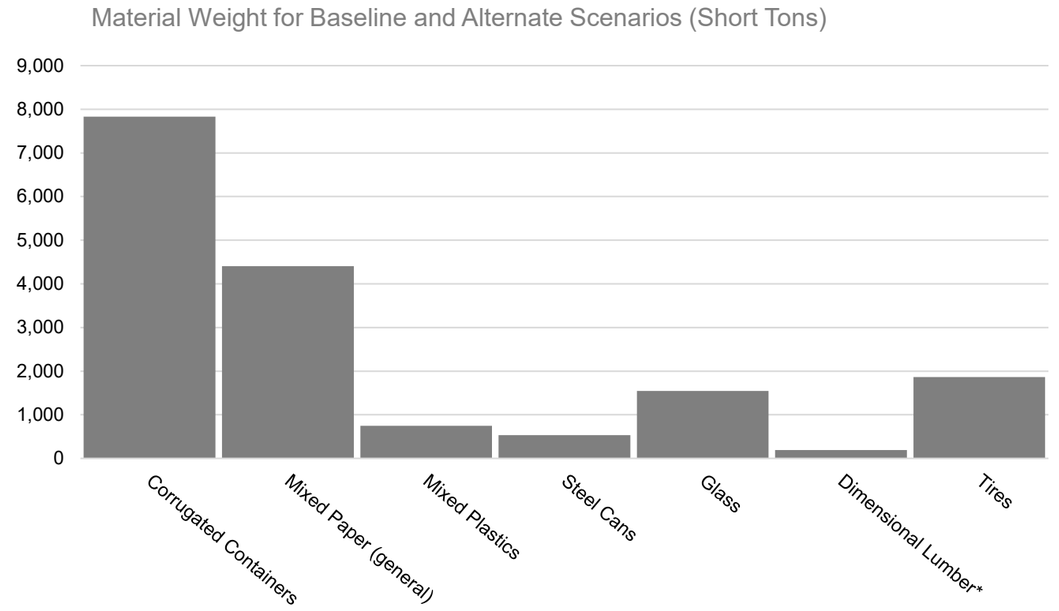
Material	Source Reduction (Tons)	Incremental GHG Emissions from Source Reduction ($MTCO_2E$)	Incremental Recycling (Tons)	Incremental GHG Emissions from Recycling ($MTCO_2E$)	Incremental Landfilling (Tons)	Incremental GHG Emissions from Landfilling ($MTCO_2E$)	Incremental Combustion (Tons)	Incremental GHG Emissions from Combustion ($MTCO_2E$)	Incremental Composting (Tons)	Incremental GHG Emissions from Composting ($MTCO_2E$)	Incremental Anaerobic Digestion (Tons)	Incremental GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total Incremental GHG Emissions ($MTCO_2E$)
Corrugated Containers	0.00	0.00	174.53	(547.21)	(174.53)	(31.70)	0.00	0.00	NA	NA	NA	NA	(578.91)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	(33.33)	118.17	33.33	2.49	0.00	0.00	NA	NA	NA	NA	120.66
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	0.00	0.00	9.00	(8.33)	(9.00)	(0.18)	0.00	0.00	NA	NA	NA	NA	(8.51)
PLA	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Source Reduction (Tons)	Incremental GHG Emissions from Source Reduction ($MTCO_2E$)	Incremental Recycling (Tons)	Incremental GHG Emissions from Recycling ($MTCO_2E$)	Incremental Landfilling (Tons)	Incremental GHG Emissions from Landfilling ($MTCO_2E$)	Incremental Combustion (Tons)	Incremental GHG Emissions from Combustion ($MTCO_2E$)	Incremental Composting (Tons)	Incremental GHG Emissions from Composting ($MTCO_2E$)	Incremental Anaerobic Digestion (Tons)	Incremental GHG Emissions from Anaerobic Digestion ($MTCO_2E$)	Total Incremental GHG Emissions ($MTCO_2E$)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	7.00	(12.82)	(7.00)	(0.14)	0.00	0.00	NA	NA	NA	NA	(12.97)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	0.00	0.00	30.00	(8.28)	(30.00)	(0.61)	0.00	0.00	NA	NA	NA	NA	(8.89)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	0.00	0.00	12.00	(19.91)	(12.00)	11.08	0.00	0.00	NA	NA	NA	NA	(8.83)
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	22.00	(8.28)	(22.00)	(0.45)	0.00	0.00	NA	NA	NA	NA	(8.72)
Mixed Recyclables	NA	NA	58.00	(162.46)	(58.00)	(1.98)	0.00	0.00	NA	NA	NA	NA	(164.44)
Mixed Organics	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Total	**0.00**	**0.00**	**279.20**	**(649.12)**	**(279.20)**	**(21.49)**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(670.61)**

**Wood Flooring and Dimensional Lumber model reuse under the recycling management pathway.*

a) For explanation of methodology, see the EPA WARM Documentation: *Documentation Chapters for Greenhouse Gas Emission, Energy and Economic Factors Used in the Waste Reduction Model* available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Emissions estimates provided by this model are intended to support voluntary GHG measurement and reporting initiatives.





Notes: Up to seven materials will display in the figures above. Production emissions are not available for materials for which source reduction impacts are not estimated in WARM. Material weights are based on quantities entered under the baseline scenario.

Table N2-F Production + End-of-Life Impact from Baseline & Alternative Waste Management Scenarios

Production + End-of-Life Impact from Baseline Waste Management Scenario							
Material	GHG Emissions from Production ($MTCO_2E$)	End of Life Impacts ($MTCO_2E$)					Production + End-of-Life Impact ($MTCO_2E$)
		GHG Emissions from Recycling	GHG Emissions from Landfilling	GHG Emissions from Combustion	GHG Emissions from Composting	GHG Emissions from Anaerobic Digestion	
Corrugated Containers	43,656.84	(24,004.14)	31.70	-	NA	NA	19,684.40
Mixed Paper (general)	26,742.62	(15,610.94)	-	-	NA	NA	11,131.68
Mixed Plastics	1,397.56	(682.11)	0.18	-	NA	NA	715.63
Steel Cans	1,610.61	(961.84)	0.14	-	NA	NA	648.92
Glass	821.71	(419.10)	0.61	-	NA	NA	403.21
Dimensional Lumber*	403.57	(297.06)	(11.08)	-	NA	NA	95.43
Tires	8,008.69	(692.77)	0.45	-	NA	NA	7,316.36
Mixed Recyclables	NA	(13,763.87)	1.98	-	NA	NA	(13,761.89)

Production + End-of-Life Impact from Alternate Waste Management Scenario							
Material	GHG Emissions from Production ($MTCO_2E$)	End of Life Impacts ($MTCO_2E$)					Production + End-of-Life Impact ($MTCO_2E$)
		GHG Emissions from Recycling	GHG Emissions from Landfilling	GHG Emissions from Combustion	GHG Emissions from Composting	GHG Emissions from Anaerobic Digestion	
Corrugated Containers	43,656.84	(24,551.35)	-	-	NA	NA	19,105.49
Mixed Paper (general)	26,742.62	(15,492.77)	2.49	-	NA	NA	11,252.34
Mixed Plastics	1,397.56	(690.44)	-	-	NA	NA	707.12
Steel Cans	1,610.61	(974.66)	-	-	NA	NA	635.95
Glass	821.71	(427.39)	-	-	NA	NA	394.32
Dimensional Lumber*	403.57	(316.98)	-	-	NA	NA	86.59
Tires	8,008.69	(701.05)	-	-	NA	NA	7,307.63
Mixed Recyclables	NA	(13,926.33)	-	-	NA	NA	(13,926.33)

Table N2-G Energy Use from Baseline & Alternative Waste Management Scenarios (million BTU)

Energy Use from Baseline Waste Management (million BTU)						
Material	Tons Recycled*	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Million BTU
Corrugated Containers	7,656.00	174.53	-	NA	NA	(115,666.86)
Mixed Paper (general)	4,403.00	-	-	NA	NA	(90,543.83)
Mixed Plastics	737.00	9.00	-	NA	NA	(25,808.77)
Steel Cans	525.00	7.00	-	NA	NA	(10,480.38)
Glass	1,518.00	30.00	-	NA	NA	(3,218.32)
Dimensional Lumber*	179.00	12.00	-	NA	NA	(928.73)
Tires	1,841.00	22.00	-	NA	NA	(6,626.42)
Mixed Recyclables	4,914.00	58.00	-	NA	NA	(73,420.84)
						(326,694.16)

Energy Use from Alternative Waste Management Scenario (million BTU)							
Material	Tons Source Reduced	Tons Recycled*	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total Million BTU
Corrugated Containers	-	7,830.53	-	-	NA	NA	(118,266.42)
Mixed Paper (general)	-	4,369.67	33.33	-	NA	NA	(89,864.19)
Mixed Plastics	-	746.00	-	-	NA	NA	(26,126.38)
Steel Cans	-	532.00	-	-	NA	NA	(10,622.02)
Glass	-	1,548.00	-	-	NA	NA	(3,290.13)
Dimensional Lumber*	-	191.00	-	-	NA	NA	(994.42)
Tires	-	1,863.00	-	-	NA	NA	(6,711.58)
Mixed Recyclables	NA	4,972.00	-	-	NA	NA	(74,284.28)
							(330,159.42)

TOTAL
Change (Alt - Base) Million BTU
(2,599.56)
679.64
(317.61)
(141.64)
(71.81)
(65.69)
(85.16)
(863.44)
(3,465.27)

Note: a negative value (i.e., a value in parentheses) indicates a reduction in energy consumption; a positive value indicates an increase.

**Wood Flooring and Dimensional Lumber model reuse under the recycling management pathway.*

a) For explanation of methodology, see the EPA WARM Documentation: *Documentation Chapters for Greenhouse Gas Emission, Energy and Economic Factors Used in the Waste Reduction Model* available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Energy estimates provided by this model are intended to support voluntary energy measurement and reporting initiatives

Total is equivalent to		
Conserving	38	Households' Annual Energy Consumption
Conserving	596	Barrels of Oil
Conserving	28,769	Gallons of Gasoline

Total Energy Use from Baseline MSW Generation and Management (million BTU):	(326,694.16)
Total Energy Use from Alternative MSW Generation and Management (million BTU):	(330,159.42)
Incremental Energy Use (million BTU):	**(3,465.27)**

BTU = British Thermal Unit

Table N2-H Per Ton Estimates of Energy Use for Alternative Management Scenarios

Material	Energy Savings per Ton of Material Produced (million BTU)	Energy Savings per Ton of Material Source Reduced (million BTU)	Energy Savings per Ton of Material Recycled (million BTU)	Energy Savings per Ton of Material Landfilled (million BTU)	Energy Savings per Ton of Material Combusted (million BTU)	Energy Savings per Ton of Material Composted (million BTU)	Energy Savings per Ton of Material Anaerobically Digested (million BTU)
Corrugated Containers	22.32	(22.32)	(15.10)	(0.21)	(6.63)	NA	NA
Magazines/third-class mail	33.23	(33.23)	(0.69)	0.06	(4.95)	NA	NA
Newspaper	36.46	(36.46)	(16.49)	0.07	(7.49)	NA	NA
Office Paper	36.60	(36.60)	(10.08)	(0.47)	(6.41)	NA	NA
Phonebooks	40.20	(40.20)	(11.93)	0.07	(7.49)	NA	NA
Textbooks	35.60	(35.60)	(1.03)	(0.47)	(6.41)	NA	NA
Mixed Paper (general)	29.44	(29.44)	(20.56)	(0.17)	(6.66)	NA	NA
Mixed Paper (primarily residential)	28.66	(28.66)	(20.56)	(0.15)	(6.63)	NA	NA
Mixed Paper (primarily from offices)	34.64	(34.64)	(20.85)	(0.15)	(6.12)	NA	NA
Food Waste	14.56	(14.56)	NA	(0.02)	(2.23)	0.73	(1.44)
Food Waste (non-meat)	7.20	(7.20)	NA	(0.02)	(2.23)	0.73	(1.44)
Food Waste (meat only)	43.60	(43.60)	NA	(0.02)	(2.23)	0.73	(1.44)
Beef	63.88	(63.88)	NA	(0.00)	(2.23)	0.73	(1.44)
Poultry	26.48	(26.48)	NA	(0.04)	(2.23)	0.73	(1.44)
Grains	5.64	(5.64)	NA	(0.62)	(2.23)	0.73	(1.44)
Bread	6.52	(6.52)	NA	(0.37)	(2.23)	0.73	(1.44)
Fruits and Vegetables	5.07	(5.07)	NA	0.15	(2.23)	0.73	(1.44)
Dairy Products	14.27	(14.27)	NA	(0.03)	(2.23)	0.73	(1.44)
Yard Trimmings	0.00	0.00	NA	0.15	(2.64)	0.26	(0.17)
Grass	0.00	0.00	NA	0.19	(2.64)	0.26	(0.18)
Leaves	0.00	0.00	NA	0.16	(2.64)	0.26	0.07
Branches	0.00	0.00	NA	0.01	(2.64)	0.26	(0.38)
HDPE	61.12	(61.12)	(44.78)	0.27	(18.83)	NA	NA
LDPE	70.92	(70.92)	NA	0.27	(18.72)	NA	NA
PET	50.02	(50.02)	(28.59)	0.27	(9.99)	NA	NA
LLDPE	66.29	(66.29)	NA	0.27	(18.79)	NA	NA
PP	65.91	(65.91)	(44.50)	0.27	(18.79)	NA	NA
PS	74.85	(74.85)	NA	0.27	(16.96)	NA	NA

Material	Energy Savings per Ton of Material Produced (million BTU)	Energy Savings per Ton of Material Source Reduced (million BTU)	Energy Savings per Ton of Material Recycled (million BTU)	Energy Savings per Ton of Material Landfilled (million BTU)	Energy Savings per Ton of Material Combusted (million BTU)	Energy Savings per Ton of Material Composted (million BTU)	Energy Savings per Ton of Material Anaerobically Digested (million BTU)
PVC	48.14	(48.14)	NA	0.27	(7.42)	NA	NA
Mixed Plastics	54.43	(54.43)	(35.02)	0.27	(13.50)	NA	NA
PLA	30.09	(30.09)	NA	0.27	(7.88)	0.51	NA
Desktop CPUs	130.63	(130.63)	(21.21)	0.27	(11.76)	NA	NA
Portable Electronic Devices	163.36	(163.36)	(20.95)	0.27	(2.73)	NA	NA
Flat-Panel Displays	125.66	(125.66)	(15.07)	0.27	(7.96)	NA	NA
CRT Displays	NA	NA	(7.95)	0.27	(2.30)	NA	NA
Electronic Peripherals	106.00	(106.00)	(7.88)	0.27	(1.82)	NA	NA
Hard-Copy Devices	72.53	(72.53)	(7.91)	0.27	(8.03)	NA	NA
Mixed Electronics	119.70	(119.70)	(14.02)	0.27	(6.89)	NA	NA
Aluminum Cans	89.69	(89.69)	(152.76)	0.27	0.32	NA	NA
Aluminum Ingot	126.95	(126.95)	(113.85)	0.27	0.32	NA	NA
Steel Cans	29.88	(29.88)	(19.97)	0.27	(17.41)	NA	NA
Copper Wire	122.36	(122.36)	(82.59)	0.27	0.26	NA	NA
Mixed Metals	50.86	(50.86)	(66.55)	0.27	(11.19)	NA	NA
Glass	6.90	(6.90)	(2.13)	0.27	0.22	NA	NA
Asphalt Concrete	1.68	(1.68)	(1.22)	0.27	NA	NA	NA
Asphalt Shingles	3.11	(3.11)	(2.41)	0.27	(8.80)	NA	NA
Carpet	91.06	(91.06)	(21.46)	0.27	(7.16)	NA	NA
Clay Bricks	5.13	(5.13)	NA	0.27	NA	NA	NA
Concrete	NA	NA	(0.11)	0.27	NA	NA	NA
Dimensional Lumber*	7.06	(7.06)	(5.21)	0.27	(7.82)	NA	NA
Drywall	3.56	(3.56)	(2.60)	0.27	NA	NA	NA
Fiberglass Insulation	4.73	(4.73)	NA	0.27	NA	NA	NA
Fly Ash	NA	NA	(4.77)	0.27	NA	NA	NA
Medium-density Fiberboard	22.39	(22.39)	NA	0.27	(7.82)	NA	NA
Structural Steel	15.90	(15.90)	(9.25)	0.27	NA	NA	NA
Vinyl Flooring	10.60	(10.60)	NA	0.27	(7.42)	NA	NA
Wood Flooring*	10.14	(10.14)	(7.99)	0.27	(10.23)	NA	NA
Tires	71.71	(71.71)	(3.60)	0.27	(28.79)	NA	NA
Mixed Recyclables	NA	NA	(14.94)	(0.05)	(6.61)	NA	NA
Mixed Organics	NA	NA	NA	0.06	(2.42)	0.51	(0.85)
Mixed MSW	NA	NA	NA	(0.05)	(4.71)	NA	NA

Table N2-I Energy Use from Baseline Management of Municipal Solid Waste

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Baseline Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Baseline Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Baseline Composting (Tons)	Energy Consumption from Composting (million BTU)	Baseline Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
Corrugated Containers	7,830.53	7,656.00	(115,630.45)	174.53	(36.41)	0.00	0.00	NA	NA	NA	NA	(115,666.86)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	4,403.00	4,403.00	(90,543.83)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(90,543.83)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	746.00	737.00	(25,811.18)	9.00	2.41	0.00	0.00	NA	NA	NA	NA	(25,808.77)
PLA	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Baseline Generation of Material (Tons)	Baseline Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Baseline Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Baseline Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Baseline Composting (Tons)	Energy Consumption from Composting (million BTU)	Baseline Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	532.00	525.00	(10,482.26)	7.00	1.88	0.00	0.00	NA	NA	NA	NA	(10,480.38)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	1,548.00	1,518.00	(3,226.37)	30.00	8.05	0.00	0.00	NA	NA	NA	NA	(3,218.32)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	191.00	179.00	(931.94)	12.00	3.21	0.00	0.00	NA	NA	NA	NA	(928.73)
Drywall	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	1,863.00	1,841.00	(6,632.33)	22.00	5.90	0.00	0.00	NA	NA	NA	NA	(6,626.42)
Mixed Recyclables	4,972.00	4,914.00	(73,417.73)	58.00	(3.11)	0.00	0.00	NA	NA	NA	NA	(73,420.84)
Mixed Organics	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
TOTAL	**22,085.53**	**21,773.00**	**(326,676.09)**	**312.53**	**(18.07)**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(326,694.16)**

Table N2-J Energy Use from Alternative Management of Municipal Solid Waste

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	Energy Consumption from Source Reduction (million BTU)	Alternative Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Alternative Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Alternative Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Alternative Composting (Tons)	Energy Consumption from Composting (million BTU)	Alternative Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
Corrugated Containers	7,830.53	0.00	0.00	7,830.53	(118,266.42)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(118,266.42)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	4,403.00	0.00	0.00	4,369.67	(89,858.43)	33.33	(5.76)	0.00	0.00	NA	NA	NA	NA	(89,864.19)
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	746.00	0.00	0.00	746.00	(26,126.38)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(26,126.38)
PLA	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Baseline Generation of Material (Tons)	Alternative Source Reduction (Tons)	Energy Consumption from Source Reduction (million BTU)	Alternative Recycling (Tons)	Energy Consumption from Recycling (million BTU)	Alternative Landfilling (Tons)	Energy Consumption from Landfilling (million BTU)	Alternative Combustion (Tons)	Energy Consumption from Combustion (million BTU)	Alternative Composting (Tons)	Energy Consumption from Composting (million BTU)	Alternative Anaerobic Digestion (Tons)	Energy Consumption from Anaerobic Digestion (million BTU)	Total Energy Consumption (million BTU)
CRT Displays	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	532.00	0.00	0.00	532.00	(10,622.02)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(10,622.02)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	1,548.00	0.00	0.00	1,548.00	(3,290.13)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(3,290.13)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	191.00	0.00	0.00	191.00	(994.42)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(994.42)
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	1,863.00	0.00	0.00	1,863.00	(6,711.58)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(6,711.58)
Mixed Recyclables	4,972.00	NA	NA	4,972.00	(74,284.28)	0.00	0.00	0.00	0.00	NA	NA	NA	NA	(74,284.28)
Mixed Organics	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	0.00	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
TOTAL	**22,085.53**	**0.00**	**0.00**	**22,052.20**	**(330,153.66)**	**33.33**	**(5.76)**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(330,159.42)**

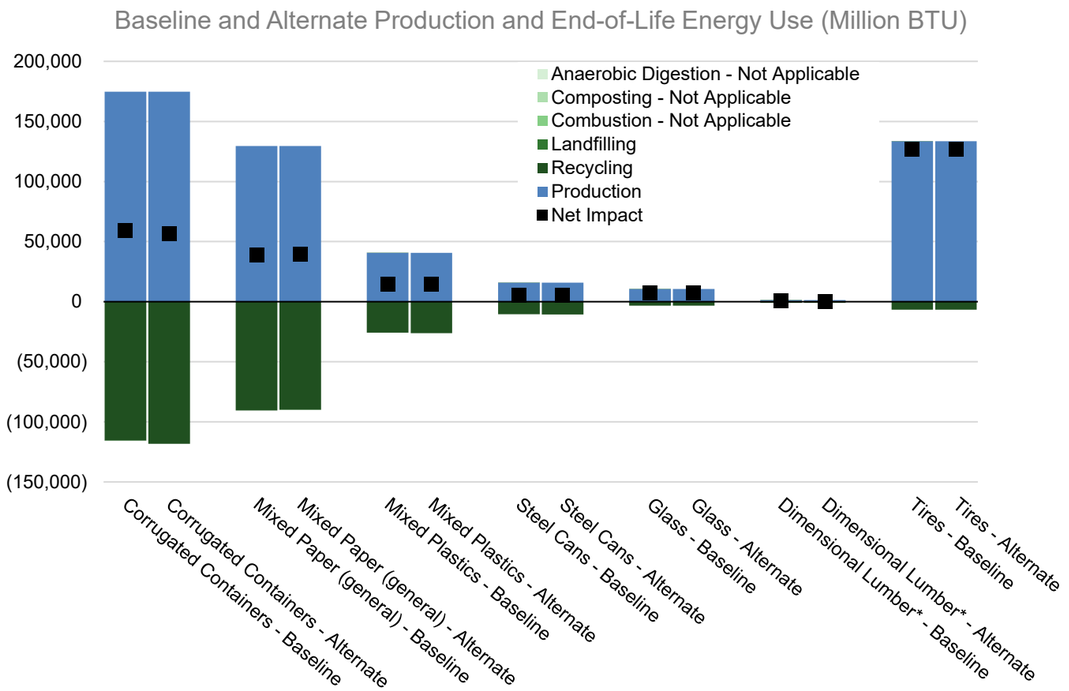
Table N2-K Incremental Energy Use from Alternative Management of Municipal Solid Waste

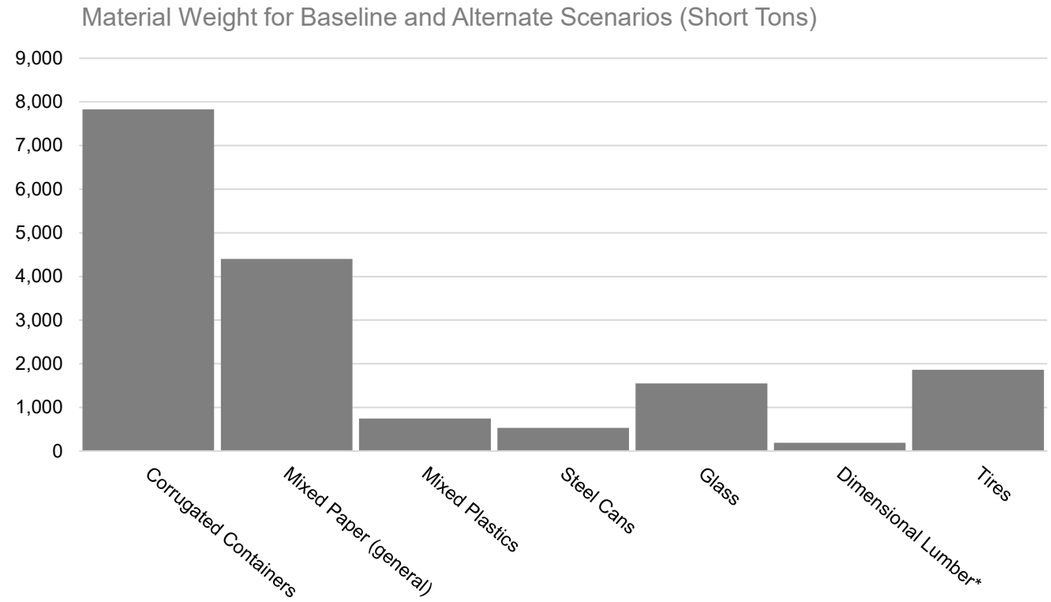
Material	Source Reduction (Tons)	Incremental Energy Consumption from Source Reduction (million BTU)	Incremental Recycling (Tons)	Incremental Energy Consumption from Recycling (million BTU)	Incremental Landfilling (Tons)	Incremental Energy Consumption from Landfilling (million BTU)	Incremental Combustion (Tons)	Incremental Energy Consumption from Combustion (million BTU)	Incremental Composting (Tons)	Incremental Energy Consumption from Composting (million BTU)	Incremental Anaerobic Digestion (Tons)	Incremental Energy Consumption from Anaerobic Digestion (million BTU)	Total Incremental Energy Consumption (million BTU)
Corrugated Containers	0.00	0.00	174.53	(2,635.97)	(174.53)	36.41	0.00	0.00	NA	NA	NA	NA	(2,599.56)
Magazines/third-class mail	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Newspaper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Office Paper	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Phonebooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Textbooks	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (general)	0.00	0.00	(33.33)	685.40	33.33	(5.76)	0.00	0.00	NA	NA	NA	NA	679.64
Mixed Paper (primarily residential)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Paper (primarily from offices)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Food Waste	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (non-meat)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Food Waste (meat only)	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Beef	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Poultry	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grains	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Bread	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fruits and Vegetables	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dairy Products	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Yard Trimmings	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grass	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Leaves	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Branches	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HDPE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PET	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
LLDPE	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PS	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
PVC	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Plastics	0.00	0.00	9.00	(315.20)	(9.00)	(2.41)	0.00	0.00	NA	NA	NA	NA	(317.61)
PLA	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	0.00
Desktop CPUs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Portable Electronic Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00

Material	Source Reduction (Tons)	Incremental Energy Consumption from Source Reduction (million BTU)	Incremental Recycling (Tons)	Incremental Energy Consumption from Recycling (million BTU)	Incremental Landfilling (Tons)	Incremental Energy Consumption from Landfilling (million BTU)	Incremental Combustion (Tons)	Incremental Energy Consumption from Combustion (million BTU)	Incremental Composting (Tons)	Incremental Energy Consumption from Composting (million BTU)	Incremental Anaerobic Digestion (Tons)	Incremental Energy Consumption from Anaerobic Digestion (million BTU)	Total Incremental Energy Consumption (million BTU)
Flat-Panel Displays	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
CRT Displays	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Electronic Peripherals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Hard-Copy Devices	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Electronics	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Cans	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Aluminum Ingot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Steel Cans	0.00	0.00	7.00	(139.76)	(7.00)	(1.88)	0.00	0.00	NA	NA	NA	NA	(141.64)
Copper Wire	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Mixed Metals	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Glass	0.00	0.00	30.00	(63.76)	(30.00)	(8.05)	0.00	0.00	NA	NA	NA	NA	(71.81)
Asphalt Concrete	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Asphalt Shingles	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Carpet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Clay Bricks	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Concrete	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Dimensional Lumber*	0.00	0.00	12.00	(62.48)	(12.00)	(3.21)	0.00	0.00	NA	NA	NA	NA	(65.69)
Drywall	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fiberglass Insulation	0.00	0.00	NA	NA	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Fly Ash	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Medium-density Fiberboard	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Structural Steel	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	NA	NA	0.00
Vinyl Flooring	0.00	0.00	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Wood Flooring*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
Tires	0.00	0.00	22.00	(79.26)	(22.00)	(5.90)	0.00	0.00	NA	NA	NA	NA	(85.16)
Mixed Recyclables	NA	NA	58.00	(866.55)	(58.00)	3.11	0.00	0.00	NA	NA	NA	NA	(863.44)
Mixed Organics	NA	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mixed MSW	NA	NA	NA	NA	0.00	0.00	0.00	0.00	NA	NA	NA	NA	0.00
TOTAL	**0.00**	**0.00**	**279.20**	**(3,477.57)**	**(279.20)**	**12.30**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**(3,465.27)**

**Wood Flooring and Dimensional Lumber model reuse under the recycling management pathway.*

a) For explanation of methodology, see the EPA WARM Documentation: *Documentation Chapters for Greenhouse Gas Emission, Energy and Economic Factors Used in the Waste Reduction Model* available on the Internet at https://www.epa.gov/warm/documentation-chapters-greenhouse-gas-emission-and-energy-factors-used-waste-reduction-model
b) Energy estimates provided by this model are intended to support voluntary energy measurement and reporting initiatives





Notes: Up to seven materials will display in the figures shown. Production emissions are not available for materials for which source reduction impacts are not estimated in WARM. Material weights are based on quantities entered under the baseline scenario.

Table N2-L Production + End-of-Life Impact from Baseline & Alternative Waste Management Scenarios

Production + End-of-Life Impact from Baseline Waste Management Scenario							
Material	Energy Use from Production (million BTU)	End of Life Impacts (million BTU)					Production + End-of-Life Impact (million BTU)
		Energy Use from Recycling	Energy Use from Landfilling	Energy Use from Combustion	Energy Use from Composting	Energy Use from Anaerobic Digestion	
Corrugated Containers	174,781.45	(115,630.45)	(36.41)	-	NA	NA	59,114.59
Mixed Paper (general)	129,637.71	(90,543.83)	-	-	NA	NA	39,093.88
Mixed Plastics	40,605.16	(25,811.18)	2.41	-	NA	NA	14,796.40
Steel Cans	15,896.45	(10,482.26)	1.88	-	NA	NA	5,416.08
Glass	10,688.27	(3,226.37)	8.05	-	NA	NA	7,469.95
Dimensional Lumber*	1,347.51	(931.94)	3.21	-	NA	NA	418.78
Tires	133,593.23	(6,632.33)	5.90	-	NA	NA	126,966.81
Mixed Recyclables	NA	(13,763.87)	1.98	-	NA	NA	(13,761.89)

Production + End-of-Life Impact from Alternate Waste Management Scenario							
Material	Energy Use from Production (million BTU)	End of Life Impacts (million BTU)					Production + End-of-Life Impact (million BTU)
		Energy Use from Recycling	Energy Use from Landfilling	Energy Use from Combustion	Energy Use from Composting	Energy Use from Anaerobic Digestion	
Corrugated Containers	174,781.45	(118,266.42)	-	-	NA	NA	56,515.03
Mixed Paper (general)	129,637.71	(89,858.43)	(5.76)	-	NA	NA	39,773.52
Mixed Plastics	40,605.16	(26,126.38)	-	-	NA	NA	14,478.78
Steel Cans	15,896.45	(10,622.02)	-	-	NA	NA	5,274.44
Glass	10,688.27	(3,290.13)	-	-	NA	NA	7,398.14
Dimensional Lumber*	1,347.51	(994.42)	-	-	NA	NA	353.09
Tires	133,593.23	(6,711.58)	-	-	NA	NA	126,881.65
Mixed Recyclables	NA	(13,926.33)	-	-	NA	NA	(13,926.33)

Appendix O
Financial Plan

Appendix O Financial Plan

1. Funding Mechanisms and Revenue Generated
2. Cost of Implementing Plan
3. Alternative Budget

This Appendix summarizes RCSW's funding mechanisms, projected revenues and expenses for the planning period (2027-2041). RCSW 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 the implementation of the plan and a demonstration of the availability of financial resources for that purpose.

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

RCSW is committed to implementing planned strategies, facilities, programs and/or activities in a cost-effective manner. RCSW is committed to improving effectiveness and reducing the cost of all strategies, facilities, programs and activities. The Board is authorized to expend 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. This section explains the revenue production mechanisms that RCSW will use, to list the expected costs of the programs that RCSW will implement during the planning period, and to demonstrate that RCSW can fund the requirements of this Plan for the entire fifteen-year planning period.

Disposal Fee

RCSW does not receive revenue from disposal fees; therefore, Table O1-A has been omitted.

Table O1-A Disposal Fee Schedule & Revenue (in accordance with ORC Section 3734.57(B))

The Richland County Solid Waste Management Authority does not collect a disposal fee.

Generation Fee

The generation fee is a fee paid on all municipal solid waste generated in Richland County. It is collected at the first disposal facility, transfer facility or landfill to receive the waste. The generation fee is not paid on exempt waste.

Auto shredder residue currently accepted at Noble Road Landfill may be designated for use as alternate daily cover. The 2017 Ohio Budget Bill exempts solid waste used as an ADC from the collection of solid waste fees. 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 2023 was $7.50 per ton. RCSW will continue to collect a generation fee of $7.50 until the fifth year of the planning period. As part of the 2020 Solid Waste Management Plan Update, the generation fee was raised to $8.50 effective on January 1, 2032. RCSW will reassess the generation fee level that is required to support the planned programs when the next five-year plan update is prepared.

Table O1-B Generation Fee Schedule and Revenue (2019 – 2024)

Year	Generation Fee Schedule ($ per ton)	Total Revenue from Generation Fee ($)
2019	$7.50	$908,484
2020	$7.50	$749,741
2021	$7.50	$911,845
2022	$7.50	$903,164
2023	$7.50	$867,324
2024	$7.50	$903,666

Source(s) of Information: Ohio EPA Quarterly Fee Reports; Table G-2 Generation Projections

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 is used as an alternate daily cover and is therefore exempt from solid waste fees per ORC.

Table O1-C Generation Fee Historical Revenue Analysis

Historical Revenue Analysis (Revenue $)					
Average revenue received ($)	Annual change in revenue received		Annual % Change in revenue received		Average % change in revenue received %
	Year	Revenue	Year	%	
$874,037	2019		2019		0.68%
	2020	-$158,743	2020	-17.47%	
	2021	$162,104	2021	21.62%	
	2022	-$8,681	2022	-0.95%	
	2023	-$35,839	2023	-3.97%	
	2024	$36,341	2024	4.19%	

The Historic Revenue Analysis shows that RCSW averaged $874,037 per year for the six-year period. The average percentage change over the period was 0.68% per year.

Projecting Generation Fee revenue into the planning period was accomplished by looking at the residential/commercial waste and industrial waste that is projected to be disposed through the planning period the generation fee of $7.50/ton. To project the generation fee collected during the planning period, the waste projected to be generated in each year was multiplied by the generation fee of $7.50 (increased to $8.50 in 2032). From the seventh year of the planning period on, the waste generation has been held constant 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.

Table O1-D Generation Fee Schedule and Revenue (2025 – 2041)

Year	Generation Fee Schedule ($ per ton)	Total Revenue from Generation Fee ($)
2025	$7.50	$834,219
2026	$7.50	$830,603
2027	$7.50	$833,518
2028	$7.50	$830,011
2029	$7.50	$826,555
2030	$7.50	$816,674
2031	$7.50	$812,093
2032	$8.50	$915,235
2033	$8.50	$915,235
2034	$8.50	$915,235
2035	$8.50	$915,235
2036	$8.50	$915,235
2037	$8.50	$915,235
2038	$8.50	$915,235
2039	$8.50	$915,235
2040	$8.50	$915,235
2041	$8.50	$915,235

Year 2025 –
Sample Calculations:

102,515 tons of residential/commercial waste disposed + 8,714 tons of industrial waste disposed
111,229 tons of waste disposed
$7.50 per ton X 111,229 tons = $834,219

Assumptions:
The average percentage change in revenue from 2019 to 2024 is 0.68%. If the Generation Fee revenue is projected with this average change, the SWMA would see Generation Fees grow to just over $1,000,000 by the end of the planning period. While this is a reasonable projection, RCSW chose to use tonnage of waste disposed as the basis for the projection because it is more conservative for budgeting purposes.

The residential/commercial waste generation throughout the planning period decreases due to the population projections and the industrial waste also declines based on the historic data (2018 – 2023). Because the Generation Fee revenue depends on the waste disposed and the waste being disposed is decreasing in the projections, the projected revenue from the Generation Fee is also decreasing until 2032 when the fee is scheduled to increase.

Designation Fees

In addition to the generation fee, RCSW receives one dollar for each ton of out-of-district waste and two dollars 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. The amount of waste from outside of Richland County 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 the previous year's receipts. Rumpke believes that the amount of out-of-district waste received by the landfill will increase over time. RCSW is projecting modest growth in revenue from the contract fee of nearly 3% 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 years to the facility life per the authorized maximum daily waste receipt and additional years beyond 24 based on the actual gate receipts. RCSW is confident that the landfill will continue to expand and actively seek customers from out-of-district and out-of-state.

Table O1-E Designation Fee Schedule and Revenue (2019 – 2024)

Year	Designation Fee Schedule ($ per ton)	Total Designation Fee Revenue ($)
2019	$687,577	$687,577
2020	$658,769	$658,769
2021	$847,814	$847,814
2022	$804,984	$804,984
2023	***$793,164***	***$793,164***
2024	$757,880	$757,880

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

Table O1-F Designation Fee Historical Revenue Analysis

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	%	%
$758,365	2019		2019		2.71%
	2020	-$28,808	2020	-4%	
	2021	$189,045	2021	29%	
	2022	-$42,830	2022	-5%	
	2023	-$11,821	2023	-1%	
	2024	-$35,283	2024	-4%	

The Historic Revenue Analysis shows that RCSW averaged $758,365 per year for the six-year historic review period. The average percentage change over the period was 2.71% 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 2.71%. This value was used to project the designation fee collected during the planning period. The increase was calculated 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.

Table O1-G Designation Fee Schedule and Revenue (2025 – 2041)

Year	Designation Fee Schedule ($ per ton)	Total Designation Fee Revenue ($)
2025	$778,401	$778,401
2026	$799,477	$799,477
2027	$821,124	$821,124
2028	$843,357	$843,357
2029	$866,193	$866,193
2030	$889,646	$889,646
2031	$913,735	$913,735
2032	$938,475	$938,475
2033	$938,475	$938,475
2034	$938,475	$938,475
2035	$938,475	$938,475
2036	$938,475	$938,475
2037	$938,475	$938,475
2038	$938,475	$938,475
2039	$938,475	$938,475
2040	$938,475	$938,475
2041	$938,475	$938,475

2020 through 2026 Designation Fee = previous year Designation Fee × 1.0271
= $778,401 × 1.0271
= $799,477

Debt/Loans

Since the last solid waste plan update, RCSW has not incurred any loans, and currently they do not have any specific plans to borrow during the planning period. However, RCSW's Board of Directors is authorized to secure loans 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 O1-H Debt

Table O1-H "Debt" has been omitted.

Other Sources of District Revenue

Grants: RCSW was awarded grants in 2021, 2022, 2023 and 2024. These grants were used to fund HHW collection events, for the purchase of a new truck to transport the SCRAP Trailer, and a new trailer for the SCRAP Trailer program. Because RCSW cannot predict if grants will be available, grants are not included in the budget for the planning period. RCSW 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 RCSW's compost facility provide a substantial portion of the cost for running the facility. RCSW charges a fee for incoming material and sells the completed compost. The projected fee is based on an average of fees earned in 2019 through 2024. The average annual percentage change throughout that period was 11.5% year to year. While RCSW believes that the revenue from the Compost Facility Use Fee will continue to grow, 11.5% is too aggressive. For the purpose of predicting future revenue, RCSW assumed the average revenue received from 2019 through 2024 for the Compost Facility Use Fee would be realized year to year through the planning period.

Recycling facility fees: RCSW 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 Richland County Collection and Recycling Facility. The average annual amount collected from 2019 to 2024 was $35,487. For the purpose of predicting future revenue, RCSW assumed the average revenue received from 2019 through 2024 would be realized year to year through the planning period.

Sale of recyclables: RCSW receives revenue from the sale of materials that are collected at the Richland County Collection/Recycling Facility on National Parkway. The revenue from these programs will vary depending on the market price for recyclable materials. The average annual amount collected from 2019 to 2024 was $16,274. For the purpose of predicting future revenue, RCSW assumed the average revenue received from 2019 through 2024 would be realized year to year through the planning period.

Reimbursements: This category includes revenue from ARPA grants and COVID relief programs. The amount of revenue generally realized from this source is not consistent or predictable. Therefore, it has not been included in the budget for the planning period.

Restitution: This category includes revenue collected from the prosecution of litter and open dumping cases. The amount of revenue generally realized from this source is not consistent or predictable. Therefore, it has not been included in the budget for the planning period.

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 O1-I Other Sources of Revenue

Year	Grants	Compost Facility Use Fee	Recycling Facility Fees	Recycling Revenue	Reimbursements	Restitution	Other	Total Other Revenue
2019	$0	$34,113	$26,910	$10,561	$218	$0	$162	$71,964
2020	$0	$47,531	$45,305	$12,592	$500	$0	$3,544	$109,473
2021	$15,906	$44,399	$36,354	$14,609	$2,358	$0	$6,479	$120,105
2022	$50,762	$53,048	$35,841	$21,569	$141	$0	$800	$162,161
2023	$60,000	$49,298	$34,608	$10,605	$10,647	$339	$12,873	$178,369
2024	$20,000	$55,445	$33,907	$27,707	$16,917	$973	$11,068	$166,017
2025		$47,306	$35,487	$16,274				$99,067
2026		$47,306	$35,487	$16,274				$99,067
2027		$47,306	$35,487	$16,274				$99,067
2028		$47,306	$35,487	$16,274				$99,067
2029		$47,306	$35,487	$16,274				$99,067
2030		$47,306	$35,487	$16,274				$99,067
2031		$47,306	$35,487	$16,274				$99,067
2032		$47,306	$35,487	$16,274				$99,067
2033		$47,306	$35,487	$16,274				$99,067
2034		$47,306	$35,487	$16,274				$99,067
2035		$47,306	$35,487	$16,274				$99,067
2036		$47,306	$35,487	$16,274				$99,067
2037		$47,306	$35,487	$16,274				$99,067
2038		$47,306	$35,487	$16,274				$99,067
2039		$47,306	$35,487	$16,274				$99,067
2040		$47,306	$35,487	$16,274				$99,067
2041		$47,306	$35,487	$16,274				$99,067

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

Summary of District Revenues

The total revenue, comprised of generation fees and other revenue, was $1,838,857 during the reference year. Revenue in the first year of the planning period (2027) is projected to be $1,753,710. Revenue is projected to increase annually to $1,952,777 in 2032. From 2032 through the end of the planning period, the revenue is held constant. The following table presents a summary of RCSW's actual and projected total revenue from 2019 to 2041.

Table O1-J Total Revenue

Year	Disposal Fees	Generation Fees	Designation Fees	Other Revenue	Total Revenue
2019	$0	$908,484	$687,577	$71,964	$1,668,025
2020	$0	$749,741	$658,769	$109,473	$1,517,983
2021	$0	$911,845	$847,814	$120,105	$1,879,765
2022	$0	$903,164	$804,984	$162,161	$1,870,309
2023	$0	$867,324	$793,164	$178,369	$1,838,857
2024	$0	$903,666	$757,880	$166,017	$1,827,563
2025	$0	$834,219	$778,401	$99,067	$1,711,687
2026	$0	$830,603	$799,477	$99,067	$1,729,147
2027	$0	$833,518	$821,124	$99,067	$1,753,710
2028	$0	$830,011	$843,357	$99,067	$1,772,435
2029	$0	$826,555	$866,193	$99,067	$1,791,815
2030	$0	$816,674	$889,646	$99,067	$1,805,387
2031	$0	$812,093	$913,735	$99,067	$1,824,895
2032	$0	$915,235	$938,475	$99,067	$1,952,777
2033	$0	$915,235	$938,475	$99,067	$1,952,777
2034	$0	$915,235	$938,475	$99,067	$1,952,777
2035	$0	$915,235	$938,475	$99,067	$1,952,777
2036	$0	$915,235	$938,475	$99,067	$1,952,777
2037	$0	$915,235	$938,475	$99,067	$1,952,777
2038	$0	$915,235	$938,475	$99,067	$1,952,777
2039	$0	$915,235	$938,475	$99,067	$1,952,777
2040	$0	$915,235	$938,475	$99,067	$1,952,777
2041	$0	$915,235	$938,475	$99,067	$1,952,777

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

2. Cost of Implementing Plan

Table O2-A Expenses

Line #	Category/ Program	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
1	**Plan Monitoring/ Preparation**	**$28,577**	**$12,284**	**$1,375**	**$10,553**	**$6,000**	**$13,419**	**$13,741**	**$14,071**	**$14,409**	**$14,754**	**$15,108**	**$15,471**	**$15,842**	**$16,223**	**$16,612**	**$17,011**	**$17,419**	**$17,837**	**$18,265**	**$18,703**	**$19,152**	**$19,612**	**$20,083**
	Plan Preparation	$23,077	$11,459	$0	$6,428	$0	$5,715	$5,852	$5,993	$6,136	$6,284	$6,435	$6,589	$6,747	$6,909	$7,075	$7,245	$7,418	$7,597	$7,779	$7,966	$8,157	$8,352	$8,553
	Plan Monitoring	$5,500	$825	$1,375	$4,125	$6,000	$7,704	$7,889	$8,078	$8,272	$8,471	$8,674	$8,882	$9,095	$9,314	$9,537	$9,766	$10,000	$10,240	$10,486	$10,738	$10,996	$11,259	$11,530
2	**Plan Implementation**	**$1,522,127**	**$1,149,188**	**$1,183,478**	**$1,328,711**	**$1,483,810**	**$1,484,184**	**$1,519,804**	**$1,556,279**	**$1,593,630**	**$1,631,877**	**$1,671,042**	**$1,711,147**	**$1,752,215**	**$1,794,268**	**$1,837,330**	**$1,881,426**	**$1,926,581**	**$1,972,819**	**$2,020,166**	**$2,068,650**	**$2,118,298**	**$2,169,137**	**$2,221,196**
2a.	District Administration	$568,131	$187,228	$199,459	$204,395	$244,524	$233,718	$239,327	$245,071	$250,953	$256,976	$263,143	$269,459	$275,926	$282,548	$289,329	$296,273	$303,383	$310,665	$318,121	$325,756	$333,574	$341,579	$349,777
	Personnel	$109,859	$113,510	$120,618	$123,240	$139,666	$151,533	$155,170	$158,894	$162,708	$166,613	$170,611	$174,706	$178,899	$183,192	$187,589	$192,091	$196,701	$201,422	$206,256	$211,207	$216,276	$221,466	$226,781
	Office Overhead	$46,620	$27,368	$36,152	$37,528	$48,761	$40,873	$41,854	$42,858	$43,887	$44,940	$46,019	$47,123	$48,254	$49,412	$50,598	$51,812	$53,056	$54,329	$55,633	$56,968	$58,335	$59,735	$61,169
	Other	$411,652	$46,349	$42,689	$43,628	$56,098	$41,312	$42,304	$43,319	$44,359	$45,423	$46,513	$47,630	$48,773	$49,943	$51,142	$52,369	$53,626	$54,913	$56,231	$57,581	$58,963	$60,378	$61,827
2b.	Facility Operation	$480,565	$467,744	$397,010	$453,078	$415,021	$407,742	$417,528	$427,549	$437,810	$448,317	$459,077	$470,095	$481,377	$492,930	$504,760	$516,875	$529,280	$541,982	$554,990	$568,310	$581,949	$595,916	$610,218
	(2) Compost	$103,750	$64,796	$63,968	$81,446	$86,064	$100,393	$102,803	$105,270	$107,797	$110,384	$113,033	$115,746	$118,524	$121,368	$124,281	$127,264	$130,318	$133,446	$136,648	$139,928	$143,286	$146,725	$150,246
2c.	Landfill Closure/ Post-Closure	$376,815	$402,948	$333,042	$371,632	$328,957	$307,349	$314,725	$322,279	$330,013	$337,934	$346,044	$354,349	$362,853	$371,562	$380,479	$389,611	$398,962	$408,537	$418,342	$428,382	$438,663	$449,191	$459,971
2d.	Recycling Collection	$351,467	$328,064	$412,873	$450,977	$481,842	$563,689	$577,218	$591,071	$605,257	$619,783	$634,658	$649,890	$665,487	$681,459	$697,814	$714,561	$731,711	$749,272	$767,254	$785,668	$804,524	$823,833	$843,605
	(2) Drop-off	$259,723	$234,625	$313,259	$329,722	$361,164	$412,835	$422,743	$432,889	$443,278	$453,917	$464,811	$475,967	$487,390	$499,087	$511,065	$523,331	$535,891	$548,752	$561,922	$575,408	$589,218	$603,359	$617,840
	(5) Business/ Institutional	$91,744	$93,439	$99,614	$121,255	$120,677	$150,854	$154,475	$158,182	$161,978	$165,866	$169,847	$173,923	$178,097	$182,372	$186,748	$191,230	$195,820	$200,520	$205,332	$210,260	$215,306	$220,474	$225,765
2e.	Special Collections	$0	$49,917	$47,344	$80,070	$75,893	$137,600	$140,903	$144,284	$147,747	$151,293	$154,924	$158,642	$162,450	$166,348	$170,341	$174,429	$178,615	$182,902	$187,292	$191,787	$196,390	$201,103	$205,929
	(1) Tire Collection		$13,046	$9,782	$18,882	$22,055	$40,919	$41,901	$42,907	$43,937	$44,991	$46,071	$47,177	$48,309	$49,468	$50,655	$51,871	$53,116	$54,391	$55,696	$57,033	$58,402	$59,803	$61,239
	(2) HHW Collection		$36,871	$37,562	$61,188	$53,661	$83,753	$85,763	$87,821	$89,929	$92,087	$94,297	$96,561	$98,878	$101,251	$103,681	$106,169	$108,718	$111,327	$113,999	$116,735	$119,536	$122,405	$125,343
	(3) Electronics Collection		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	(4) Appliance Collection		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Other Collection Drives		$0	$0	$0	$176	$12,928	$13,238	$13,556	$13,881	$14,215	$14,556	$14,905	$15,263	$15,629	$16,004	$16,388	$16,782	$17,184	$17,597	$18,019	$18,452	$18,894	$19,348
2g.	Education/ Awareness	$75,556	$67,534	$88,145	$95,714	$145,033	$91,321	$93,513	$95,757	$98,055	$100,409	$102,818	$105,286	$107,813	$110,400	$113,050	$115,763	$118,542	$121,387	$124,300	$127,283	$130,338	$133,466	$136,669
	(1) Education Staff	$63,668	$61,309	$67,756	$72,295	$84,712	$86,747	$88,829	$90,961	$93,144	$95,380	$97,669	$100,013	$102,413	$104,871	$107,388	$109,965	$112,604	$115,307	$118,074	$120,908	$123,810	$126,781	$129,824
	(2) Advertisement/ Promotion	$11,887	$6,224	$8,188	$9,002	$10,672	$4,574	$4,684	$4,796	$4,911	$5,029	$5,150	$5,273	$5,400	$5,530	$5,662	$5,798	$5,937	$6,080	$6,226	$6,375	$6,528	$6,685	$6,845
2h.	Recycling Market Development	$0	$5,990	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2i.	Dump Cleanup	$34,303	$36,206	$38,396	$44,476	$121,616	$50,113	$51,315	$52,547	$53,808	$55,099	$56,422	$57,776	$59,163	$60,583	$62,036	$63,525	$65,050	$66,611	$68,210	$69,847	$71,523	$73,240	$74,998
2j.	Litter Collection/ Education	$11,106	$1,018	$250	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
2n.	Other	$1,000	$5,488	$0	$0	-$118	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
3	**Health Dept. Enforcement**	**$8,487**	**$4,149**	**$8,860**	**$8,160**	**$4,475**	**$9,240**	**$9,462**	**$9,689**	**$9,922**	**$10,160**	**$10,404**	**$10,653**	**$10,909**	**$11,171**	**$11,439**	**$11,713**	**$11,994**	**$12,282**	**$12,577**	**$12,879**	**$13,188**	**$13,505**	**$13,829**
	Richland Public Health	$8,487	$4,149	$8,860	$8,160	$4,475	$9,240	$9,462	$9,689	$9,922	$10,160	$10,404	$10,653	$10,909	$11,171	$11,439	$11,713	$11,994	$12,282	$12,577	$12,879	$13,188	$13,505	$13,829
4	**County Assistance**	**$0**	**$0**	**$0**	**$0**	**$150,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
	Maintaining Roads					$150,000		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Expenses	$1,559,190	$1,165,621	$1,193,713	$1,347,424	$1,649,010	$1,506,843	$1,543,007	$1,580,039	$1,617,960	$1,656,791	$1,696,554	$1,737,272	$1,778,966	$1,821,661	$1,865,381	$1,910,150	$1,955,994	$2,002,938	$2,051,008	$2,100,232	$2,150,638	$2,202,253	$2,255,107

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

Years 2025 through 2041 estimated with a 2.4% inflation factor.

Explanation of Expenses

Table O2-A includes actual expenses from 2019 to 2024 and anticipated expenses and projected expenditures from 2025 to 2041. Line-items explained below are numbered according to the corresponding line-item number in Table O2-A. Line items that did not have any expenditure projected throughout the planning period were omitted from the discussion below. Projections were developed using a 2.4% inflation factor each year of the planning period. This corresponds to the inflation factor Ohio EPA published for 2024 Financial Assurance cost estimate increases.

Plan Monitoring/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.

Plan Implementation

2a. Authority Administration

This expense includes the salaries and benefits of two full-time employees, RCSW's Executive Director and the Financial Manager; utilities; office equipment and supplies; telephone, mailing, mileage, staff training and miscellaneous expenses directly required for the administration of RCSW programs. Also included are consulting contracts for legal fees and other professional services that may be needed.

2b. Facility Operation

(1) *MRF/Recycling Center*

The operating expenses for the Richland County Collection/Recycling Facility are included in the Recycling Collection, Drop-off line item of Table O2-A.

(2) *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 RCSW revenue table.

2c. Landfill Closure/Post-Closure

Maintenance and monitoring costs for the closed Richland County Landfill include wages and benefits for approximately 2 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 the 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 and require attention, often immediately. The landfill line item has been estimated on the higher side to account for the potential of unforeseen needs.

2d. Recycling Collection

(1) Curbside

(2) Drop-off

RCSW currently has a contract with Rumpke to provide and empty the recycling bins at the Recycling Drop-Off locations and manage the materials that are collected. Also included are the expenses for wages and benefits for ½ FTE employee and use of a RCSW vehicle for monitoring the bins, fuel costs and other miscellaneous expenses required to maintain the 14 full-time drop-off locations throughout Richland County.

(3) 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 listed in this Plan.

(4) Richland County Collection/Recycling

The Facility manages appliance, electronics, tires, and household recyclables that are dropped off by Richland County residents as well as similar materials collected on the government/institution/commercial collection route. The expenses from the operation of this facility include 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. RCSW receives revenue from the sale of the recyclables collected at this facility.

(5) Business/Institutional

The cost of operating the government/institution/commercial collection route is included 1.5 FTE employees as well as fuel and maintenance for the collection vehicle.

(6) Other

2e. Special Collections

These Items are included in the cost for operating the Richland County Collection/ Recycling Facility.

(1) Tire Collection

RCSW hosts a scrap tire collection event annually and collects scrap tires year-round at the Richland County Collection/Recycling Facility. The costs for this program include the management of the scrap tires. Payroll costs are included in the operation of the Richland County Collection/Recycling Facility.

(2) HHW Collection

RCSW hosts a HHW collection event annually and collects HHW year-round at the Richland County Collection/Recycling Facility. The costs for this program include the management of the materials collected. Payroll costs are included in the operation of the Richland County Collection/Recycling Facility.

(3) *Electronics Collection*
RCSW collects electronics year-round at the Richland County Collection/Recycling Facility. The costs for this program include the management of the materials collected. Payroll costs are included in the operation of the Richland County Collection/Recycling Facility. An additional $10,000 per year through 2032 is planned for the electronics focus. This will be to cover advertising, education and any excess cost associated with material processing.

(4) *Appliance Collection*
RCSW collects appliances year-round at the Richland County Collection/Recycling Facility. The costs for this program include the management of the materials collected specifically freon that is removed from refrigerators, air conditioners, etc. Payroll costs are included in the operation of the Richland County Collection/Recycling Facility. In addition to the collection at the Richland County Collection/Recycling Facility, RCSW may host other events throughout the year with different sponsoring partners. The cost for these events is typically covered by the sponsoring organization.

2f. Yard Waste/Other Organics
RCSW manages yard waste at the Richland County Compost Facility.

2g. Education/Awareness
Expense includes utilities and maintenance for the educational classroom, 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 (annual calendar contest), and paid advertising to promote the drop-off program, the scrap trailer, and special recycling events.

(1) *Education Staff*
RCSW employs one full-time education coordinator.

(2) *Advertisement/Promotion*
RCSW regularly advertises their education program as well as provides materials that promote the recycling programs offered throughout Richland County.

2h. Recycling Market Development
(1) *General Market Development Activities*
RCSW regularly advertises their education program as well as provides materials that promote the recycling programs offered throughout Richland County.

2i. 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, RCSW implemented a program partnered with the Richland County Sheriff's office. Through this partnership, a Deputy Sheriff is assigned to patrol for and respond to litter complaints. This position focuses on roadside litter clean-up and enforcing Richland County's litter laws. The Deputy reports open dumping to the Health Department and Ohio EPA as appropriate.

2j. Litter Collection/Education

Health Dept. Enforcement

RCSW provides funds to Richland Public Health that are intended to help them administer the solid waste program in Richland County. Areas of the solid waste program that RCSW helps fund include inspections at landfills, tire facilities, compost facilities, etc., trash hauler 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 RCSW under this program the Board may consider the request. If a determination is made to provide the funding, the dollars will come from RCSW'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 budget and not exceed $150,000 per year.

Open Dump, Litter Law Enforcement

- Heath Departments
- Local Law Enforcement
- Other

Table O2-B Budget Summary

Year	Revenue	Expenses	Annual Surplus/Deficit ($)	Balance ($)
2018	Ending Balance			$1,518,978
2019	$1,668,025	$1,559,190	$108,835	$1,627,813
2020	$1,517,983	$1,165,621	$352,362	$1,980,175
2021	$1,879,765	$1,193,713	$686,052	$2,666,227
2022	$1,870,309	$1,347,424	$522,886	$3,189,113
2023	$1,838,857	$1,649,010	$189,847	$3,378,960
2024	$1,827,563	$1,506,843	$320,720	$3,699,680
2025	$1,711,687	$1,543,007	$168,680	$3,868,360
2026	$1,729,147	$1,580,039	$149,108	$4,017,468
2027	$1,753,710	$1,617,960	$135,749	$4,153,217
2028	$1,772,435	$1,656,791	$115,644	$4,268,861
2029	$1,791,815	$1,696,554	$95,261	$4,364,122
2030	$1,805,387	$1,737,272	$68,116	$4,432,238
2031	$1,824,895	$1,778,966	$45,929	$4,478,167
2032	$1,952,777	$1,821,661	$131,116	$4,609,283
2033	$1,952,777	$1,865,381	$87,396	$4,696,679
2034	$1,952,777	$1,910,150	$42,627	$4,739,306
2035	$1,952,777	$1,955,994	-$3,217	$4,736,089
2036	$1,952,777	$2,002,938	-$50,161	$4,685,928
2037	$1,952,777	$2,051,008	-$98,231	$4,587,697
2038	$1,952,777	$2,100,232	-$147,455	$4,440,242
2039	$1,952,777	$2,150,638	-$197,861	$4,242,381
2040	$1,952,777	$2,202,253	-$249,476	$3,992,905
2041	$1,952,777	$2,255,107	-$302,330	$3,690,575

RCSW started the 2023 reference year with a carry-over balance of $3,378,960. Based on revenue and expenditure projections discussed throughout this appendix, RCSW is expected to begin the planning period in 2027 with an estimated carry-over balance of $4,153,217 and end the planning period with a carry-over balance of $3,690,575. 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 O2-B presents a summary of RCSW's budget, including revenue, expenditures, and fund balance.

3. Alternative Budget

Contingent Funding

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

The primary source of funding for RCSW 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 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, RCSW will not receive the projected annual contract fee revenue (See Table O1-E). It would not be feasible for RCSW to make program cuts that would allow them to implement this Plan without an increase in other revenues. It is important that the contract revenue is closely monitored, and an open line of communication is maintained with the landfill owners and operators to access any conditions which might reduce the contract fee revenue. It is also important that RCSW maintain a reasonable fund balance to provide some cushion for unexpected costs or unexpected drops in revenue. RCSW believes that the carry-over projected in this Plan is appropriate.

If the RCSW Board of Directors identifies a shortfall in revenue that threatens their ability to implement programs that are required in this Plan, the Board of Directors will initiate the process to raise the generation fee to an amount that will allow the implementation of 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.

Appendix P
Designation

Appendix P Designation

1. Statement Authorizing/Precluding Designation
2. Designated Facilities

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.

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 RCSW, following a review of the request by the Board of Directors. Where RCSW 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 RCSW's Solid Waste Management Plan.

The facility's compliance with all rules promulgated by RCSW and RCSW'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 Richland County waste must be taken. However, RCSW reserves the right to designate a facility or facilities.

Waiver Process for Undesignated Facilities

If RCSW 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.

RCSW 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 RCSW'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 RCSW's approved plan.

Appendix Q
District Rules

Appendix Q District Rules

1. Existing Rules
2. Proposed 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 RCSW deems appropriate, adopt the rules necessary to implement the ratified and approved Solid Waste Management Plan. Since changes may occur during the planning period, RCSW 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.

e. 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.

f. In order to adopt rules deemed necessary in the future, RCSW's Board of Directors will use the following procedures:

g. RCSW will draft rules as needed.

h. Upon completion, the Board will mail copies of the rules to the Richland County Board of Commissioners and other interested parties.

i. 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.

j. The Board will hold at least one public hearing on the proposed rule or rules.

k. 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.

l. 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.

m. 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

Appendix R Blank Survey Form and Related Information

1. Blank Survey Form
2. Related Information

1. Blank Survey Form

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? ☐ YES ☐ NO			

Table B: Quantities of Recycled Materials			
Recyclable Material Category	**Amount Recycled in 2024**	**Units**	**Name of hauler or processor that takes the material / other Comments**
Lead-Acid Batteries		☐ lbs. ☐ tons ☐ yd^3	
Food		☐ lbs. ☐ tons ☐ yd^3	
Glass		☐ lbs. ☐ tons ☐ yd^3	
Ferrous Metals		☐ lbs. ☐ tons ☐ yd^3	
Non-Ferrous Metals		☐ lbs. ☐ tons ☐ yd^3	
Corrugated Cardboard		☐ lbs. ☐ tons ☐ yd^3	
All Other Paper		☐ lbs. ☐ tons ☐ yd^3	
Plastics		☐ lbs. ☐ tons ☐ yd^3	
Textiles		☐ lbs. ☐ tons ☐ yd^3	
Wood		☐ lbs. ☐ tons ☐ yd^3	
Rubber		☐ lbs. ☐ tons ☐ yd^3	
Commingled Recyclables		☐ lbs. ☐ tons ☐ yd^3	
Yard Waste		☐ lbs. ☐ tons ☐ yd^3	
Recycled Ash		☐ lbs. ☐ tons ☐ yd^3	
Non-Excluded Foundry		☐ lbs. ☐ tons ☐ yd^3	
Flue Gas Desulfurization		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	

Table C: Please provide any additional information, comments, suggestions, questions etc.

2. Related Information

RICHLAND COUNTY
SOLID WASTE AUTHORITY

Dear Commercial or Industrial 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 and industrial businesses recycled in the Richland County Solid Waste Authority and Ohio in 2025. 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 Ed Merriman, the Richland County Solid Waste Authority's consultant, at emerriman@manniksmithgroup.com or 419-279-5178.

Please complete and submit this survey no later than 4/15/2026.

Options for Returning the Completed Survey

- Email directly to Ed Merriman emerriman@manniksmithgroup.com, Subject Line: 2025 RCSWMA Survey
- Fax to (419) 891-1595, Attention: Ed Merriman
- Mail to Ed Merriman at The Mannik & Smith Group 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? ☐ Yes ☐ 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 2024**	**Units**	**Name of hauler or processor that takes the material/ other Comments**
Lead-Acid Batteries		☐ lbs. ☐ tons ☐ yd^3	
Food		☐ lbs. ☐ tons ☐ yd^3	
Glass		☐ lbs. ☐ tons ☐ yd^3	
Ferrous Metals		☐ lbs. ☐ tons ☐ yd^3	
Non-Ferrous Metals		☐ lbs. ☐ tons ☐ yd^3	
Corrugated Cardboard		☐ lbs. ☐ tons ☐ yd^3	
All Other Paper		☐ lbs. ☐ tons ☐ yd^3	
Plastics		☐ lbs. ☐ tons ☐ yd^3	
Textiles		☐ lbs. ☐ tons ☐ yd^3	
Wood		☐ lbs. ☐ tons ☐ yd^3	
Rubber		☐ lbs. ☐ tons ☐ yd^3	
Commingled Recyclables		☐ lbs. ☐ tons ☐ yd^3	
Yard Waste		☐ lbs. ☐ tons ☐ yd^3	
Recycled Ash		☐ lbs. ☐ tons ☐ yd^3	
Non-Excluded Foundry		☐ lbs. ☐ tons ☐ yd^3	
Flue Gas Desulfurization		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	
Other:		☐ lbs. ☐ tons ☐ yd^3	

Table C: Please provide any additional information, comments, suggestions, questions etc.

Thank you again for taking the time to complete this survey. Please contact Ed Merriman with any questions.

Ed Merriman, Sr. Project Manager
Consultant to the Richland County Solid Waste Authority
Phone: 419-279-5178
Email: emerriman@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.

Appendix S
Siting Strategy

Appendix S Siting Strategy

1. Siting Strategy

1. 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

Appendix T Miscellaneous Plan Documents

1. Miscellaneous Plan Documents

District resolutions, certification statements, public notices, other notices (e.g., the notice sent to the 50 largest generators)

1. Miscellaneous Plan Documents

Certification Statement for the Draft Plan

For the Richland County 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.

Darrell Banks, Richland County Commissioner
County Commissioner — Date Signed: 8/13/2025

Jodie Perry, Mansfield Mayor
Municipal Officer or Designee — Date Signed: 8/19/2025

Jack Butler, Washington Township Trustee
Township Representative — Date Signed: 8-19-2025

Joe Harrod, Director of Environmental Health
Health Commissioner or Designee — Date Signed: 8/13/25

Allen Wheeler, Gorman-Rupp
Solid Waste Generator Representative — Date Signed: 8/13/2025

Terry Thompson
Member Representing General Interests of Citizens — Date Signed: 8-13-2025

Larry Weirich
Public Representative — Date Signed: 8-13-2025

Appendix U
Ratification Results

Appendix U Ratification Results

1. Ratification Results

1. Ratification Results

Table U-1 Ratification Summary

Richland			
Board of County Commissioners	**Approved**	**Rejected**	**Date Resolution Adopted**
Community	**Population**		**Date Resolution Adopted**
	Approved	Rejected	
Cities			
Townships			
Villages			
Total	0	0	
County Population			
Ratification percentage			

Appendix V
Inventory of Open Dumps and Other Disposal Facilities

Appendix V Inventory of Open Dumps and Other Disposal Facilities

1. Existing Open Dumps and Waste Tire Dumps
2. Ash, Foundry Sand, and Slag Disposal Sites

1. Existing Open Dumps and Waste Tire Dumps

Table V-1 Existing Solid Waste Open Dumps

Site Location (either address or description of site location)	Materials at Site (solid waste and/or scrap tires)

2. Ash, Foundry Sand, and Slag Disposal Sites

Table V-2 Existing Ash, Foundry Sand, and Slag Disposal Sites

Site Location (Address, description of site location)	Materials at Site (fly ash, bottom ash, foundry sand, and/or slag)

Appendix W
Maps

Appendix W Maps

1. District Map
2. Full-time Urban Drop-Off Location Map

1. District Map | Richland County

2. Full-time Urban Drop-Off Location Map