



# SOLID WASTE AUTHORITY OF CENTRAL OHIO

2018 – 2032

## REVISED SOLID WASTE MANAGEMENT PLAN UPDATE

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Prepared by:



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## CHAPTER 1 INTRODUCTION

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Thank you for taking the time to review the *Solid Waste Management Plan Update* (“Plan”) for the Solid Waste Authority of Central Ohio. This Plan is a regulatory document overseen by the Ohio Environmental Protection Agency which serves as a roadmap for the State to reduce its reliance on landfills and to manage the solid waste generated in the State. The Plan 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. The body of the Plan consists of six chapters which provides an overview of the Solid Waste Authority of Central Ohio as well as a snapshot of technical information such as projections and calculations relating to waste generation and diversion activities. Detailed analyses are provided in a series of appendices. This first chapter provides the reader with an introduction to the solid waste management planning process in the State of Ohio as well as an introduction to the Solid Waste Authority of Central Ohio, including its mission, vision and guiding principles.

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### A. Solid Waste Planning in Ohio

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 These issues, combined with Ohio’s outdated and incomplete solid waste regulations, caused Ohio’s General Assembly to pass House Bill 592 (“HB 592”). HB 592 dramatically revised Ohio’s outdated solid waste regulatory program and established a comprehensive solid waste planning process.

There are three overriding purposes of this planning process which are to:

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

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

#### 1. Structure

As a result of HB 592, each of the 88 counties in Ohio must be a member of a solid waste management district (“SWMD”). A SWMD is formed by county commissioners. A board of county commissioners has the option of forming a single county SWMD or joining with the board(s) of county commissioners from one or more other counties to form a multi-county SWMD. Counties also have the option of forming a regional solid waste management authority (“Authority”),



which has the same roles and responsibilities as a SWMD. Ohio currently has 52 SWMDs. Of these, 37 are single-county SWMDs or Authorities and 15 are multi-county SWMDs. A SWMD reports to the Ohio Environmental Protection Agency (“Ohio EPA”).

In the case of an Authority, such as the Solid Waste Authority of Central Ohio (“SWACO”), it is a Board of Trustees (“Board”) that prepares, adopts, and submits the Plan. Whereas a single county SWMD or multi-county SWMD has two governing bodies, a policy committee and board of directors; an Authority has one governing body, the Board. The Board performs all of the duties of a SWMD’s board of directors and policy committee. In the case of SWACO, the Board works directly with SWACO staff to engage in the planning process and develop the Plan.

**2. *Solid Waste Management Plan***

In its Plan, the Board must, among other things, demonstrate that SWACO will have access to at least 10 years of landfill capacity to manage all of the solid waste within its defined geographical jurisdiction (“District”). The solid waste management plan must also show how SWACO will meet the waste reduction and diversion goals established in Ohio’s state solid waste management plan (“State Plan”) and present a budget for implementing its Plan.

Plans must contain the information and data prescribed in Ohio Revised Code (ORC) 3734.53 and Ohio Administrative Code (OAC) Rule 3745-27-90. Ohio EPA prescribes the format that details the information that is required and the manner in which that information is presented.

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

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

The Board is required to submit periodic updates to its solid waste management plan to Ohio EPA. How often the Board must update its Plan depends upon the number of years in the planning period. For an approved Plan that covers a planning period of between 10 and 14 years, the Board must submit a revised Plan

to Ohio EPA within three years of the date the Plan was approved. For an approved Plan that covers a planning period of 15 or more years, the Board must submit a revised Plan to Ohio EPA within five years of the date the Plan was approved.

**C. SWMD Overview**

On June 6, 1989, the City of Columbus and the Franklin County Board of Commissioners, with the approval of the political subdivisions within Franklin County, created an Authority to govern waste management within its District, which currently includes 41 communities, and to develop and implement a solid waste management plan. The Franklin County Regional Solid Waste Management Authority was established to develop a solid waste management plan to meet the mandates of House Bill 592. Therefore, by resolution, the Board shortly thereafter changed the name of the Franklin County Regional Solid Waste Management Authority to the Solid Waste Authority of Central Ohio (SWACO).

SWACO is governed by a nine-member Board comprised of two persons appointed by the board of county commissioners of each county in the district, including at least the president of said the board of county commissioners or his/her designee, two appointments by the chief executive officer of the municipal corporation having the largest population within the boundaries of each the county in the district (the City of Columbus), including said officer or his designees, a member representing the townships within each the county in the district, the health commissioner of the health district having the largest territorial jurisdiction within each the county in the district (Franklin County Health Department) or his designee, one member representing the public, one member representing the industrial, commercial, or institutional generators of solid wastes within the district, and one member representing the general interests of citizens.

SWACO derives its revenue principally from fees levied on the disposal of solid waste at SWACO facilities and from fees levied on solid waste generated within the District, but disposed of at other public or privately-owned landfills located outside of the District. These fees are established pursuant to authorization within the Ohio Revised Code and agreements established with private landfill owners.

In addition to implementing waste reduction and recycling programs for the District, SWACO operates a sanitary landfill with a maximum daily capacity of 8,000 tons and two solid waste transfer stations with a combined capacity of approximately 3,000 tons per day. SWACO also provides a recycling drop-off program, yard waste composting services, public education programs, and other activities to reduce the generation and disposal of solid waste within the District.

**1. Strategic Planning**

In 2015, the Board took several significant actions, including engaging in a strategic planning process, to set forth and support a new direction for SWACO.

The Board approved a new vision, mission and guiding principles for the organization, which are outlined in Figure 1-1.

**Figure 1-1. SWACO’s Vision, Mission, and Guiding Principles**



The Board also redefined the organization’s role in managing the District’s waste stream, which is described in Figure 1-2.

**Figure 1-2. SWACO’s Role in Managing the Solid Waste Stream**



The establishment of strategic goals is crucial for any organization and SWACO's new goals are listed in Table 1-1. Measuring the success of achieving goals is important as well; overall strategic measures to be used by SWACO are also included in Table 1-1.

**Table 1-1. SWACO's Strategic Goals**

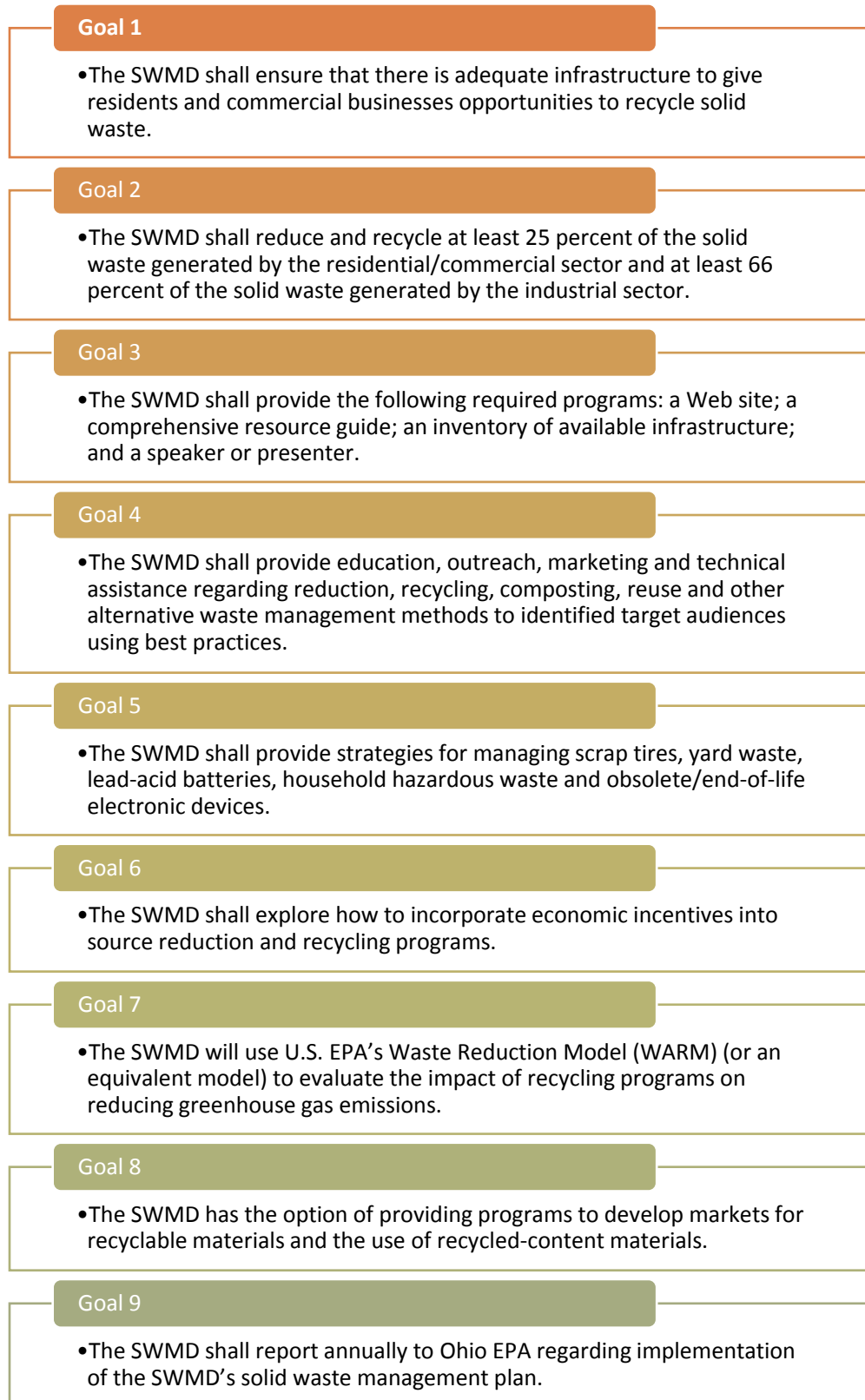
Strategic Areas of Focus	Recycle Materials	Waste Disposal	Rate Structure	Stakeholder Communications
<b>Strategic Goals:</b>	Increase the recovery of materials from the community's solid waste stream	Adopt a long-term plan that extends the life of the landfill to exceed 30 years of capacity	Adopt a rate structure that sustains SWACO's capital and operating funding requirements	Enhance SWACO's transparency and engagement with our stakeholders
<b>Strategic Measures:</b>	At least 5% increase by 12/31/18 compared to 2015 baseline	Landfill long-term plan approved by SWACO Board and Ohio EPA by 12/31/18	Rate structure approved by SWACO Board and its public rate setting process by 12/31/18	Measurable improvement in awareness, attitudes, & perceptions of SWACO's value by 12/31/18

As evidenced by the results of the ongoing strategic planning process, SWACO is constantly evolving as an entity, both in terms of being on the forefront of the latest in environmentally responsible and sustainable disposal practices, as well as being a leader in promoting waste reduction and diversion. SWACO's desire to continuously improve its diversion programs demonstrate a dedication to responsibly managing the waste stream, while also meeting the environmental needs and goals of the community.

**D. Waste Reduction and Recycling Goals**

SWMDs must achieve goals established in the State Plan. The current State Plan, the *2009 Solid Waste Management Plan*, established the following nine goals as outlined in Figure 1-3.

Figure 1-3. SWMD Stated Goals



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

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

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

Please see Chapter 5 and Appendix I for descriptions of the programs SWACO will use to achieve these nine goals.

## CHAPTER 2 DISTRICT PROFILE

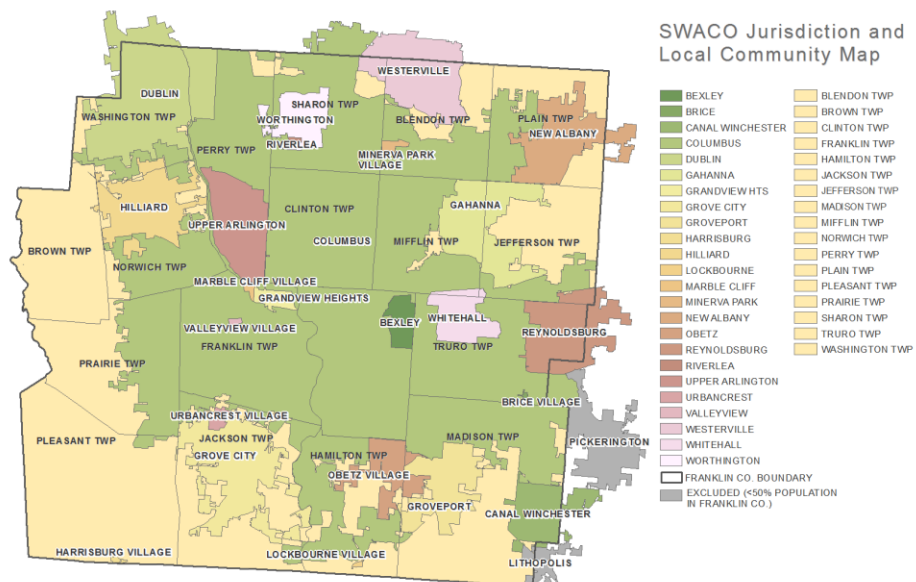
This Chapter provides an overview of the general characteristics of the Solid Waste Authority of Central Ohio including the communities and political subdivisions within its boundaries (“District”), the District’s population in the reference year (2014) and throughout the planning period, the available infrastructure for solid waste management, waste reduction and diversion, and a profile of the commercial businesses, industrial and institutional entities located within the District. Understanding the composition of the District helps in making decisions about the types of programs that will most effectively address the needs of residents, businesses, and other waste generators within the District.

### A. Profile of Political Jurisdictions

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

SWACO’s District is mainly comprised of Franklin County, Ohio. The District, in accordance with Ohio law, includes all of the political subdivisions in Franklin County, as well as parts of cities which extend into adjacent counties where the majority population of the city resides in Franklin County. Specifically, this includes small portions of Union, Delaware, Fairfield, Licking, and Pickaway counties. Likewise, there are small portions of Franklin County in the cities of Lithopolis and Pickerington that are not included in SWACO’s District and are included in the Coshocton-Fairfield-Licking-Perry Joint Solid Waste Management District. Figure 2.1 depicts the communities within SWACO’s District.

Figure 2-1. District Communities



**2. County Overview**

Franklin County is a large urban area, having a population of more than 1,231,000 based upon a 2014 estimate. This places the County as the second largest in Ohio, behind Cuyahoga County in number of residents. Franklin County’s population grew by 1.35 % from 2010 through 2014, which is a much higher growth rate than any of Ohio’s other large urban counties.

**B. Population**

**1. Reference Year Population**

For the 2014 reference year, the population of SWACO’s District was 1,274,732. Table 2-1 presents the adjusted population, the largest city, and the population of the largest city in the SWMD during the 2014 reference year.

**Table 2-1. District Population in 2014**

County		Largest Political Jurisdiction		
Name	Population	Community Name	Population	Percent of Total County Population
Franklin	1,274,732	Columbus	835,897	66%
<b>Total</b>	<b>1,274,732</b>			

**Source(s) of information:** Ohio Development Services Agency, “2014 Population Estimates by County, City, Village, and Township.” May 2015.

**2. Population Distribution**

The City of Columbus contains the largest portion of the District’s population with more than 835,000 residents in 2014. Figure 2-2 illustrates the extent of Columbus City limits in blue, with villages and cities having populations up to 42,000 depicted in brown. More than 92 % of Franklin County residents live in an incorporated village or municipality. The population density within the District was 2,348 persons per square mile in 2014, while the density within the City of Columbus was 3,624 persons per square mile.



**Figure 2-2. Columbus City Limits and Cities/Villages with Populations up to 42,000**

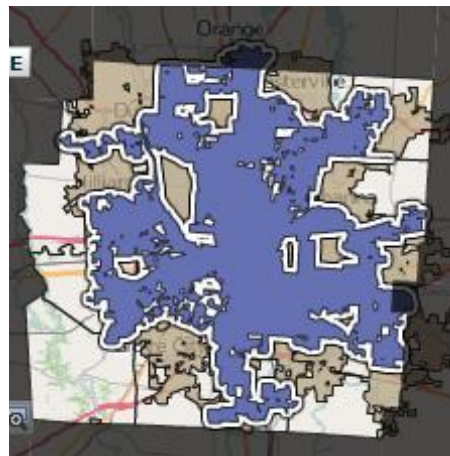


Table 2-2 shows the distribution of District population in terms of the percentage of residents living in cities, villages and townships.

**Table 2-2. SWACO Population Distribution for 2014: Cities, Villages and Townships**

County	Percent of Population in Cities	Percent of Population in Villages	Percent of Population in Unincorporated Townships
Franklin	92%	1%	7%

**Source(s) of information:** Ohio Development Services Agency, “2014 Population Estimates by County, City, Village, and Township.” May 2015.

**3. Population Change**

Table 2-3 shows that the rate of change during the planning period is expected to be less than that experienced from 2000 through 2010.

**Table 2-3. Percentage Change in Population**

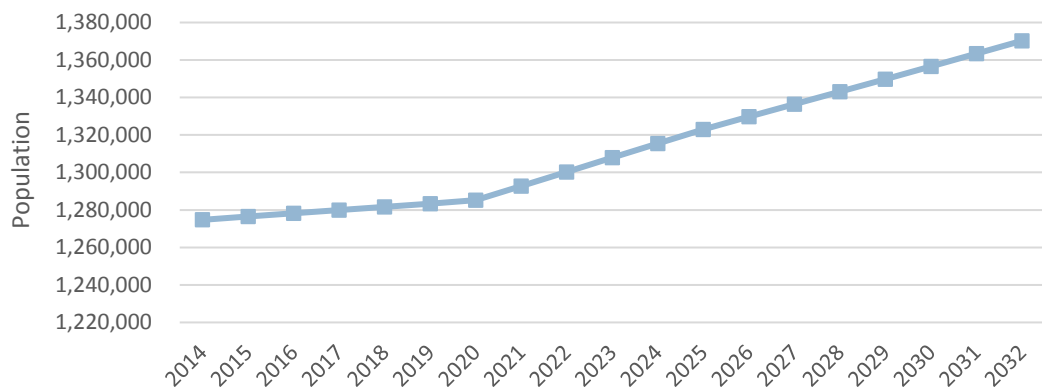
Time Period	Area	Franklin
<b>2000 to 2010</b>	County	8.83%
	Largest City	10.31%
	Unincorporated areas (townships)	0.13%
<b>Planning Period</b>	County	6.91%
	Largest City	5.01%
	Unincorporated areas (townships)	5.01%

**Sources of information:** Ohio Development Services Agency, “Population Projections: County Totals” (2010-2040). Prepared March 2013. Ohio Development Services Agency, “2014 Population Estimates by County, City, Village, and Township.” May 2015.

**Note:** The percentage change for the “County” and “Unincorporated areas” as shown in the table for 2000 to 2010 is based upon Franklin County population instead of District population.

The District is projected to gain approximately 100,000 in population from the reference year (2014) through the end of the planning period in 2032, as illustrated in Figure 2-3.

**Figure 2-3. SWACO Population Projections (2014-2032)**



**4. Implications for Solid Waste Management**

The amount of solid waste generated is usually closely related to population: increases in population can often mean increases in solid waste generated, especially for the residential and commercial sectors. Changes in solid waste generation can affect the appropriateness of existing collection strategies, the size of facilities, and the overall waste management strategies. Increases in population may indicate that education and outreach programs need to be expanded to serve all District residents adequately. In addition, recycling programs may need to be reevaluated to ensure ample opportunities exist for recycling to residents, businesses and government entities.

**C. Profile of Waste Management Infrastructure**

Solid waste generated within the District is currently collected by both private and public haulers, and delivered to a number of different solid waste facilities depending on the type of material collected. In 2014, solid waste was delivered to one of seven transfer stations, or hauled directly to the Franklin County Sanitary Landfill.<sup>1</sup> Recyclables were

<sup>1</sup> Relatively small amounts of waste were also sent directly to landfills located outside of Franklin County.

collected and hauled to processors for sorting and prepared to be shipped to end markets which use the materials to manufacture new product. Yard waste was collected and processed by a large number of private companies and political subdivisions to produce compost which could then be used as a beneficial soil amendment. Food waste materials were managed through composting and anaerobic digestion, the latter performed by the Quasar Energy Group at their facility in located in the City of Columbus.

**D. Profile of Commercial and Institutional Sector**

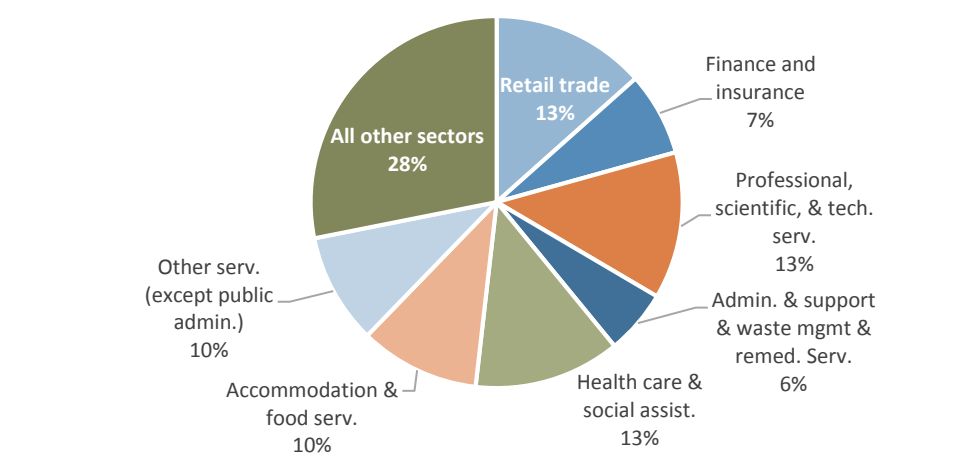
The District has a large number of institutions and public sector employees since it includes the seat of state government. These state government departments and offices also mean that Franklin County and Central Ohio contain a large number of businesses which provide professional services for scientific and technical areas of expertise. Table 2-4 presents the largest Franklin County employers in the commercial and institutional sectors, which include Ohio State University, several health care systems, and finance and insurance businesses.

**Table 2-4. Businesses or Establishments with More than 5000 Employees**

Business or Department	Type of Business or Services
Grant Medical Center	Health Services
Mt. Carmel West Hospital	Hospitals
Riverside Methodist Hospital	Hospitals
Battelle	Research Service
Nationwide Children's Hospital	Hospitals
Nationwide Mutual Insurance Co.	Insurance
Ohio State University Outpatient Rehab Center	Emergency Medical & Surgical Service
Ohio Health	Hospitals
Ohio State University	Hospitals
Ohio State University	Schools - Universities & Colleges
Sylvan Learning of Columbus	Tutoring

Not including public administration, the chart below shows that the largest categories of establishments in Franklin County were “Professional, scientific, & technical services” and “Health care & social assistance” during 2013, as detailed in Figure 2-4.

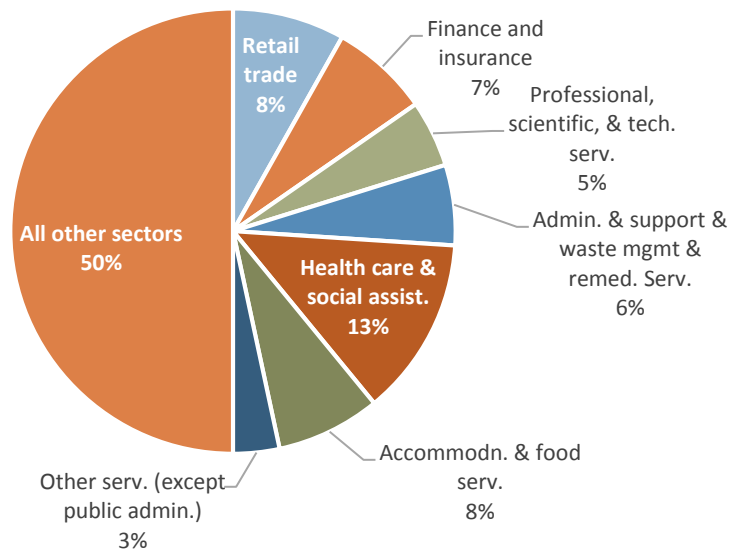
**Figure 2-4. Number of Establishments by Sector: 2013**



**Source(s) of information:** U.S. Census Bureau, 2013 County Business Patterns.

The percentage of employees shown by type of business or service is depicted in Figure 2-5. The health care and social assistance sector employs the greatest percentage of employees of any single category.

**Figure 2-5. Percentage of Employees by Type Business or Service**



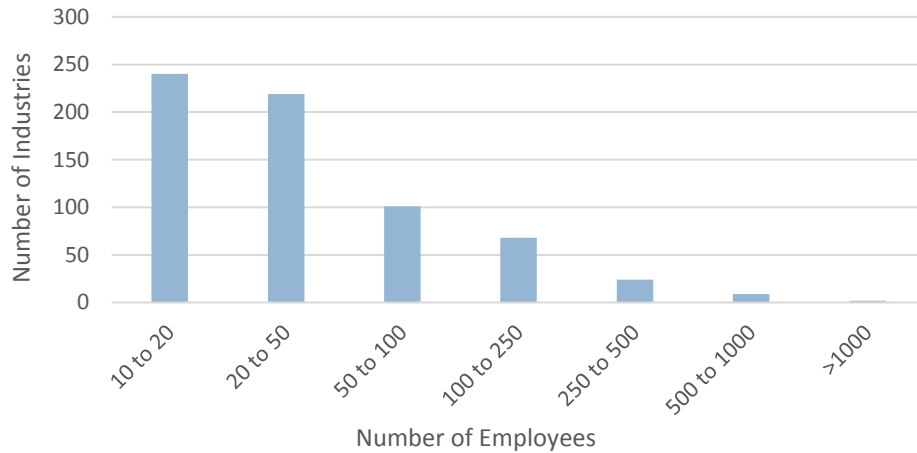
**Note:** This chart does not include those employed in public administration.

**E. Profile of Industrial Sector**

Although the District is home to Ohio’s governmental center as well as many other institutions, there is also a large industrial presence within the District. Figure 2-6 shows

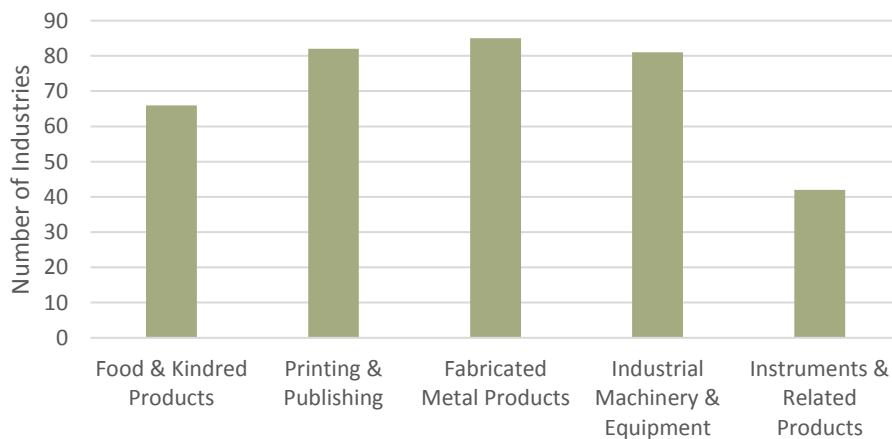
the number of industrial companies within seven different size categories by number of employees.<sup>2</sup> Most industries have fewer than 50 employees, and only eleven companies have more than 500 employees.

**Figure 2-6. SWACO Industries by Number of Employees**



The types of industrial manufacturers within the District having the greatest number of companies are shown in Figure 2-7. The large number of printing and publishing companies is likely related to Franklin County being a government center with numerous institutions.

**Figure 2-7. Industries by Type of Manufacturing**



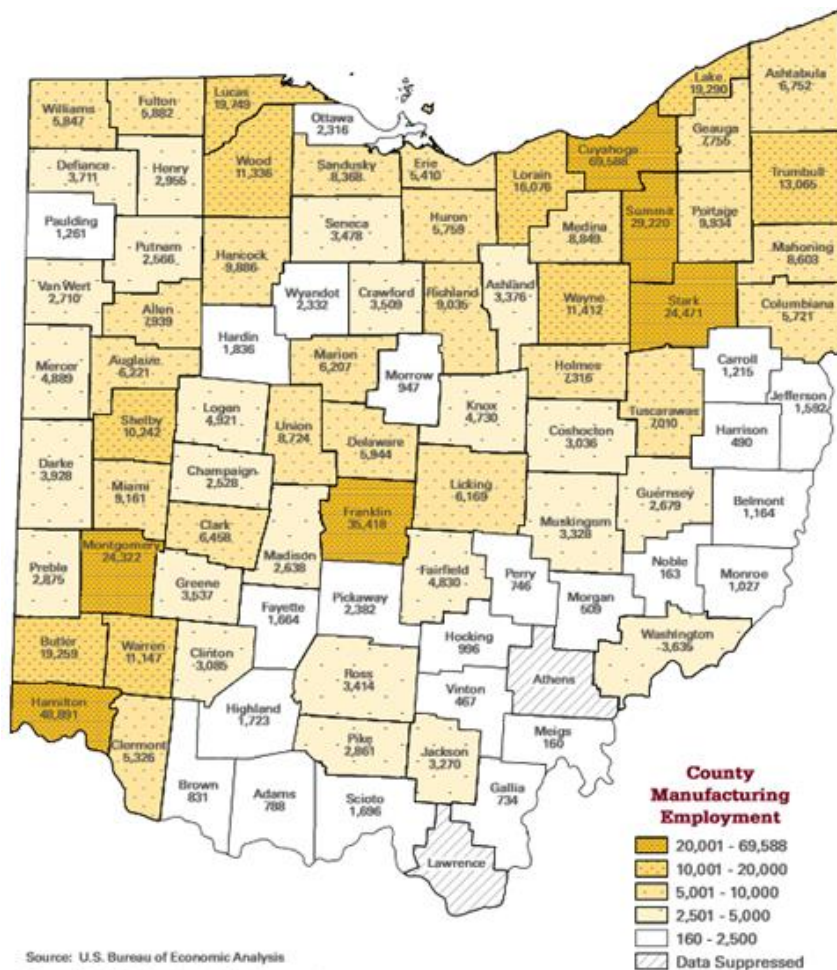
Nearly one-half of the manufacturing categories include at least one of the largest industrial companies doing business in the District. Companies with more than 500 employees are represented in the following manufacturing categories:

<sup>2</sup> Only companies with 10 or more employees have been included in this analysis.

- Food & Kindred Products
- Printing & Publishing
- Chemical & Allied Products
- Rubber & Miscellaneous Plastics Products
- Stone, Clay, & Glass Products
- Primary Metal Industries
- Transportation Equipment

Figure 2-8 shows manufacturing employment for Franklin County compared to other counties in the state for 2010. Only Cuyahoga and Hamilton counties had higher employment estimates.

**Figure 2-8. Manufacturing Employment by County**



**F. Other Characteristics**

Two of the unique characteristics of the District involve the presence of The Ohio State University (OSU) and the seat of state government for Ohio. The main campus for OSU is located within the City of Columbus and current enrollment is 58,000 students. The students comprise a transitory population that is not included in the count of Franklin County residents for the census. The waste generated by the students is, however, included in the amount of waste generated by the residential/commercial sector and in the per capita generation rate for that sector.

Numerous sporting events, concerts, graduation ceremonies, and other events bring thousands of additional people to the campus. Student life and the many activities associated with the university generate substantial amounts of solid waste, and present both challenges and opportunities with respect to solid waste management.

OSU's Energy Services and Sustainability (ESS) program includes comingled recycling, organics recycling, construction and demolition debris recycling, and sustainable purchasing practices. In addition to the zero waste program, which is in place at Ohio Stadium for football games and other events, the ESS program provides assistance to any organization or group which chooses to hold its own "zero waste" event.

## CHAPTER 3 WASTE GENERATION

This Chapter provides a summary of the amount of waste that was generated in SWACO’s District in the reference year (2014), and the estimated tonnage generated during the planning period.

### A. Solid Waste Generated in Reference Year

Table 3-1 shows the amounts of residential/commercial (R/C) and industrial waste generated within the District during 2014 (the reference year). The amount generated is defined by the tons disposed in landfills plus the tons recycled, composted, and otherwise diverted from landfill disposal.

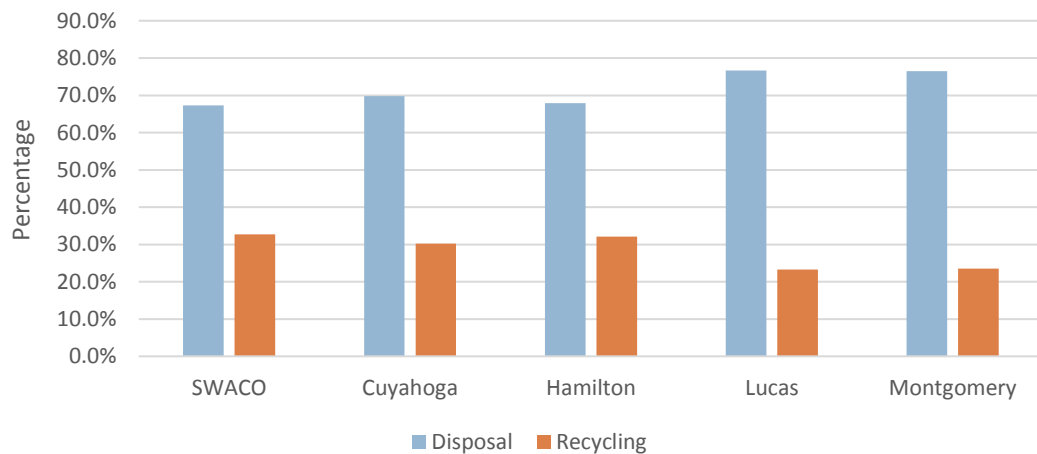
**Table 3-1. Solid Waste Generated in the Reference Year**

Type of Waste	Tons Generated
Residential/ Commercial	1,452,016
Industrial	223,513
<b>Total</b>	<b>1,675,529</b>

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

Disposal comprises a much larger percentage of total R/C generation than recycling for SWACO. This relationship is also true for some of the other urban solid waste districts in Ohio, which is illustrated in Figure 3-1. For these solid waste districts, disposal ranges from 67 to 77% of total generation while recycling is estimated at 23 to 33%.

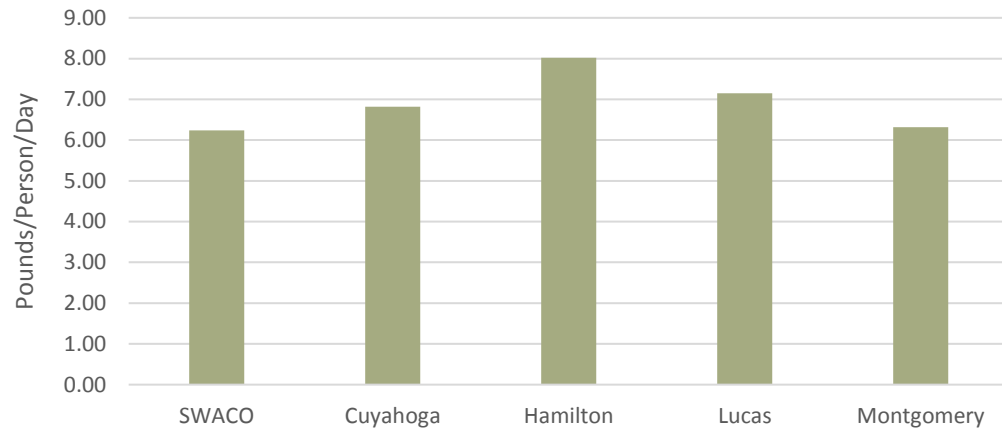
**Figure 3-1. R/C Disposal and Recycling as Percentage of Generation**





In terms of the R/C generation rate during the reference year 2014, SWACO residents, commercial businesses, and institutions produced daily amounts of waste that was at the low end of the range compared to other Ohio urban SWMDs. Figure 3-2 shows that the R/C generation rate for SWACO was approximately 6.3 pounds per person per day (PPD) in 2014.

**Figure 3-2. R/C Generation Rates: 2014**



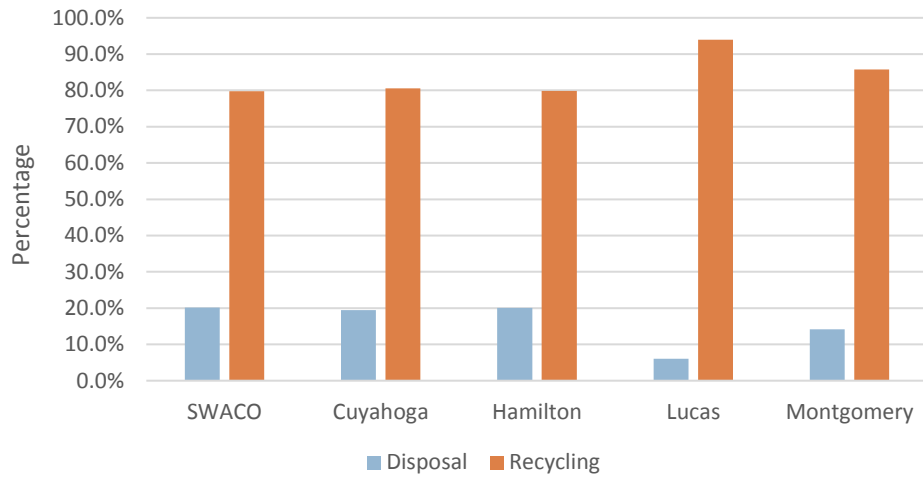
The statewide residential/commercial generation for 2014 was approximately 6.25 PPD, while the average generation rate for individual solid waste management districts/authorities in Ohio was 5.85 PPD. The national R/C generation rate according to the most recent publication by U.S. EPA in 2012 is slightly less than 4.5 PPD.

As discussed in Chapter 2, the District is home to several large institutions which potentially contribute substantial amounts of waste from the R/C sector. The waste generated by OSU, which is one of these large institutions, also has the potential to fluctuate quite significantly throughout the year due to changes in the student population as the school year begins and ends.

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

In contrast to the residential/commercial sector, waste reduction and recycling contribute the larger share of total generation in the industrial sector. The relative percentages in other urban SWMDs in Ohio for disposal versus recycling are very similar to SWACO's percentages, as shown in Figure 3-3.

**Figure 3-3. Industrial Disposal and Recycling as Percentage of Generation**

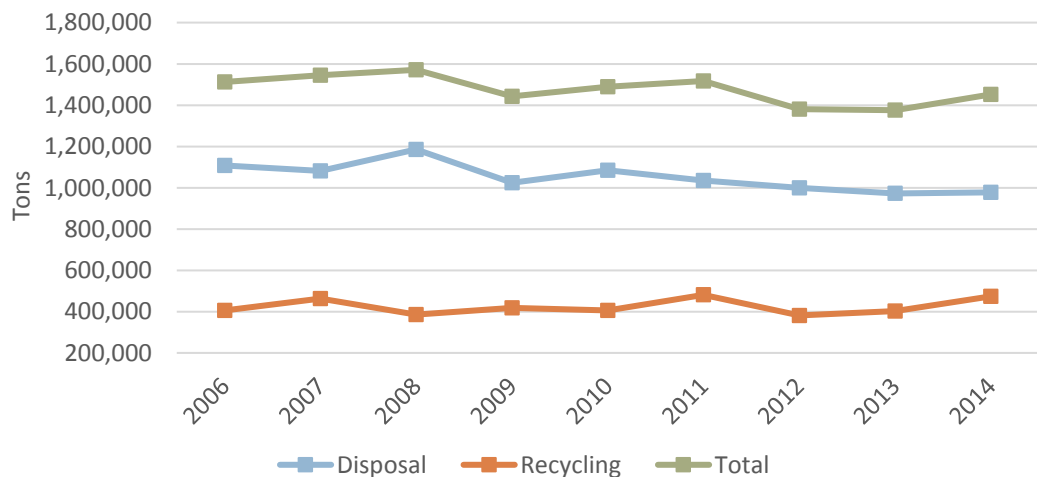


**B. Historical Waste Generated**

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

Although it has fluctuated over the past nine years, the generation of R/C waste in the District has generally decreased since 2006. Disposal has decreased by nearly 130,000 tons while recycling has increased almost 70,000 tons during this time period, as presented in Figure 3-4. These trends are consistent with other urban SWMDs in Ohio.

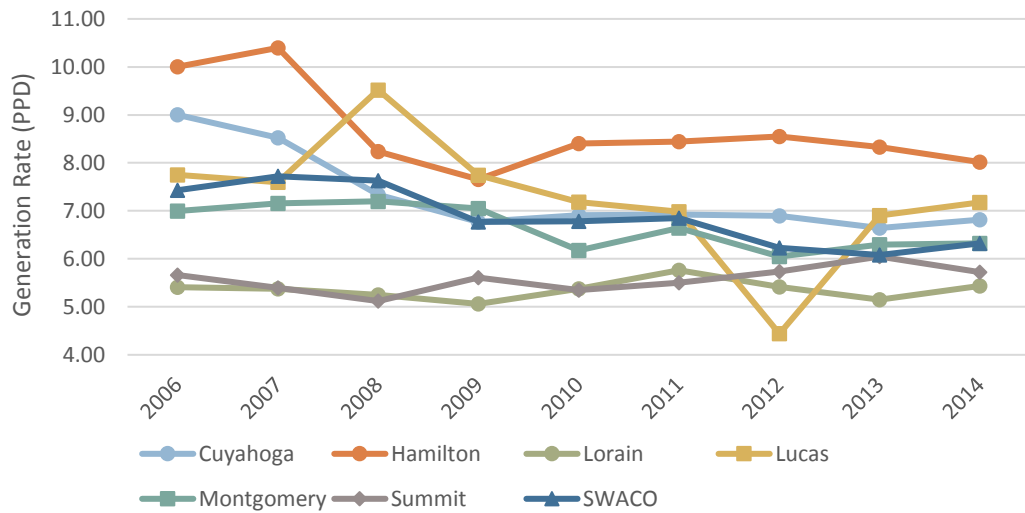
**Figure 3-4. SWACO Historical R/C Generation: 2006 – 2014**



In general, the R/C waste generation rates for urban SWMDs in Ohio have also declined during the last nine to ten years. While each of the SWMDs depicted in

Figure 3-5 has experienced some fluctuation in the amount of waste produced, the overall trends exhibit decreasing generation rates.

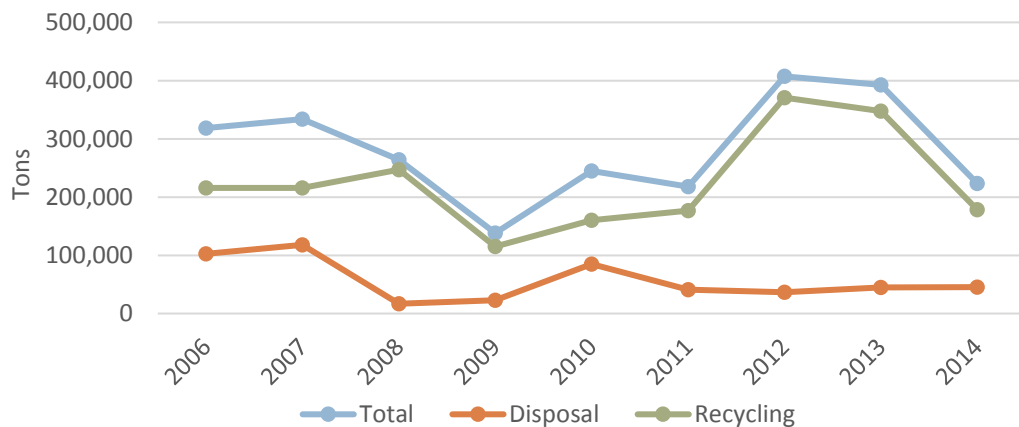
**Figure 3-5. R/C Generation Rates: 2006 – 2014**



**2. Historical Industrial Waste Generated**

The generation of industrial waste during the past nine years has fluctuated to a much greater extent than the R/C generation. As illustrated in Figure 3-6, changes the largest fluctuation in industrial generation has been increases or decreases in the amount of materials recycled rather than disposed. The historical generation of industrial waste also seems to suggest that this sector is more influenced than the R/C sector by the state of the economy. The chart below shows a substantial decrease in industrial generation from 2007 through 2009, the time of the recent economic recession.

**Figure 3-6. SWACO Historical Industrial Generation: 2006 – 2014**



**C. Waste Generation Projections**

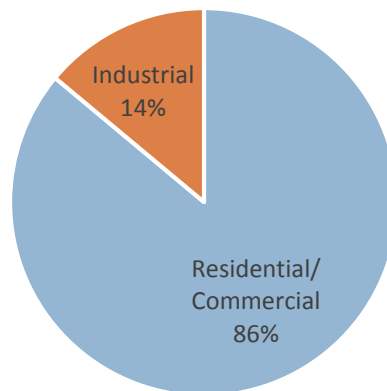
Table 3-2 demonstrates that waste generation within the District is expected to change very little during the first six years of the planning period. From 2018 to 2023, total waste generation is projected to increase by less than 1 %.

**Table 3-2. Waste Generation Projections**

Year	Residential Commercial Waste (Tons)	Industrial Waste (Tons)	Total (Tons)
2018	1,665,882	269,796	1,935,678
2019	1,670,021	269,690	1,939,711
2020	1,674,437	269,585	1,944,022
2021	1,683,306	269,479	1,952,785
2022	1,682,128	269,374	1,951,502
2023	1,683,518	269,374	1,952,892

Figure 3-7 shows the percentage of solid waste generated in the residential/commercial versus industrial sectors for the first year of the planning period (2018). Projections for both of these sectors have been developed by first analyzing historical disposal data, determining trends for the historical data, and then estimating future disposal amounts by incorporating any known changes which may affect the tons landfilled. The same process has been used to establish projections for waste reduction and diversion, the sum of the disposal and waste reduction and recycling projections comprise the total waste generation projections.

**Figure 3-7. R/C vs. Industrial Waste Generation: 2018**



**1. Residential/Commercial Waste Projections**

As stated above, projections for the R/C sector were developed for disposal and recycling in order to determine total generation. Figure 3-4 shows that disposal

amounts for the R/C sector have been decreasing over the past ten years, and SWACO believes that this trend will continue through at least the first six years of the planning period (2018-2023) based upon the experience within SWACO, other SWMDs, and in the United States as a whole. SWACO’s mission is “to improve the community’s solid waste stream through effective reduction, recycling, and disposal”, and its stated goal to divert greater quantities of materials further supports the projection that disposal tonnages will continue to decrease during the next few years. (See Figure 3-8.)

Data for year 2015 shows that SWACO’s disposal rate increased compared to 2014. The Lucas and Montgomery SWMDs also experienced an increase in the disposal rate during 2015. (See table below.) However, the disposal rate for the Hamilton SWMD decreased from 2014 to 2015, and Cuyahoga’s and Summit’s disposal rates were virtually unchanged.

Year	Solid Waste Management District Disposal Rate (in ppd)					
	SWACO	Cuyahoga	Hamilton	Lucas	Montgomery	Summit
2014	4.25	4.76	5.44	4.88	4.83	4.12
2015	4.36	4.77	5.35	5.16	5.12	4.10

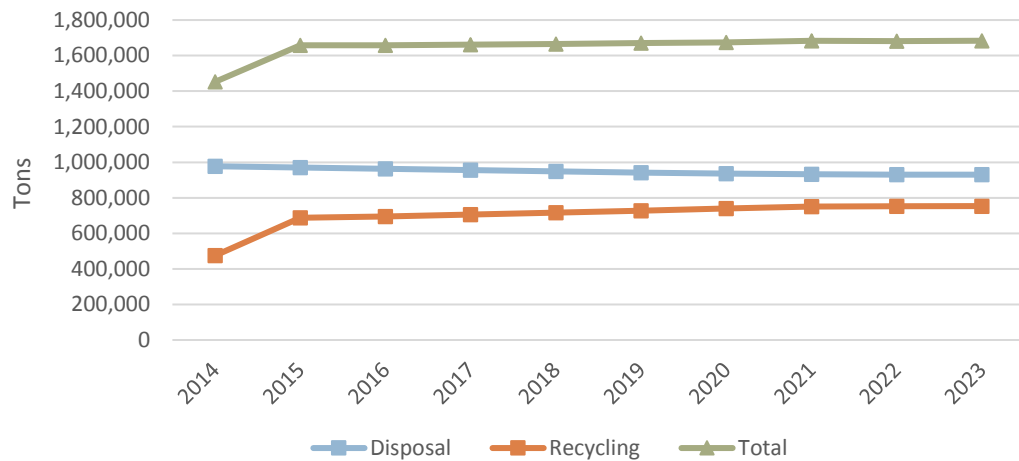
Given the mixed results in the 2014 vs. 2015 disposal rates for these SWMDs, SWACO believes that its 2015 data should not be considered a trend with regard to the projections. Every year since 2006 (with the exception of 2010), SWACO’s R/C disposal rate has decreased from the previous year, until 2015. As a result, SWACO believes that decreasing disposal projections through the first six years of the planning period are appropriate, and represent a conservative estimate of future disposal tonnage.

Recycling projections were developed using the historical trend, but future SWACO programming was also a crucial component in determining the total R/C recycling rates expected in future years. For example, SWACO intends to encourage improvements to community curbside recycling collection programs through changes such as the use of rolling carts and economic incentives. These changes are expected to result in an increase of 2% per year collected from curbside collection through the first six years of the planning period. Another example is SWACO’s continued support of the residential yard waste composting program, which is expected to result in substantial amounts of yard waste recovered during the planning period. (See Chapter 5 for a much more complete discussion of SWACO’s waste reduction and recycling programs, and the expectations for these programs during the planning period.)

Estimated recycling totals for the R/C sector increased substantially from 2014 to 2015, primarily due to more extensive data collection efforts by SWACO.

Generation rates are projected to be constant after year 2023, due in part to the increasing uncertainty of future projections.

**Figure 3-8. R/C Waste Generation: 2014 – 2023**



**2. Industrial Waste Projections**

Waste generation in the industrial sector is normally influenced to a lesser degree by SWMD programming than generation totals from the R/C sector. As depicted in Figure 3-6 above, industrial generation tonnages within the District have shown a great degree of variability over time, especially with respect to waste reduction, reuse and recycling, even though SWACO programs to assist and encourage these activities in the industrial sector have remained relatively consistent during the same period.

Generation tonnages dipped to their lowest levels in 2009 (probably as a result of the economic recession), followed by the highest generation in 2012, and then another very substantial decrease two years later. In order to take a somewhat conservative approach, and to address the historical variability and uncertainty associated with determining industrial generation into the future, the following assumptions have been used to project industrial generation for planning purposes:

- Recycling: It is assumed that the tonnage reported for 2015 (228,341 tons) will continue throughout the planning period.
- Disposal: It is assumed that the amount of industrial sector disposal will decrease slightly for the first five years of the planning period, then remain constant through year 2032.

**3. Excluded Waste**

Projections for excluded waste (i.e., materials such as construction and demolition debris) have not been developed since excluded waste comprised less than 10 % of the total waste generated in the reference year (2014).<sup>1</sup>

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<sup>1</sup> Ohio EPA's Format v4.0 instructs solid waste management districts to delete excluded waste if it comprises less than 10 % of the total waste disposed.

## CHAPTER 4 WASTE MANAGEMENT

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The following Chapter describes the Board’s strategy for managing the waste that will be generated within the District during the planning period.

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As the region’s solid waste planner, SWACO must have adequate design for facilities that manage the waste the District will generate. This may include landfills, transfer facilities, waste-to-energy facilities, compost facilities, and facilities to process recyclable materials. To ensure SWACO has access to facilities to manage materials, the Plan identifies the facilities the Board expects will take the District’s trash, compost, and recyclables. Those facilities must be sufficient to manage all of the District’s solid waste stream. SWACO does not have to own or operate the facilities identified in the Plan. Further, identified facilities can be any combination of facilities located within and outside of the District (including those located in other states).

Although the Board needs to ensure that SWACO will have access to all necessary facilities, Ohio law emphasizes access to disposal capacity. In the Plan, the Board must demonstrate that SWACO will have access to enough landfill capacity for the District. If there isn’t adequate landfill capacity, the Board must develop a strategy for obtaining adequate capacity.

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

Finally, SWACO has the ability to control which landfill and transfer facilities can, and by extension cannot, accept waste that was generated within the District. SWACO accomplishes this by designating those solid waste facilities to which materials must be taken for disposal; this concept is often referred to “flow control”. SWACO’s authority to designate facilities is explained in more detail later in this Chapter.

### A. Waste Management Overview

The solid waste generated within SWACO’s District is managed through five major waste management methods: reuse, recycling, composting (which includes anaerobic digestion), processing at transfer facilities (the waste delivered to transfer facilities is ultimately sent to landfills for disposal) and landfilling. These methods of waste management are anticipated to continue in order to handle the District’s solid wastes throughout the planning period. Table 4-1 shows the projections for each management method for the first six years of the planning period, and indicates that disposal (“Transfer” plus “Landfill”) will continue to comprise the largest category.



**Table 4-1. Methods for Managing Waste (Tons)**

Year	Generated <sup>1</sup>	Recycled <sup>2</sup>	Composted	Transferred <sup>3</sup>	Landfilled <sup>3</sup>
2018	1,935,678	749,908	195,088	458,710	531,972
2019	1,939,711	759,601	196,449	458,710	524,951
2020	1,944,022	769,508	197,818	458,710	517,986
2021	1,952,785	779,633	199,197	458,710	515,245
2022	1,951,502	779,718	200,586	458,710	512,488
2023	1,952,892	779,708	201,986	458,710	512,488

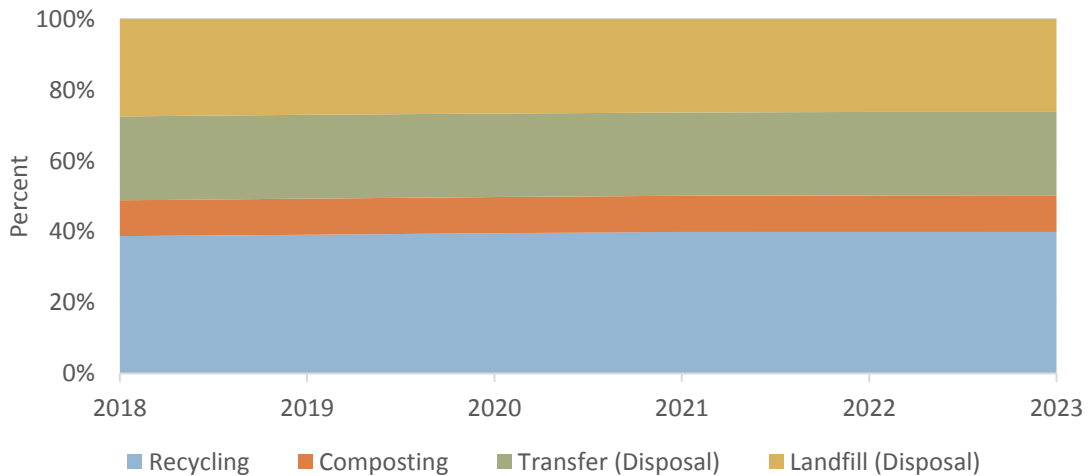
<sup>1</sup>The "Generated " totals equal the sum of the other four columns.

<sup>2</sup>"Recycled" equals the total amount recycled minus the tons of materials composted.

<sup>3</sup>The sum of "Transferred" and "Landfilled" equals the total amount disposed.

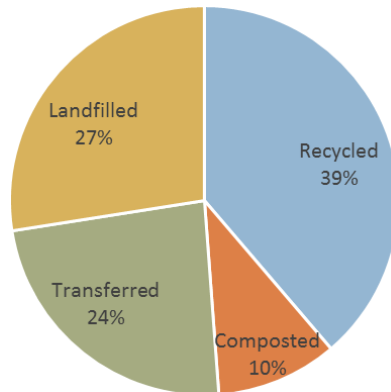
The proportion of each method used to manage the District’s materials stream during the first six years of the planning period is not expected to change significantly. Figure 4-1 shows that composting and recycling as a percentage of total generation is projected to increase slightly, while the landfilling percentage will decrease slightly and the percentage of waste delivered to transfer stations will remain constant.

**Figure 4-1. Percent of Generation Managed by Each Method**



The data presented in Figure 4-2 is shown below in a pie chart for year 2018. The total amount disposed (landfilled plus transferred) is expected to comprise 53% of total generation in year 2018.

Figure 4-2. Waste Management Methods: 2018



**B. Profile of Solid Waste Infrastructure and Solid Waste Facilities Used in the Reference Year**

**1. Landfill Facilities**

All of the landfills which received waste directly (without first being processed at a transfer station) from the District during the reference year of 2014 are shown in Table 4-2 below. This table illustrates that nearly all of the direct-hauled waste was disposed at the Franklin County Sanitary Landfill (98%). This facility is publicly-available, and is owned and operated by SWACO.

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

Facility Name	Location		Tons Accepted from SWMD	Percent of all SWMD Waste Disposed	Remaining Capacity (years)
	County	State			
<b><i>In-District</i></b>					
Franklin County Sanitary Landfill	Franklin	Ohio	541,254	97.6%	24.2
<b><i>Out-of-District</i></b>					
Pine Grove Regional Facility	Fairfield	Ohio	11,356	2.0%	72.6
Suburban Landfill, Inc.	Perry	Ohio	467	0.1%	34.3
Athens Hocking C&DD/Reclamation Center Landfill	Athens	Ohio	188	0.0%	57.2
Stony Hollow Landfill, Inc.	Montgomery	Ohio	61	0.0%	15.9
Hancock County Sanitary Landfill	Hancock	Ohio	18.3	0.0%	33.4
American Landfill, Inc.	Stark	Ohio	12	0.0%	74.9
Celina Sanitary Landfill	Mercer	Ohio	8	0.0%	9.5
Kimble Sanitary Landfill	Tuscarawas	Ohio	1	0.0%	35.9
Evergreen Recycling & Disposal	Wood	Ohio	0	0.0%	43.4

Facility Name	Location		Tons Accepted from SWMD	Percent of all SWMD Waste Disposed	Remaining Capacity (years)
	County	State			
<b>Out-of-State</b>					
Unknown	N/A	Indiana	1,054	0.2%	
<b>Totals</b>			554,419.51	100.0%	

## 2. Transfer Facilities

The transfer facilities receiving waste from the District during the reference year (2014) are listed in Table 4-3. Facilities located within Franklin County processed more than 99% of the transferred waste, while those facilities owned and operated by SWACO (the Morse Road Eco-Station and the Jackson Pike Transfer Facility) processed 90% of that total. Combining both the tonnage that was direct-hauled to landfills and the amount that was processed through transfer stations shows that SWACO owned and operated facilities received 94% of the District's waste for disposal in 2014.

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

Facility Name	Location		Tons Accepted from SWMD	Percent of all SWMD Waste Transferred	Landfill Where Waste was Disposed
	County	State			
<b>In-District</b>					
SWACO Jackson Pike Transfer Facility	Franklin	Ohio	241,984	48%	Franklin County Sanitary LF
Morse Road Transfer Station	Franklin	Ohio	212,367	42%	Franklin County Sanitary LF
Reynolds Avenue Transfer Station	Franklin	Ohio	34,306	7%	Franklin County Sanitary LF, Pine Grove LF
Waste Management of Ohio Transfer & Recycling	Franklin	Ohio	10,056	2%	Franklin County Sanitary LF, Suburban LF
Local Waste Services Transfer	Franklin	Ohio	4,280	1%	Tunnel Hill Reclamation LF
Columbus Transfer and Recycling Facility	Franklin	Ohio	9	0%	Franklin County Sanitary LF, Beech Hollow LF, Noble Road LF
<b>Out-of-District</b>					
Delaware County Transfer Station	Delaware	Ohio	208	0%	Crawford County LF, Frank Road C&DD Facility
<b>Out-of-State</b>					
None	N/A	N/A	N/A	N/A	
<b>Total</b>			<b>503,210</b>	<b>100%</b>	

### 3. Composting Facilities

Table 4-4 shows the composting facilities which received yard waste and food waste from the District during the reference year (2014). Seven facilities located within the District processed more than 97% of the total materials composted.

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

Facility Name	Location	Tons Composted	Percent of all Material Composted
Ohio Mulch Supply Inc.	2140 Advance Ave. Columbus, OH	130,568	56.1%
Kurtz Bros Inc	6055 Westerville Rd. Westerville, OH	40,025	17.2%
Kurtz Brothers Groveport Composting Fac.	2850 Rohr Rd. Groveport, OH	34,182	14.7%
Kurtz Bros Inc	6279 Houchard Rd. Dublin, OH	21,135	9.1%
Kurtz Brothers- Brookside	2409 Johnstown-Alexandria Rd. Alexandria, OH	6,068	2.6%
McCullough's Landscaping	14401 Jug Street Rd. NW Johnstown, OH	350	0.2%
Park Enterprise Construction Co.	560 Barks Rd. W Marion, OH	213	0.1%
Price Farm Organics	4838 Warrensburg Rd. Delaware, OH	202	0.1%
Wood Landscape Services	4756 Scioto-Darby Rd. Hilliard, OH	54	0.0%
Garick Corp. Paygro Division	11000 Hungtington Rd. S. Charleston, OH	15	0.0%
Southeastern Correctional Institute	5900 B.I.S. Rd. Lancaster, OH	3	0.0%
Ohio Mulch Supply	883 US Hwy 42N Delaware, OH	0	0.0%
Kurtz Bros Central Ohio LLC	2850 Rohr Rd. Groveport, OH	0	0.0%
Kohler Farms	Harlem Rd. Westerville, OH	0	0.0%
#1 Landscape	3775 Ridge Rd. Medina, OH	0	0.0%
Hauler/Kroger/ Walmart	N/A	0	0.0%
<b>Total</b>		<b>232,814</b>	

#### 4. Processing Facilities

Table 4-5 shows all the companies and facilities which reported processing recyclables in the District during the reference year. This list was compiled from SWACO's survey efforts, as well as, data published by Ohio EPA. Facilities whose primary focus and/or mission is processing recyclables are indicated in the Table in **bold** typeface. Rumpke Waste Recycling, in Franklin County, received and processed the highest tonnage of mixed recyclables from SWACO in 2014, while Waste Management received and processed the second highest total amount.

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

Name of Facility	Location		Type of Facility	Weight (tons)*
	County	State		
<b><i>In-District</i></b>				
<b>AbiBow Recycling LLC</b>				
<b>Adept Recycling</b>	Franklin	OH	MRF	
Big Lots	Franklin	OH		
<b>Capitol Waste</b>	Franklin	OH		
Community Computer Alliance	Franklin	OH		
<b>CycleMET, Inc.</b>	Franklin	OH		
Dollar General	Franklin	OH		
<b>e-Cycle</b>	Franklin	OH		
Fireproof Records Center	Franklin	OH		
Giant Eagle - Multiple Franklin County locations	Franklin	OH		
Habitat for Humanity Re-Store (Westerville Rd.)	Franklin	OH		
Habitat for Humanity Re-Store (Wilson Rd.)	Franklin	OH		
Home Depot	Franklin	OH		
<b>Hope Timber Pallet &amp; Recycling</b>	Franklin	OH		
<b>I.H. Schlezinger</b>	Franklin	OH	Scrap Yard	
<b>I.H. Schlezinger, Inc.</b>	Franklin	OH	Scrap Yard	
JC Penney Distribution Center	Franklin	OH		
Jo-Ann Fabrics Corporate Office & HQ	Franklin	OH		
Kohl's	Franklin	OH		
Kroger's	Franklin	OH		
Lowe's	Franklin	OH		

Name of Facility	Location		Type of Facility	Weight (tons)*
	County	State		
Meijers	Franklin	OH		
Metropolitan Community Services-T.O.U.C.H.	Franklin	OH		
Michael's	Franklin	OH		
<b>Planet Aid, Inc.</b>	Franklin	OH		
<b>PSC - Joyce</b>	Franklin	OH	Scrap Yard	
<b>PSC Metals</b>	Franklin	OH	Scrap Yard	
<b>RecycleForce Columbus, Inc.</b>	Franklin	OH		
<b>Recycling Exchange North, Inc.</b>	Franklin	OH		
<b>Rock Tenn</b>	Franklin	OH	Single Material Processor	
Royal Document Destruction – Columbus/Central Ohio	Franklin	OH		
<b>Royal Paper Stock</b>	Franklin	OH	Single Material Processor	
<b>Rumpke Waste Recycling</b>	Franklin	OH	MRF	
<b>Shred-It</b>	Franklin	OH		
Target	Franklin	OH		
Walmart	Franklin	OH		
<b>WM Recycling: Columbus</b>	Franklin	OH	MRF, Licensed TS	
<b><i>Out-of-District</i></b>				
ALDI's		OH		
<b>Rumpke Center City Recycling - Hamilton County</b>		OH	MRF	
<b>Rumpke Recycling - Dayton</b>		OH	MRF	
<b>Waste Management - Akron</b>				
<b><i>Out-of-State</i></b>				
None				
<b>Total</b>				<b>354,747</b>

## 5. ***Other Waste Management***

A small amount of waste was transported to a treatment facility in Indiana during 2014 (less than 1,000 tons). In addition, a small amount of food waste was processed at the Quasar Energy Group anaerobic digester facility located in Franklin County.

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

In general, SWACO anticipates that facilities which were used to manage District-generated waste during the reference year will continue to be available throughout the planning period, and in aggregate, will continue to provide adequate capacity for SWACO's needs.

**Landfill Capacity**

In 2014, the Franklin County Sanitary Landfill was estimated to have more than 22 years of remaining capacity and is expected to continue receiving nearly all of the District's waste sent for disposal.

**Transfer Facilities**

The two SWACO owned and operated transfer stations are expected to continue operating and receiving the majority of transferred waste. The Morse Road Eco-Station has recently undergone a major upgrade to improve its efficiency and capabilities.

**Composting Capacity**

The amount of materials composted throughout the planning period is not expected to change significantly. As the number of operating composting facilities processing the majority of yard waste from the District is not expected to change, composting facility capacity should be adequate throughout the planning period.

**Recycling Capacity**

Processing capacity for recyclables is also expected to be more than sufficient for the District throughout the planning period.

**D. Siting Strategy**

Ohio EPA requires the inclusion of a siting strategy in a Plan if the SWMD/Authority determines a solid waste facility is to be constructed. The siting strategy criteria also applies to any solid waste facility, public or private, that is to process solid waste materials in the district for recycling or disposal. This requirement follows from Ohio law [Ohio Revised Code, Section 3734.53(A)(8)]. SWACO has developed a siting strategy and requires the submittal of plans and specifications for the construction of any new solid waste facility or the modification of an existing solid waste facility. SWACO's requirement for the submittal of plans and specifications has also been formally adopted as a District Rule. (See Appendix Q for a complete listing of existing District Rules.)

## E. Designation

Ohio law gives each SWMD the ability to control where waste generated from within the SWMD can be taken (i.e., flow control). In Ohio, SWMDs establish flow control by designating facilities. SWMDs can designate any type of solid waste facility, transfer, and landfill facilities.<sup>1</sup>

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

SWACO's existing Plan authorizes the Board to designate solid waste facilities. The Board exercised this authority in order to ensure that efficient solid waste management services continue to be provided within the District to all residents, businesses, and institutions in a cost-effective manner, and in order to maintain the safe and sanitary management of all solid waste in the District to protect the health, safety and welfare of its citizens and the environment. Authorization to designate solid waste facilities will continue with the approval of this Plan Update:

*"The Board of Trustees of the Solid Waste Authority of Central Ohio (SWACO) is hereby authorized to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code after this plan has been approved by the director of the Ohio Environmental Protection Agency."*

The following facilities have been designated by SWACO through the applicable process: the Franklin County Sanitary Landfill, the Morse Road Eco-Station, and the Jackson Pike Transfer Station. The designation requires any individual, public or private corporation, partnership, political subdivision, agency or entity to deliver solid waste generated within the District to either of the designated transfer facilities or the Franklin County Sanitary Landfill.

Anyone can apply for a waiver from these designations through a process developed by SWACO. The waiver process and criteria have been adopted in Rule 2-2017, which requires the following:

**Rule 2-2017: Waiver from Designation.** Any Person or Applicant may request a waiver from the Board authorizing the delivery of all or any portion of the Solid Waste generated within the District to a Solid Waste Facility other than a Designated Solid Waste Facility. The Board may grant a waiver from the obligation to deliver Solid Waste generated within the District to a designated Solid Waste Facility if the Board finds that issuance

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<sup>1</sup> Source-separated recyclables delivered to a "legitimate recycling facility" as defined in Ohio law are not subject to the requirements of designation. (A legitimate recycling facility is loosely defined as a facility which consistently recycles a majority of the materials processed on-site. See Appendix V for a detailed definition.)



of a waiver for the requested Solid Waste materials : (i) is not inconsistent with projections contained in the Plan, (ii) will not adversely affect the implementation and financing of the Plan pursuant to the implementation schedule contained in the Plan, and (iii) is in accordance with SWACO’s approved waiver guidelines and considerations, which may include an assessment of the Maximum Feasible Utilization of existing In-District designated Solid Waste Facilities. Any Person or Applicant who submits a waiver request pursuant to Rule 2-2017 shall submit documents and information for consideration by the Board that support the issuance of the requested waiver. Any waiver granted by the Board shall be effective upon the execution of a waiver agreement between the Board and the Applicant setting forth the terms of such waiver and Waiver Fee, if any.

**2. List of Designated Facilities**

The facilities currently designated for SWACO solid waste generators are shown in Table 4-6 below.

**Table 4-6. Facilities Currently Designated**

Facility Name	Location		Facility Type
	County	State	
<b><i>In-District</i></b>			
Franklin County Sanitary Landfill	Franklin	Ohio	MSW Landfill
Morse Road Transfer Station	Franklin	Ohio	Transfer Facility
SWACO Jackson Pike Transfer Facility	Franklin	Ohio	Transfer Facility
<b><i>Out-of-District</i></b>			
None			
<b><i>Out-of-State</i></b>			
None			

## CHAPTER 5 WASTE REDUCTION AND DIVERSION

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This Chapter provides a summary of analyses of the SWACO's waste reduction and diversion efforts in order to show historical comparisons, performance, impacts and costs (See Appendix H for the complete set of analyses). While the summary demonstrates many strengths and successes, several programs may require possible modification in order to move towards greater waste reduction and diversion rates. Several programs need a deeper analysis and possible modifications, and the exploration of new programmatic opportunities.

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As explained in Chapter 1, SWACO must have programs and services to achieve the waste reduction and diversion goals established in the State Plan. SWACO must also ensure that there are programs and services available to meet local needs. SWACO may either directly provide some of these programs and services, or may rely on private companies and non-profit organizations to do so. SWACO may also act as an intermediary between the entity providing and the party receiving the program or service.

Between achieving the goals of the State Plan and meeting local needs, SWACO ensures that a wide variety of stakeholders have access to waste reduction, reuse, recycling and composting programs. These stakeholders include residents, businesses, institutions, schools, and community leaders. These programs and services described below collectively represent SWACO's strategy for furthering waste reduction and recycling in its member communities.

Before deciding upon which of the programs and services were necessary and should be provided, the Board performed a strategic, in-depth review of existing programs and services, recycling infrastructure, recovery efforts, finances and community expectations. This review consisted of a series of 13 criteria that allowed the Board to obtain a holistic understanding of SWACO by answering questions such as:

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

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

After deciding on the programs and services that would best serve the District, the Board projected the quantities of recyclable materials that would be collected through these efforts.

This, in turn, allowed the Board to project waste reduction and diversion rates for both the residential/commercial sector and the industrial sector. See Appendix E for the R/C sector rates and Appendix F for industrial sector rates.

Section A of this Chapter summarizes the process followed to determine which programs and services SWACO will provide to constituents during the period covered by this Plan, and Section B provides a brief description of each. It is necessary for SWACO to deliver some of these programs to achieve the goals established in Ohio's State Plan. Other programs and services satisfy the District's waste reduction and diversion needs. Appendix I provides detailed descriptions of all programs and services available to residents and businesses.

## **A. Program Evaluation and Priorities**

### **1. Strategic Analysis**

To conduct the strategic analysis, SWACO staff and Board members completed a detailed evaluation of its waste reduction and diversion efforts considering the factors listed below:

- Residential Recycling Infrastructure Analysis
- Commercial Sector
- Industrial Sector
- Residential/Commercial Waste Composition Analysis
- Economic Incentive Analysis
- Special Waste Streams
- Diversion Analysis
- Special Program Needs
- Financial
- Regional
- Population
- Data Collection
- Recyclable Material Processing

Where applicable, this evaluation analyzed historical comparisons, performance, weaknesses, participation, impacts, costs, and other factors influencing SWACO's waste reduction and diversion efforts. This section provides a summary of the analyses performed. See Appendix H for the complete analyses.

SWACO's programs demonstrate many strengths and successes achieved thus far, but several programs may require possible modification. In order to move towards greater resource conservation and resource recovery efforts, several programs need a deeper analysis and possible modifications, and new programmatic opportunities should also be explored.

Overall, during the reference year (2014), SWACO diverted 33% of the waste in the R/C sector. While this is a good diversion rate, these sectors have great potential to achieve higher diversion rates. Based on data collected from generators in the District, it is estimated 41% of the municipal solid waste landfilled is residential and 59% is commercial. The most recent waste stream characterization identified the bulk of materials landfilled, namely fibers (paper and cardboard), plastics and food wastes as highly amenable to recycling.

Analysis of SWACO's current infrastructure and diversion programs shows an opportunity for SWACO to increase programmatic efficiencies, thereby effecting higher diversion rates.

## **2. Conclusions**

In order to move beyond the 33% R/C diversion rate, new strategies and methods should be explored. The strategic analysis identified strengths, weaknesses and areas where more research and evaluation is needed to refine programs effectively to stimulate additional waste reduction and diversion. This section provides a summary of the Board's conclusions relating to the current programs. Conclusions of the strategic analysis observed include:

### **Residential Recycling Infrastructure: Curbside Recycling Services**

Ninety-six percent of single family households have access to a curbside recycling program. This level of participation has created a solid foundation for further enhancing curbside recycling programs. Currently, only 7 of the 33 political subdivisions with curbside recycling have a cart collection system, or a bin size larger than 18 gallons. Assisting and encouraging communities to transition to larger recycling cart collection systems is a best practice that has proven to help increase recycling, and presents a significant opportunity for SWACO to advance diversion within the District. Additionally, all but 8 political subdivisions have curbside recycling. Facilitating curbside collection to all political subdivisions is another opportunity to increase diversion. SWACO's contract assistance through its Community Solid Waste and Recycling Consortium Program has helped to catalyze many of the top performing curbside programs in the District but the program can be strengthened through additional participation. Educating and advocating for communities to adopt best practices, such as roll carts and volume-based disposal, within the consortium will be encouraged.

### **Residential Recycling Infrastructure: Recycling Drop-off**

The Recycling Drop-off Program is one of SWACO's largest and oldest programs. It also presents consistent challenges with identifying and quantifying data, usage, contamination and performance. Program costs continue to increase while

recovered tonnages decrease. Although the program has provided a valuable service in past years, its performance has decreased due to the improved access and use of curbside recycling services throughout the District. Data analysis of this program shows that evaluating and right-sizing the program is needed in order for the service to continue in a financially viable way.

### **Multi-Family Diversion Assistance**

Throughout the District multi-family units are often differentiated from single-family curbside programs and are lacking convenient recycling opportunities. Currently, little data is available on the existing practices, barriers, and opportunities for multi-family units within the District. Exploring ways to expand recycling at multi-family units presents additional access opportunities for residents of the District and can result in a greater amount of materials diverted.

### **Commercial/Institutional Sector Technical and Diversion Assistance**

The commercial and institutional sector contributes to the majority of the recycling activities taking place in the District but also offers some of the greatest potential for continued improvement. This sector is responsible for generating approximately 59% of the landfilled municipal solid waste in the District. Fibers, which include paper and cardboard, represent 29% of materials being landfilled which are also primarily generated from this sector and are highly recyclable. Although implementing waste reduction and recycling efforts in this sector poses significant challenges, in the past only minimal programming has been aimed at addressing the needs of this sector. Establishing new programs that help to alleviate current barriers may have the greatest impact on increasing overall diversion.

### **Industrial Sector Technical Assistance**

Most manufacturing industries in the District have self-initiated waste reduction and recycling programs to achieve financial savings or to meet environmental policies or regulations. The minimal data available estimates the diversion rate around 80% for the industrial sector during 2014. In the past, a small number of programs have been offered to assist this sector and correspondingly, nominal data and information has been gathered on the existing needs and opportunities for improvement. While this sector appears to have implemented effective diversion activities, further analysis and program development should be explored in future years.

### **Special Waste Streams**

Special waste streams include “hard-to-recycle” materials and restricted or regulated waste such as Household Hazardous Waste (HHW), organic materials,

electronics, durable goods and other items. These materials typically require special collection services or locations, more effort on behalf of the consumer to participate, and generally have higher programmatic costs but are vital to the success of properly managing the waste stream. The special waste diversion programs currently in place include:

- **Yard Waste** – SWACO’s Yard Waste Management Program has been in place for over two decades and has resulted in successfully diverting large tonnages of residential yard waste. The most recent characterization of landfilled materials showed that very little yard waste, only 5.9%, is landfilled. Continued education about the program and how to reduce yard waste contamination will help to ensure the program’s continued success.
- **Household Hazardous Waste (HHW)** – The HHW program is one of the most requested services by residents and communities. This program is also the highest costs per ton out of the programs offered by SWACO. Data shows the amount of material being collected has leveled off while the cost continue to increase. Further evaluation of this program will be needed in order to address the community’s interests, increase diversion impacts and convenience, and to financially sustain the program. Currently, a permanent facility is open for limited hours on weekdays and four mobile collection events are offered annually. Alternative management approaches such as consumer awareness regarding prevention and reduction of HHW materials, and promotion of existing ‘take-back’ retail options, will be explored.
- **Electronic Waste (E-Waste)** – E-Waste is one of the fastest growing waste sectors as technology continues to advance and devices rapidly become obsolete. Many E-Waste recycling businesses and services are available throughout the District and a variety of retailers offer take-back programs. SWACO has recently rolled out an E-Waste Collection Program which is now available to municipalities, government agencies and institutions throughout the District. Municipalities can offer collection options to their residents through this program.
- **Food Waste** – Food waste is one of the largest segments of the residential and commercial waste stream. It is estimated that approximately 12.8% of landfilled material is food waste. Limited outlets for processing and handling food waste currently exist within the District. Large food waste generators contract for services to divert food waste. Small, start-up businesses offer specialized services, and non-profit organizations are rescuing and delivering edible salvageable food to those in need. SWACO believes that more can be done to assess and develop solutions for managing and reducing food waste in the District and this should be addressed in future years.

- **Pharmaceuticals** – SWACO also plays a vital role in helping identify and coordinate special diversion needs that arise within the District. One such example is the promotion of National Prescription Drug Take-Back Day, where SWACO works with community partners to provide proper disposal of pharmaceutical drugs. Currently, there are nine permanent locations to safely dispose of prescription drugs within the District.

### **Special Program Needs**

SWACO's Environmental Crimes Task Force program supports a collaboration of the Franklin County Sheriff's Office, Office of the Franklin County Prosecuting Attorney, City of Columbus, and Franklin County Public Health' the mission of the Task Force is to address illegal dumping, littering, and related environmental crimes throughout the District. The program has been in place for over two decades, but has lacked detailed performance measurements and the long-term funding model necessary to sustain the program.

### **Diversion Analysis**

Information and data collection is central to SWACO's success for understanding and managing the waste stream. SWACO has been making efforts to improve its data collection efforts but additional work is required to build a comprehensive data collection system that can be managed as a resource. Improving existing data collection methods and implementing new programs to capture commercial and industrial data, along with regular waste composition studies, will help keep SWACO programs and planning on track in the future.

### **Financial Analysis**

All generation fees received by SWACO are dedicated to supporting the programs and services provided for the District. Should additional monies be necessary to fund such programming, grant monies, recycling revenues, reimbursements, and other miscellaneous contributions have been used to supplement the programming budget. Prior to 2011, SWACO was extracting from the carryover balance of the operating budget to support any deficits in programming spending. Over the past five years, expenses have declined, largely as a result of the discontinuation of outdated programs and the reevaluation of program expenses. Approximately one-third of SWACO's programs budget has historically been spent on the yard waste management program. The next largest expenses are administration and the recycling drop-off program. SWACO is in a position to leverage an internal funding program to offer grants and encourage a variety of activities such as: testing pilot programs, start-up contributions, program expansion, etc.

All generation fees received by SWACO are dedicated to the ten (10) allowable uses as provided by statute, which includes support for the programs and services provided for the District. Should additional monies be necessary to fund such programming, grant monies, recycling revenues, reimbursements, and other miscellaneous contributions have been used to supplement the programming budget. Ohio Revised Code §3734.57 mandates that generation fee monies must be utilized exclusively for the following purposes:

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

### **Economic Incentive**

Economic incentives are a proven method to increase participation in waste reduction and diversion activities. However, economic incentives must be well designed in order to create and maintain sustainable programs and not solely subsidize dependencies. Incorporating well thought-out economic incentives into SWACO's programs could play a major role to increase diversion and establish new programs, and could be used to address new areas of opportunity related to commercial and institutional waste streams. The promotion of incentives for the residential sector, such as volume-based disposal, will also be prioritized.



### **Recyclable Material Processing**

The processing capacity for traditional recyclables and yard waste in the District appears to be sufficient. Private sector development and competition for recycling services has helped to create a robust recycling industry in Central Ohio, but appropriate expansion of processing infrastructure and services should be encouraged. Research and relationship building with the recycling industry will help identify processing needs and opportunities and potentially enhance diversion capacity.

### **Data Collection**

Information and data collection is central to SWACO's success for understanding and managing the waste stream. SWACO has been making efforts to improve its data collection efforts but additional work is required to build a comprehensive data collection system that can be managed as a resource. Improving existing data collection methods and considering new programs to capture commercial and industrial data, along with regular waste composition studies, could help keep SWACO programs and planning on track in the future.

See Appendix I for further discussion regarding conclusions, action items and priorities about programs.

### **3. Priorities**

Based on the evaluation of SWACO's current infrastructure and program capabilities, the Board made a list of various program possibilities, including refining current programs, implementing new services, or other options to address the goal of stimulating additional diversion opportunities. After evaluating this list of options, the Board identified the following top priorities for implementation during this planning period:

- Perform an evaluation of the recycling drop-off program and make modifications to improve efficiency and cost effective performance.
- Perform a study of HHW collection programs to identify best and most sustainable practices for managing HHW in the District.
- Promote yard waste diversion and explore options to improve data collection and reduce contract costs.
- Evaluate the expenses and management of the Environmental Crimes Task Force.
- Identify commercial sector recycling activities, expand data collection efforts, and establish commercial waste reduction and diversion programs.

- Identify the landscape of multi-family housing recycling services and expand recycling to multi-family units lacking these services.
- Assist communities defining their waste reduction and diversion goals, and work to collect additional data, create flexible programs, enhance communications with the stakeholders, improve effectiveness of programs, manage litter, and implement best practices in waste management methods.
- Develop a robust education and outreach campaign for SWACO programs.
- Explore options for developing a food waste management program focused on reduction, reuse and recovery.
- Update website to expand waste reduction, reuse and recycling information.

The process of the strategic analysis of the District's needs and SWACO's program offerings led to the development of a wide variety of programs directed towards leadership, management, facilitation, and education/outreach, with a continued emphasis on encouraging innovation. The Board identified three main priorities as the focus of SWACO's programming:

- Continue to evaluate and modify existing programs to improve efficiency, use of best practices, and cost optimization.
- Conduct research and establish new initiatives to address current community waste reduction and diversion needs.
- Develop a robust education and outreach campaign to represent and promoted all programs.

## **B. Program Descriptions**

SWACO is poised for the next stage of programming for sustainability and higher diversion goals. To accomplish this, both new and existing programs and new programs are planning for studies. Studies are paramount to strengthen the infrastructure and ensure sustainable strategies to lay the foundation to move along the best path of advancement. Planning is a process.

The following section briefly describes the major programs and services SWACO will provide during the planning period. The complete descriptions of each of the programs are available in Appendix I.

### **Residential Recycling Infrastructure: Curbside Recycling Services**

All non-subscription curbside recycling services available in the reference year are expected to continue. Non-subscription services means all residents have access to curbside recycling; either political subdivisions or individual households arrange for

non-subscription curbside recycling programs in an open market system. Materials are collected in a single stream (i.e., fibers, plastics, metals, and glass commingled together), and the market guides the types of materials suitable for collection. SWACO provides technical assistance to District communities to develop and contract for non-subscription curbside programs. SWACO also monitors and evaluates curbside programs, including collection operations, promotions, contracts, program successes and challenges, and Re-TRAC Connect community data collection.

**Table 5-1. Curbside Recycling Service**

Name of Curbside Service	Community Served	Service Provider <sup>1</sup>
Non-Subscription Curbside Recycling	City of Bexley	Rumpke
Non-Subscription Curbside Recycling	Blendon Township	Rumpke
Non-Subscription Curbside Recycling	Village of Brice	Local Waste
Non-Subscription Curbside Recycling	Clinton Township	Local Waste
Non-Subscription Curbside Recycling	City of Columbus	Rumpke
Non-Subscription Curbside Recycling	City of Dublin	Rumpke
Non-Subscription Curbside Recycling	Franklin Township	Local Waste
Non-Subscription Curbside Recycling	City of Gahanna	Rumpke
Non-Subscription Curbside Recycling	City of Grandview Heights	City of Grandview Heights
Non-Subscription Curbside Recycling	Village of Marble Cliff	City of Grandview Heights
Non-Subscription Curbside Recycling	City of Grove City	Local Waste
Non-Subscription Curbside Recycling	City of Groveport	Local Waste
Non-Subscription Curbside Recycling	City of Hilliard	Local Waste
Non-Subscription Curbside Recycling	Jackson Township	Local Waste
Non-Subscription Curbside Recycling	Jefferson Township	Waste Management
Non-Subscription Curbside Recycling	Madison Township	Local Waste
Non-Subscription Curbside Recycling	Mifflin Township	Rumpke
Non-Subscription Curbside Recycling	Village of Minerva Park	Local Waste
Non-Subscription Curbside Recycling	Village of New Albany	Rumpke
Non-Subscription Curbside Recycling	Norwich Township	Local Waste
Non-Subscription Curbside Recycling	Perry Township	Rumpke
Non-Subscription Curbside Recycling	Plain Township	Rumpke
Non-Subscription Curbside Recycling	Pleasant Township	Local Waste
Non-Subscription Curbside Recycling	City of Reynoldsburg	Rumpke
Non-Subscription Curbside Recycling	Village of Riverlea	Local Waste
Non-Subscription Curbside Recycling	Truro Township	Rumpke
Non-Subscription Curbside Recycling	City of Upper Arlington	Republic
Non-Subscription Curbside Recycling	Village of Urbancrest	Local Waste
Non-Subscription Curbside Recycling	Village of Valleyview	Local Waste
Non-Subscription Curbside Recycling	Washington Township	Rumpke
Non-Subscription Curbside Recycling	City of Westerville	Rumpke
Non-Subscription Curbside Recycling	City of Whitehall	Local Waste
Non-Subscription Curbside Recycling	City of Worthington	Local Waste

<sup>1</sup>Service Provider is the entity that provides the curbside recycling service, not the entity that funds the service.

### Recycling Drop-off Program

SWACO currently provides and services 82 full-time urban containers, 6 rural containers, and 115 school containers. “Full-time” drop-off containers means they are available to the public 24 hours, 7 days a week. Presently, all containers are the property of SWACO and are serviced by SWACO personnel with SWACO equipment. Residents must deliver their recyclables to the drop-off containers to be recycled, and materials are collected in a single stream. SWACO plans to evaluate the drop-off recycling program and make modifications in the near term. The goal of the evaluation will be to improve the efficiency and effectiveness of the program by optimizing site location, size (i.e., number of drop-off locations available), education, and operations. Upon completion of the drop-off recycling evaluation, SWACO may choose to modify the program.

**Table 5-2. Recycling Drop-Off Services**

Location	Community Served	Service Provider
2491 Walker Road	Brown Township	SWACO
Corner of Lockbourne Road & 317	Hamilton Township	SWACO
Hamilton Township Park	Hamilton Township	SWACO
2620 London Groveport Road	Jackson Township	SWACO
Lockbourne Post Office, 1 Mechanic Street	Lockbourne	SWACO
Waste Management	Canal Winchester	Waste Management
Stradley Park	Canal Winchester	Waste Management
Indianola Plaza, 3600 Indianola Avenue	Columbus	SWACO
Fire Station, 5433 Fisher Road	Columbus	SWACO
14-0 Carryout, 320 East Hudson Street	Columbus	SWACO
Audubon Center, 505 W. Whittier Street	Columbus	SWACO
Beta Theta Pi House, 165 East 15 <sup>th</sup> Avenue	Columbus	SWACO
Broad Brunson Condos, 1799 E. Long Street	Columbus	SWACO
Charity Newsies, 4300 Indianola Avenue	Columbus	SWACO
COAAA, 174 E. Long Street	Columbus	SWACO
Columbus Dog Connection, 2761 Johnstown Road	Columbus	SWACO
Columbus Schools Main Office, 270 East State Street	Columbus	SWACO
Dublin Green, Meadow Creek Drive	Columbus	SWACO
Fire Station, 211 McNaughten Road	Columbus	SWACO
Fire Station, 2193 Frank Road	Columbus	SWACO
Fire Station, 3069 Parsons Avenue	Columbus	SWACO
Fire Station, 3240 McCutcheon Road	Columbus	SWACO
Fire Station, 3555 Fishinger Road	Columbus	SWACO
Fire Station, 3675 Gender Road	Columbus	SWACO

Location	Community Served	Service Provider
Fire Station, 4100 Sullivant Avenue	Columbus	SWACO
Fire Station, 440 Lazelle Road	Columbus	SWACO
Fire Station, 5151 Little Turtle Road	Columbus	SWACO
Fire Station, 5305 Alkire Road	Columbus	SWACO
Fire Station, 7560 Smokey Row Road	Columbus	SWACO
Fire Station #17, 2300 W. Broad Street	Columbus	SWACO
Fox and Hounds, 1075 Weybridge Road	Columbus	SWACO
Godman Guild, 303 East 6 <sup>th</sup> Avenue	Columbus	SWACO
Goodale Park, 120 W. Goodale Boulevard	Columbus	SWACO
Junior Achievement, 68 E. 2 <sup>nd</sup> Avenue	Columbus	SWACO
Kings Art Center, 867 Mount Vernon Avenue	Columbus	SWACO
Kroger Store, 150 West Sycamore and Front Street	Columbus	SWACO
Lemans Village, 5026 Dieker Road	Columbus	SWACO
Market Mohawk Apartments, 399 S. Grant Street	Columbus	SWACO
Meijer, 5050 North Hamilton Road	Columbus	SWACO
MEPS, 775 Taylor Road	Columbus	SWACO
Newman Center, 64 West Lane Avenue	Columbus	SWACO
Park Maintenance, 1533 Alum Industrial Drive	Columbus	SWACO
Parliament Ridge, 4388 Walford Street	Columbus	SWACO
Recreation Center, 276 South Nelson Road	Columbus	SWACO
Recreation Center, 1184 Barnett Road	Columbus	SWACO
Recreation Center, 1254 Briarwood Avenue	Columbus	SWACO
Recreation Center, 1826 Lattimer Road	Columbus	SWACO
Recreation Center, 240 West Oakland Avenue	Columbus	SWACO
Recreation Center, 2801 Lockbourne Road	Columbus	SWACO
Recreation Center, 455 South Westgate Avenue	Columbus	SWACO
Recreation Center, 4900 Olentangy River Road	Columbus	SWACO
Recreation Center, 4900 Sawmill Road	Columbus	SWACO
Recreation Center, Whetstone Park, 3923 N. High St.	Columbus	SWACO
Runaway Bay, 1480 Runaway Bay Drive	Columbus	SWACO
St. Stevens, 1500 E. 17 <sup>th</sup> Avenue	Columbus	SWACO
Stonebrook Condos, 3132 Dublin Road	Columbus	SWACO
SYC, 93 Weisheimer Road	Columbus	SWACO
Waggoner Park Condos, 8337 Glabra Drive	Columbus	SWACO
Washington Place Apartments, 518 E. Town Street	Columbus	SWACO
Wood Lake Village, 3535 Hunting Brook Drive	Columbus	SWACO
Home Depot, 5858 Sawmill Road	Dublin	SWACO
Batelle Darby Creek, 1775 Darby Creek Drive	Galloway-Prairie Twp.	SWACO
Municipal Building, 4035 Broadway	Grove City	SWACO

Location	Community Served	Service Provider
Phoenix Golf Links, 3413 Jackson Pike	Grove City	SWACO
Service Department, 3262 Ventura Boulevard	Grove City	SWACO
Urbancrest YMCA, 3500 1 <sup>st</sup> Avenue	Grove City	SWACO
Walmart Distribution Center, 3880 SW Blvd.	Grove City	SWACO
Three Creeks Metro Park, 3860 Bixby Road	Groveport	SWACO
Kroger Store, 2525 Rome-Hilliard Road	Hilliard	SWACO
Highbanks Metro Park, 9466 Columbus Pike	Lewis Center	SWACO
2459 Agler Road	Mifflin Township	SWACO
New Albany K-1 School, Swickard Woods Boulevard	New Albany	SWACO
Fire Station, 9500 Johnstown Road	Plain Township	SWACO
5373 Norton Road	Pleasant Township	SWACO
Fire Department, 123 Inah Avenue	Prairie Township	SWACO
Fire Department, 451 Hubbard Road	Prairie Township	SWACO
Prairie Township Hall, 23 Maple Drive	Prairie Township	SWACO
Blacklick Woods Metro Park, 6975 E. Livingston Ave.	Reynoldsburg	SWACO
Blendon Woods Metro Park, 4265 W. Dublin-Granville Rd.	Westerville	SWACO
Sharon Woods Metro Park, 6911 S. Cleveland	Westerville	SWACO
St. Paul Church, 313 N State Street	Westerville	SWACO
Whole Foods, 3670 Dublin-Granville Road	Columbus	SWACO
Worthington, 48 E. New England Avenue	Worthington	SWACO
Worthington, 12. W. New England Avenue	Worthington	SWACO
North Recreation Center, 374 Highland Avenue	Worthington	SWACO
Columbus Public School Locations (115 locations)	Columbus	SWACO

### Commercial/Institutional Sector Technical and Diversion Assistance

Commercial sector entities are defined as: commercial businesses, schools and Universities, government agencies, office buildings, amusement parks, event venues (stadiums, concert halls), hospitals and non-profit organizations. Forms of assistance offered by SWACO include consultations, contract assistance, hosting meetings and special events, a recognition program and economic incentives to encourage participation in waste reduction and diversion activities. Assistance will be provided to all types of commercial entities but will be designed for target areas. SWACO will also provide contract assistance to school districts through the School Recycling and Waste Consortium. All assistance strategies will collect quantitative measures of diversion in order to compare the number and type of assistance strategies and impacts of each strategy.

### **Multi-Family Diversion Assistance**

Multi-family programs will be designed to best meet the needs of the users. An initial study will be performed to determine diversion assistance strategies, with a more comprehensive plan targeting service provider options to follow. The study will help identify and understand program issues such as multi-family unit concentrations, barriers, current/potential infrastructure and collection options, and other relevant topics to the program. Upon completion of the study, SWACO will provide technical assistance designed to ensure multi-family units have opportunities to recycle.

### **Industrial Sector Technical Assistance**

SWACO will provide educational resources and technical assistance to help meet the needs of the industrial sector. The methods of assistance will be better defined as these needs are identified but may include consultations, contract assistance, business forums, toolkits, a recognition program, and educational and outreach activities. See Appendix L for more information.

### **HHW Management**

SWACO's HHW management will focus on three areas:

- **Product Stewardship and Retailer Take Back:** SWACO will take an active role in advocating extended producer responsibility and product stewardship systems by organizing stakeholder meetings between industry and government representatives in an effort to work together to develop meaningful policy, education and enforcement opportunities.
- **HHW Collection:** SWACO is committed to providing HHW collection opportunities at both a drop-off facility and through mobile events during the planning period. The research performed and the proposals for services submitted will determine the best options for providing affordable and effective access for safely disposing of HHW materials generated by residents of Central Ohio.
- **HHW Management Studies:** SWACO will explore and research and the most sustainable practices for managing HHW for potential implementation during the planning period. Possible program costs may include studies, pilot projects, and/or infrastructure development.

### **E-Waste Management**

SWACO's website provides a list of organizations/businesses offering e-waste collection and also advertises community e-waste collection drives. In January 2016, SWACO implemented an electronics diversion program for schools, county governments, and political entities; schools and government entities can contract to have their e-waste materials collected and processed, and political subdivisions have the option to host

mobile collection events. During the planning period, SWACO will be looking to expand e-waste recycling programs and initiatives to other aspects of the business/commercial sectors.

### **Scrap Tire Management**

During the planning period, SWACO will use three management strategies: retailer take-back, drop-off recycling, and community collection in order to manage and improve scrap tires diversion in the District. SWACO will also continue outreach to collaborative partners such as the Ohio EPA, other regional solid waste districts, facility operators, and local processors to determine better tire management practices. SWACO reserves the right to provide funding for research or pilot projects for tire management during the planning period.

### **Yard Waste Management**

Yard waste is managed through a multi-faceted system of education, curbside collection, recycling drop-off, and contracted composting services. Processing yard waste is the responsibility of registered compost facilities that receive and process the materials. SWACO contracts with two composting facilities to process in-district materials at no charge. Several yard waste drop-off locations are within the District. In addition, 21 political subdivisions offer some type of curbside yard waste collection services. SWACO will continue to explore options to improve data collection and reduce contract costs during the planning period. To increase residential education on proper yard waste management, SWACO will develop a more robust outreach and education strategy, described in detail in Appendix L.

### **Food Waste Management**

During the planning period, SWACO will promote waste reduction and diversion of food through:

- Waste Reduction – SWACO will develop educational programs to help minimize the amount of wasted food generated and disposed for both the residential and commercial sectors.
- Food Recovery and Reuse – SWACO will assist the distribution of edible food by identifying and promoting local food recovery outlets (such as food banks).
- Recycling, Composting and Other Technologies – During the planning period, SWACO will promote dialogue and convene working partnerships across the region. In order to better understand the issues surrounding food waste management in the District, SWACO will conduct research on existing District and regional infrastructure focusing on challenges for collection and processing systems and cost-and-benefit payoff. Research is planned to begin in 2018.



Feasibility studies may be conducted as a part of the research to determine viable technologies and infrastructure for managing food waste.

### **Grants, Sponsorships and Special Project Funding**

SWACO provides financial support for waste reduction, reuse, recycling, composting and educational purposes through Grants, Special Event Sponsorships, Market Development and Special Project Funding. Funds will be provided to projects that align with SWACO's mission and advance Central Ohio's waste reduction and diversion efforts. All funds provided through these programs require reporting to SWACO in order to measure impacts and outcomes, as well as to ensure that funds are used properly.

### **Market Development and Recycling Industry Research**

During this planning period, SWACO intends to become more actively involved in providing assistance to the reuse and recycling industries within the District, including collectors and processors of diverted materials, as well as manufacturers and sellers of remanufactured and recycled-content products. SWACO will conduct a market study to understand the economics of reuse, remanufacturing and recycling, in the District and research how increased diversion (voluntary, incentive, bans, mandates, etc.) will drive new businesses. A market study will be conducted within the first 5 years of the planning period. SWACO may provide funding assistance to businesses that manufacture and market remanufactured and recycled-content products and/or strengthen demand for those products. Areas of funding such as grants or in-kind assistance to implement programs and support that attracts new businesses that can help build diversion infrastructure within the District.

### **Contract Assistance**

A Solid Waste and Recycling Consortium ("Consortium") is a group of communities, schools or other entities that agree to bid together in order to increase negotiating power and reduce costs when contracting for solid waste management and recycling services. SWACO currently invites communities and schools to participate in meetings to inform them about the consortium process and potential options. SWACO will continue to promote these consortiums and target communities without curbside services. In addition, SWACO will host meetings with communities and haulers to expand and/or improve service contracts by including multi-family and commercial buildings, using volume-based rates and other options. Communities may also receive technical assistance for developing their contracts even if they are not participating in the consortium process. SWACO currently offers this contract assistance to public schools within the District, and also has plans to offer it to commercial and industrial companies during the planning period.

### **Community Technical and Diversion Assistance**

SWACO will support community-based waste reduction, reuse and recycling programs and will assist communities in defining diversion goals, collecting waste generation and diversion data, creating new programs that are flexible/scalable, increasing communication with the public, improving impacts of existing programs, managing litter and illegal dumping and implementing best practices. SWACO will continue to assist in coordinating and promoting public diversion activities such as political sign recycling event; prescription drug collection events; roadside litter cleanups and recycling containers for public events. See Appendix L for additional education and outreach efforts related to communities.

### **Data Collection and Waste Composition**

SWACO devotes staff time to overseeing and participating in a comprehensive data collection effort. Data collection efforts will be expanded to the commercial and industrial sectors for information on tons generated, disposed. SWACO will review existing data collection process to improve efficiency, analysis of data and reporting methods, as well as evaluating enhancements to the data collection software utilized. Further, SWACO will conduct periodic waste studies to determine participation, set-out rates, diversion and waste stream composition.

### **Franklin County Public Health Assistance**

As provided by Ohio Revised Code §3734.57, SWACO may provide funding from the generation fee fund to the board of health within its District, here, the Franklin County Public Health department, for the following purposes:

- Enforcement of [Chapter 3734] and rules, orders, and terms and conditions of permits, licenses, and variances adopted or issued under it, other than the hazardous waste provisions of this chapter and rules adopted and orders and terms and conditions of permits issued under those provisions;
- Paying the costs incurred by those boards of health for collecting and analyzing samples from public or private water wells on lands adjacent to those facilities;
- Enforcement of section 3734.03 of the Revised Code or to local law enforcement agencies having jurisdiction within the district for enforcing anti-littering laws and ordinances.

### **Environmental Crimes Task Force**

SWACO provides funding to the Environmental Crimes Task Force (ECTF) of Central Ohio to enforce environmental laws and prosecute violators. The ECTF will continue to utilize a litter hotline (phone/website), education and awareness, data analysis, and restitution/fine reallocation to combat blight, litter, and open dumping during the

planning period. The ECTF partnership will also be evaluated to assess performance and sustainable funding mechanisms. Modifications to the program may occur during the planning period.

### **City of Columbus Funding Assistance**

SWACO contracts with the City of Columbus to fund an Environmental Steward position to implement waste reduction and recycling efforts within the City of Columbus. The contract is reviewed and evaluated annually and allocated as a grant with a specified, long-term scope of work.

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

SWACO will employ several programmatic tools to deliver education and outreach regarding SWACO programs and District opportunities (more information can be found in Appendix L):

- **Website** – SWACO’s current website contains the necessary information to adequately describe its basic programs and purpose. The website includes information on major recycling programs, yard waste, HHW management and school tours. SWACO aims to completely revamp the website in the planning period to make the site an all-in-one source of information for the District.
- **Resource Guide** – SWACO’s website is also considered a resource guide for the District. Residents can learn about waste disposal, recycling drop off areas, learn about special HHW and electronics collection events, and regular drop off hours, as well as find contact information for communities.
- **Infrastructure Inventory** – Similar to the resource guide, SWACO has a comprehensive listing of District infrastructure located on the website. This information includes facilities owned, managed or contracted by SWACO such as: the landfill, compost facilities, public recycling and yard-waste drop-off locations, HHW facility, and SWACO’s transfer facilities.
- **Speaker/Presentations** – SWACO is willing and able to provide a presenter whenever requested by communities, businesses, schools and other groups within the District. Requests can be made through SWACO’s website, email, or by phone. SWACO customizes the presentation and topic material towards each audience that is requesting the presentation. During the plan period, SWACO will be taking a more proactive approach to presenting by seeking out audiences and developing specialized presentations that raise awareness about new initiatives and upcoming. SWACO will also explore the idea of a Speakers Bureau.

- **Residential Outreach** – Residents within the District, including single-family and multi-family dwellings, are a priority target audience for SWACO. One of the areas of focus for reaching residents includes improving awareness of acceptable recyclable materials for the curbside and drop-off programs. SWACO will be conducting District-wide educational campaigns, providing communities with educational materials for their residents, and hosting public informational workshops.
- **School Outreach** – Public and private school teachers, students and facility managers within the District are another priority target audience for SWACO. SWACO will update its database of educators and facility managers then perform targeted outreach. SWACO provides educator workshops to promote waste reduction and diversion curriculum. One of the areas of focus for reaching schools is to survey educators regarding SWACO's methods of promoting its services to schools, and evaluate their needs in meeting State of Ohio curriculum requirements and functionality.
- **Industry Outreach** – Industries within the District, specifically businesses that are classified as manufacturers, are also an outreach priority. The industrial sector, a relatively new target audience for SWACO, will see increased focus over the planning period. In order to fully understand this sector and the areas where it can best provide assistance, SWACO will need to conduct extensive market research, including surveys and focus groups, to identify needs and to develop and offer corresponding assistance.
- **Institutional and Commercial Business Outreach** – Institutional and commercial businesses within the District, which includes office buildings, stadiums, event venues, hospitals and nonprofit organizations, are another target audience for SWACO. To work effectively with the sector, SWACO projects it will partner with sector-related associations (e.g., chambers of commerce, business improvement districts, trade organizations) to develop and deliver specialized outreach, education and training opportunities.
- **Municipal Outreach** – Municipalities within the District, comprised of the government agencies of the District's 41 cities, villages and townships, continue to be a paramount audience for SWACO. SWACO will conduct market research to gauge community needs, and then employ a range of outreach and education programs designed to strengthen the relationships with the community and its leaders. Outreach will include educational webinars and special events to promote SWACO programs and best practices in waste management, but SWACO seeks to ultimately empower administrations to be a driver of their local waste diversion programs.

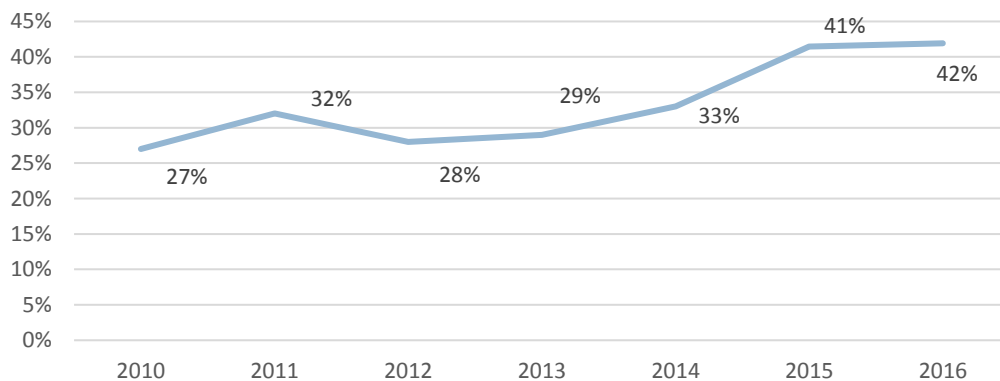
- Community Leaders and Elected Officials Outreach** – Community leaders are influential individuals who generally represent community-based entities, such as homeowner associations, citizen groups and grassroots organizations, and whose opinions or ideas others often rely on or support. Elected officials include individuals elected at the city, township, village, county and state level to represent the public. SWACO will provide educational materials to this sector that promote the beneficial impacts of waste reduction and diversion in the District. SWACO will also conduct market research to gauge individual interest in deeper engagement.

See Appendix L for a list of the programmatic tools SWACO can utilize to address the needs of designated target audiences.

**C. Waste Reduction and Recycling Rates**

Historically, R/C waste reduction and recycling trends hovered above the 25% state waste reduction and recycling rate goal, as shown in Figure 5-1. In more recent years, more successful measures of collecting data were utilized, which resulted in an improvement in recycling rates. Thus, SWACO has exceeded the requirements of Goal 2 to reduce and recycle at least 25% of the R/C waste generated.

**Figure 5-1. Historical Residential/Commercial Waste Reduction and Recycling Rate**



The recycling rate jump realized through data collection efforts is expected to increase slightly then plateau through the planning period. The annual increases projected are estimated to result from improved data collection from processors and brokers, which in turn will provide SWACO with a better understanding of recycling efforts taking place in the District.

New programming designed for e-waste and food waste are also projected to increase slightly before flattening. Residential programs such as curbside and drop-off are mature

systems that are expected to maintain steady diversion rates through the planning period with conservative increases projected.

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

Year	Projected Tons Collected	Residential/Commercial WWR <sup>1</sup> (%)
2018	716,658	43%
2019	727,712	44%
2020	738,988	44%
2021	750,492	45%
2022	751,966	45%
2023	753,356	45%

Historically, industrial waste reduction and recycling trends have shown a degree of variability over time. Much of this is focused on capturing data from brokers and processors, but surveys may not capture accurate recycling data from industries if brokering firms are new or unknown. SWACO is planning adjustments to the data collection efforts to address these gaps.

In order to take a conservative approach to address historical variability and uncertainty, the waste reduction and recycling rate for this industry is held constant through the planning period.

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

Year	Projected Tons Collected	Industrial WRR <sup>2</sup> (%)
2018	228,338	85%
2019	228,338	85%
2020	228,338	85%
2021	228,338	85%
2022	228,338	85%
2023	228,338	85%

## CHAPTER 6 BUDGET

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This Chapter provides a summary of the budget for SWACO's Programs Department for the reference year (2014) and the first 6 years of the Plan (2018-2023).

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Ohio Revised Code Section 3734.53(B) requires a Plan to present a budget which establishes the fees to be collected by the District for the generation and disposal of solid wastes, as well as the allocation of the Generation Fee among the purposed detailed in division (g)(1) to (10) of Ohio Revised Code Section 3754.57. The Plan identifies the Generation Fee collected by SWACO as the source of funding for the implementation of the Plan and the programs designated. The Plan also identifies those programs SWACO is to fund during the planning period and estimates the amount to be spent on each program.

Ultimately, SWACO is required to demonstrate that adequate funding is available to implement the approved Plan, which is provided through annual projections for revenues, expenses and cash balances.

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

This Chapter of the Plan provides an overview of SWACO's budget. Detailed information about the budget is provided in Appendix O.

### A. Overview of SWACO's Budget

During the 2014 reference year, SWACO's Generation Fee revenue was \$5.09 million. Revenue is projected to remain stable at \$5 million annually throughout the planning period. Current revenue for SWACO's Programs Department is generated primarily through generation fees, and this is the only funding mechanism projected to be used by SWACO to generate revenue. Generation fees are projected to remain at the current rate of \$5 per ton for the entire planning period.

Projected expenditures for SWACO's programs were developed based on the programmatic needs identified in Appendices H, I and L. Throughout the planning period, annual expenditures vary from \$5.03 million to a \$5.14 million. Budgetary projections show SWACO will have ample revenue to finance the implementation of the programs and initiatives described throughout this Plan. SWACO estimates beginning the planning period in 2018 with a carryover balance of \$2.9 million, and a carryover balance of \$1.3 million at the close of the planning period.

It should also be noted that during the planning period, the Board will develop and implement a "Reserve Policy" to allow the Programs Department to drawdown from the existing carryover balance, either for planned or unforeseen expenditures.

## **B. Revenue**

### **Overview of How Solid Waste Management Districts Earn Revenue**

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

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

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

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

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

- The In-District fee must be at least \$1.00 and no more than \$2.00;
- The Out-of-District fee must be at least \$2.00 and no more than \$4.00; and
- The Out-of-State fee must be equal to the In-District fee.

#### ***Generation Fees (See generally Ohio Revised Code Section 3734.573)***

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

#### ***Solid Waste Service Charges (See generally Ohio Revised Code Section 343.08)***

A SWMD may fix reasonable rates or charges to be paid by every person, municipal corporation, township, or other political subdivision that owns premises to which solid



waste collection, disposal, recycling, or other service is provided by the SWMD. Charges for these solid waste services shall be made only against lots or parcels that are improved, or in the process of being improved, with at least one permanent, portable, or temporary building.

**Contracts (See generally Ohio Revised Code Sections 343.02 and 343.03)**

A SWMD may contract with any person, municipal corporation, township, or other political subdivision for the furnishing of solid waste collection, disposal, recycling, or other solid waste services for the District.

**Other Sources of Revenue**

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

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

**1. Generation Fees**

SWACO levies a \$5 per ton Generation Fee for solid waste generated within the District.

**2. Other Funding Mechanisms**

Previously, SWACO's programs have received limited amounts of revenue from various sources. These include:

- **Grants** – SWACO has acted as a sponsor and pass-through agent for grant recipients through Ohio Department of Natural Resources (ODNR)/Ohio EPA Grant Program.
- **Recycling Revenue** – SWACO has received revenue from recyclable materials recovered through the the Recycling Drop-off Program. This contract recently expired and a new contract has been executed with SWACO-paid processing fees and the potential for variable revenue sharing based on the commodities markets. Given the current status of

the commodity markets, SWACO does not plan to generate revenue through this contract.

- **Gains on Fixed Assets** – This is comprised of funds generated from the sale of assets, such as vehicles that were no longer necessary for programs.
- **Other Revenue** – Miscellaneous revenues sources include the sale of sponsorships for recognition ceremonies and reimbursement of funds contributed to dumpsite clean-up costs.

During the 2010 to 2015 time period, revenue from other funding mechanisms ranged from a low of \$40,759 (2015) to a high of \$469,618 (2010). SWACO does not plan to generate material revenue from these alternative sources during the planning period.

**3. Summary of Revenue**

The following table presents SWACO’s total revenue by source for the reference year (2014) and the first 6 years of the Plan (2018- 2023).

**Table 6-1. Summary of Revenue**

Year	Generation Fees	Other Revenue					Total Revenue
		Grants	Misc. Revenue	Recycling Revenue	Gains on Fixed Assets	Misc. Revenue	
<b>Reference Year</b>							
2014	\$5,044,910	\$0	\$0	\$30,436	\$14,060	\$0	\$5,089,406
<b>Planning Period</b>							
2018	\$5,000,000	\$0	\$0	\$0	\$0	\$0	\$5,000,000
2019	\$5,000,000	\$0	\$0	\$0	\$0	\$0	\$5,000,000
2020	\$5,000,000	\$0	\$0	\$0	\$0	\$0	\$5,000,000
2021	\$5,000,000	\$0	\$0	\$0	\$0	\$0	\$5,000,000
2022	\$5,000,000	\$0	\$0	\$0	\$0	\$0	\$5,000,000
2023	\$5,000,000	\$0	\$0	\$0	\$0	\$0	\$5,000,000

Source(s) of information: Plan Tables O-2 and O-5

**C. Expenses**

**Overview of How Solid Waste Management Districts Spend Money**

Ohio’s law authorizes SWMDs to spend revenues received from generation and disposal fees on 10 specified purposes (often referred to as the 10 allowable uses). All of the uses

are directly related to managing solid waste or for dealing with the effects of hosting a solid waste facility. The 10 uses are as follows:

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

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

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

Table 6-2 presents a summary of expenses for the reference year (2014) and for the first 6 years of the planning period (2018-2023) broken into specific expense categories.

Table 6-2. Summary of Expenses

Expense Category	Year						
	Reference	Planning Period					
	2014	2018	2019	2020	2021	2022	2023
Direct Administration	\$830,897	\$1,173,777	\$1,202,834	\$1,232,694	\$1,263,378	\$1,294,912	\$1,327,329
Yard Waste/Organics Management	\$1,485,000	\$1,545,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000
Recycling Collection	\$923,342	\$700,000	\$735,000	\$705,000	\$735,000	\$705,000	\$705,000
HHW and Special Collections	\$398,685	\$440,000	\$455,000	\$440,000	\$440,000	\$440,000	\$440,000
Education and Awareness	\$360,328	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000
Recycling Market Development	\$0	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000
Other (Plan Monitoring and Preparation, Litter Collection and Education, Well Testing, Misc.)	\$34,793	\$130,000	\$70,000	\$70,000	\$105,000	\$120,000	\$70,000
Open Dump/Litter Law Enforcement	\$403,904	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000
<b>Total Expenses</b>	<b>\$4,436,949</b>	<b>\$5,056,777</b>	<b>\$5,045,834</b>	<b>\$5,030,694</b>	<b>\$5,126,378</b>	<b>\$5,142,912</b>	<b>\$5,125,329</b>

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

Expense categories in Table 6-2 include the following:

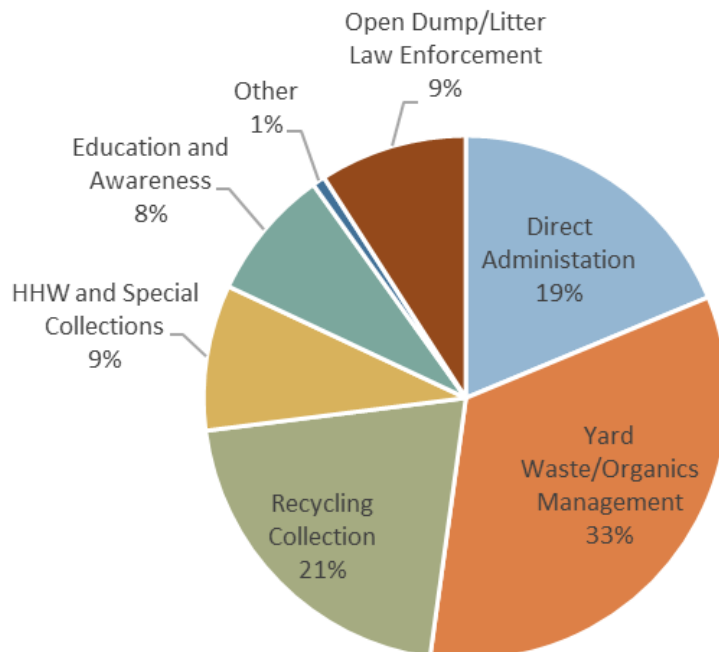
- **Direct Administration** – Represents expenditures for salaries and benefits of SWACO’s administrative program staff, office overhead (utilities, office space, computer software, etc.), support functions (HR, finance, legal) and other costs associated with travel, internships, memberships and subscriptions.
- **Yard Waste/Organics Management** – Represents yard waste and organics management program, which includes costs of maintaining service agreements with Ohio Mulch and Kurtz Brothers to accept yard waste from residents, businesses, and municipalities within the District. The amount also represents a portion of funds for conducting research on appropriate options for managing and supporting food waste initiatives.
- **Recycling Collection** – Includes expenditures for the Community Contract Assistance program, the Drop-Off program, multi-family housing unit recycling programs (to be implemented in 2017), business/institutional recycling programs (to be implemented in 2016), and the Industrial Sector Technical Assistance program (to be implemented in 2019).
- **HHW and Special Collections** – Reflects expenditures for the HHW collection program, and in 2019, costs for legal and consulting services to develop bid specifications for collection and processing of electronic waste.
- **Education and Awareness** – Expenses until 2015 reflect costs for contracted educational staff; beginning in 2016, budget reflects costs for annual District-wide

educational campaigns, which includes advertisement and promotion of recycling programs and services provided by contracted agencies. This expense also includes upgrades for website and informational materials, educational tours, as well as outreach and assistance to the general public, school systems, and city, village and township administrations.

- **Recycling Market Development** – Includes expenses for SWACO’s Community Waste Reduction Grant Program, the Event Waste Reduction Grant, the Market Development Grant (to be launched in 2018), and the City of Columbus Environmental Steward Office partnership grant.
- **Other** – Reflects expenditures for plan monitoring and preparation, litter collection and education, well testing, and the development of program studies/reports.
- **Open Dump/Litter Law Enforcement** – Includes funds budgeted for SWACO’s Environmental Crimes Task Force, which support the Franklin County Sheriff’s Office, Franklin County Public Health, City of Columbus, and the Office of the Franklin County Prosecutor. local law enforcement, and other costs related to enforcement of solid waste laws. The Environmental Crimes Task Force program will be evaluated on an annual basis throughout the planning period to determine performance levels and shared costs. Program scope, services and/or funding may change during the planning period based on annual evaluations.

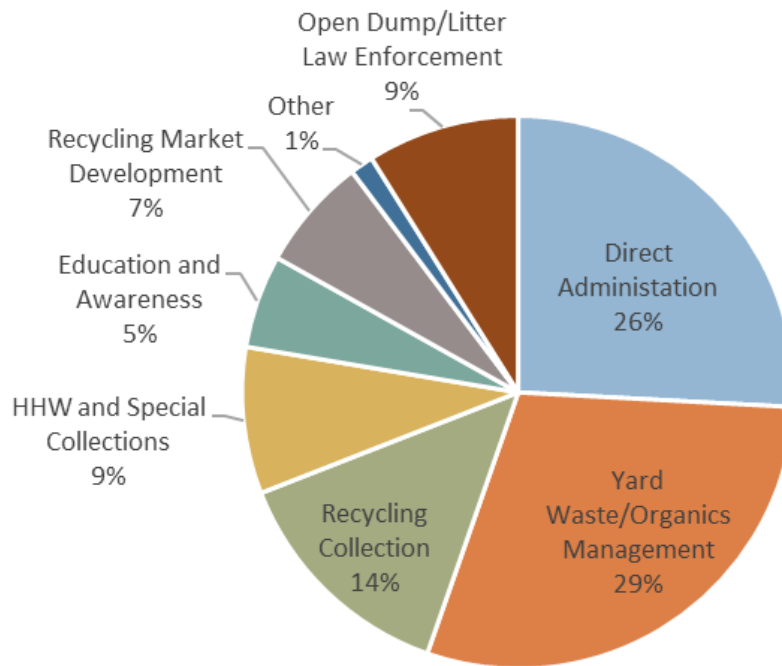
In 2014, the top three expense categories were yard waste/organics management (representing 33% of expenses), recycling collection (representing 21% of expenses), and direct administration (representing 19% of expenses).

**2014 Distribution of Expenses by Category**



Throughout the first five years of the planning period, the distribution of expenses among categories varies slightly. In 2023, the sixth year of the planning period, the top three expense categories remain the same, with yard waste/organics management representing 29% of expenses, direct administration representing 26% of expenses, and recycling collection representing 14% of expenses.

**2023 Distribution of Expenses by Category**



**D. Program Budget Summary**

Table 6-3 presents a summary of the budget for the reference year (2014) and the first 6 years of the planning period (2018-2023). This summary includes revenue, expenditures, net balance, and year-end fund balance. Revenue is projected to remain constant at \$5 million annually; expenses range from a low of \$4.4 million to a high of \$5.1 million. SWACO’s ending balance during the first 6 years of the planning period ranges from \$2.41 to \$2.88 million annually. At the end of the 15-year planning period, the carryover balance is projected to be \$1.28 million. Ample funding should be available to operate the programs outlined throughout this Plan.

Table 6-3. Budget Summary

Year	Revenue	Expenses	Net Difference	Ending Balance
<b>Reference Year</b>				
2014	\$5,089,406	\$4,436,949	\$652,457	\$1,602,678
<b>Planning Period</b>				
2018	\$5,000,000	\$5,056,777	(\$56,777)	\$2,883,949
2019	\$5,000,000	\$5,045,834	(\$45,834)	\$2,838,115
2020	\$5,000,000	\$5,030,694	(\$30,694)	\$2,807,421
2021	\$5,000,000	\$5,126,378	(\$126,378)	\$2,681,043
2022	\$5,000,000	\$5,142,912	(\$142,912)	\$2,538,131
2023	\$5,000,000	\$5,125,329	(\$125,329)	\$2,412,802
2024	\$5,000,000	\$5,125,329	(\$125,329)	\$2,287,473
2025	\$5,000,000	\$5,125,329	(\$125,329)	\$2,162,144
2026	\$5,000,000	\$5,125,329	(\$125,329)	\$2,036,815
2027	\$5,000,000	\$5,125,329	(\$125,329)	\$1,911,486
2028	\$5,000,000	\$5,125,329	(\$125,329)	\$1,786,157
2029	\$5,000,000	\$5,125,329	(\$125,329)	\$1,660,828
2030	\$5,000,000	\$5,125,329	(\$125,329)	\$1,535,499
2031	\$5,000,000	\$5,125,329	(\$125,329)	\$1,410,170
2032	\$5,000,000	\$5,125,329	(\$125,329)	\$1,284,841



# **APPENDIX A**

**REFERENCE YEAR, PLANNING PERIOD,  
GOAL STATEMENT, MATERIAL CHANGE  
IN CIRCUMSTANCES, EXPLANATIONS  
OF DIFFERENCES IN DATA**





## **APPENDIX A REFERENCE YEAR, PLANNING PERIOD, GOAL STATEMENT, MATERIAL CHANGE IN CIRCUMSTANCES, EXPLANATIONS OF DIFFERENCES IN DATA**

### **A. Reference Year**

The reference year for this solid waste management plan is 2014.

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

The planning period for this solid waste management plan is: 2018 to 2032.

### **C. Goal Statement**

The SWMD will achieve the following Goal(s): Goal 2. SWACO is committed to achieving Goal 2, however, the District intends to meet the requirements of Goal 1, as well.

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

In accordance with ORC 3734.56(D), the Plan must be revised if the Board has determined that “circumstances materially changed from those addressed in the approved initial or amended plan of the district.” A material change in circumstances shall be defined as a change that adversely affects the ability of the Board to: (1) assure waste disposal capacity during the planning period; (2) maintain compliance with applicable waste reduction or access goals; or (3) adequately finance implementation of the Plan. Although the Ohio EPA’s Plan Format does not require that the Plan Update include a description of the process the SWACO Board of Trustees will use to determine whether a material change in circumstances has occurred, the Format recommends that the Board develop such procedures which are explained below.

The Board of Trustees shall make the determination of whether a material change in circumstances has occurred according to the following guidelines:

#### **1. Assurance of Waste Disposal Capacity**

##### **a. Reduction in Available Capacity**

The designated facilities in this Plan Update are: the Franklin County Sanitary Landfill, the Morse Road Eco-Station, and the Jackson Pike Transfer Station. Additional facilities can be utilized by SWACO if the Board approves a waiver for the facility. If the Board determines that the extended or permanent closure of a designated facility or a combination of the closure of landfills accepting solid waste generated in the District

impairs the capacity assurance requirement of section 3734.53(A) of the Revised Code or the Plan Format, then a material change in circumstances may have occurred. A material change in circumstances has not occurred, however, if SWACO is able to secure arrangements to manage the waste formerly received at the closed facility.

The Board, within 30 days of the closure of a designated facility, at a regularly scheduled or special meeting, will determine whether alternate capacity is available to SWACO or whether a material change in circumstances has occurred.

**b. *Increase in Waste Generation***

Future capacity needs of the District, as outlined in the Plan, are based on waste generation estimates. A significant increase in solid waste generation within the District may affect capacity requirements and result in diminished capacity for handling or disposing of solid waste generated within the District. A material change in circumstances may have occurred if waste generation increases and the increase has a significant adverse impact on capacity for handling or disposing of solid waste generated within the District. A material change in circumstances will not occur, however, if SWACO can manage and/or identify alternate solid waste facilities to manage the increased waste volume.

During the term of the Plan, SWACO staff periodically will review waste generation data and report any increase in solid waste generation within the District that warrants the Board's consideration of whether there is adequate capacity available to handle or dispose of the increased solid waste volume.

**2. *Compliance with Applicable Waste Reduction or Access Goals***

**Delay in Program Implementation or Discontinuance of Essential Waste Reduction or Recycling Activities**

Pursuant to the Ohio Revised Code, the Ohio Administrative Code, and the State Plan, SWACO has established specific goals regarding waste reduction and recycling within the District. The Executive Director and Staff will review waste reduction and recycling activities on an annual basis to determine if delays in program implementation, changes to waste reduction and recycling strategies or other information that may materially and adversely affect Plan implementation are taking place. The Executive Director will provide a recommendation to the Board. The Board will determine whether any such delay, changes to waste reduction and recycling strategies or other information is material. Should a

significant delay in program implementation or the termination of programs result in the inability of SWACO to achieve State Plan goals, the Board will consider whether a material change in circumstances has occurred that requires an update of the Plan. A material change in circumstances will not be determined to have occurred, however, where the Board is able to implement new programs or modify existing programs to achieve the State Plan goals.

### **3. *Financing of Plan Implementation***

#### **Decrease in Waste Generation**

SWACO generates revenues to finance implementation of the Plan from a combination of: (i) a \$5.00 per ton fee on the generation of solid waste within the District as authorized by section 3734.573 of the Ohio Revised Code (the "Generation Fee"); (ii) a fee may also be applied to facilities that accept solid waste generated within the District pursuant to a waiver from designation ("Waiver Fee"); and (iii) tipping fees paid by customers that deliver solid waste to solid waste facilities owned or operated by SWACO approved by the Board pursuant to section 343.08(C) of the Revised Code ("Tipping Fees").

A significant reduction in the generation of waste within the District could result in a significant decrease in revenue and adversely affect the ability of the Board to finance the implementation of the Plan. The Accounting and Finance Manager for SWACO monitors revenues and reports changes in financial condition to the Audit Committee of the Board and at the monthly meeting of the Board. The Board will, based on recommendations from the Executive Director and Accounting and Finance Manager, review and revise the budgets and funding priorities to provide funds to implement the Plan. A material change in circumstances may occur when a significant reduction in revenue adversely affects the Board's ability to finance Plan implementation. No material change in circumstances will be deemed to have occurred, however, if the Board is able to maintain critical programs at current funding levels through re-allocation of SWACO revenues, or through an increase in Generation, Waiver or Tipping Fees.

### **4. *Procedures where Material Change in Circumstances has Occurred***

If, at any time, the Board determines that a material change in circumstances has occurred and an update to the Plan is necessary, the Board shall prepare a Draft Amended Plan. The Board shall proceed to adopt and obtain approval of the Amended Plan in accordance with divisions (A) to (C) of Section 3734.55 of the Ohio Revised Code.

SWACO monitors programs, waste volumes and revenues as necessary to determine whether there has been a material change in circumstances requiring

an update of the Plan. If SWACO determines a material change in circumstances has occurred, the Board shall notify Ohio EPA within 60 days of that determination.

**E. Explanations of differences between data previously reported and data used in the Plan**

- 1.** Differences in quantities of materials recovered as stated in the Annual District Report (ADR) and the solid waste management plan.

SWACO has conducted additional surveys and collection of data from businesses and communities since the submission of the 2014 ADR. This additional information has been combined with ADR data and forms the basis for the information presented in this Plan.

- 2.** Differences in financial information reported in quarterly fee reports and the financial data used in the Plan.

This Plan provides the financial information that has been reported in the quarterly fee reports. Any adjustments to financial data that takes place in the Financial Section of the Plan will be identified in that Section.



# APPENDIX B

## RECYCLING INFRASTRUCTURE INVENTORY



## APPENDIX B RECYCLING INFRASTRUCTURE INVENTORY

This Appendix provides a review of the recycling infrastructure available in the reference year (2014), which includes curbside recycling programs, recycling drop-off sites, collection service providers and compost facilities/activities.

### A. Inventory of Residential Recycling Infrastructure Available in the Reference Year

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

ID #	Community	Type <sup>(1)</sup>		Provided by:	Pick-Up	Materials Collected <sup>(2)</sup>	Type of Collection	PAYT <sup>(3)</sup>	Tons
		NS	S					✓	
NSC1	City of Bexley	✓		Contract between City and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		1,322
NSC2	Blendon Township	✓		Contract between City and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		336
NSC3	Village of Brice	✓		Contract between City and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		5
NSC4	Clinton Township	✓		Contract between Township and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		159
NSC5	City of Columbus	✓		Contract between City and Rumpke	Biweekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		33,983
NSC6	City of Dublin	✓		Contract between City and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		5,165
NSC7	City of Gahanna	✓		Contract between City and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		2,568
NSC8	City of Grandview Heights	✓		City collection crew	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Semi-Automated		882

ID #	Community	Type <sup>(1)</sup>		Provided by:	Pick-Up	Materials Collected <sup>(2)</sup>	Type of Collection	PAYT <sup>(3)</sup>	Tons
		NS	S					✓	
NSC9	Village of Marble Cliff	✓		City of Grandview Heights collection crew	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Semi-Automated		See NSC8
NSC10	City of Grove City	✓		Contract between City and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		2,106
NSC11	Jackson Township	✓		Contract between City and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		See NSC10
NSC12	City of Groveport	✓		Contract between City and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		225
NSC13	City of Hilliard	✓		Contract between City and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		2,589
NSC14	Jefferson Township	✓		Contract between City and WM	Biweekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated		648
NSC15	Madison Township	✓		Contract between Township and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		438
NSC16	Village of New Albany	✓		Contract between Village and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		1,048
NSC17	Norwich Township	✓		Contract between Township and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		308
NSC18	Perry Township	✓		Contract between Township and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		99

ID #	Community	Type <sup>(1)</sup>		Provided by:	Pick-Up	Materials Collected <sup>(2)</sup>	Type of Collection	PAYT <sup>(3)</sup>	Tons
		NS	S					✓	
NSC19	Plain Township	✓		Contract between Township and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		243
NSC20	Pleasant Township	✓		Contract between Township and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		263
NSC21	City of Reynoldsburg	✓		Contract between City and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		2,010
NSC22	Village of Riverlea	✓		Contract between Village and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		78
NSC23	Truro Township	✓		Contract between Township and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		13
NSC24	City of Upper Arlington	✓		Contract between City and Republic	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc	Single Stream, DNR	✓	4,608
NSC25	Village of Urbancrest	✓		Contract between City and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		25
NSC26	Washington Township	✓		Contract between Township and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		270
NSC27	City of Westerville	✓		Contract between City and Rumpke	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		3,137
NSC28	City of Whitehall	✓		Contract between City and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		544



ID #	Community	Type <sup>(1)</sup>		Provided by:	Pick-Up	Materials Collected <sup>(2)</sup>	Type of Collection	PAYT <sup>(3)</sup>	Tons
		NS	S					✓	
NSC29	City of Worthington	✓		Contract between City and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		1,615
NSC30	Village of Minerva Park	✓		Contract between Village and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		40
NSC31	Franklin Township	✓		Contract between Township and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		189
NSC32	Village of Valleyview	✓		Contract between Village and Local Waste	Weekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Manual		23
NSC33	Mifflin Township (2015)	✓		Contract between Township and Rumpke	Biweekly	Mg, Mp, N, Cc, As, Gl, Pl (#1-#7), Al, Sc, Ph	Single Stream, Automated and Manual		0
<b>Totals</b>									64,937

**Notes:**

<sup>1</sup> NS = Non-Subscription, S = Subscription

<sup>2</sup>Mg = Magazines, Mp = Mixed Paper, N = Newspaper, Cc = Corrugated Cardboard, As = Aseptic Containers, Gl = Glass Bottles, Pl = Plastic Bottles and Jugs, Al = Aluminum Cans, Sc = Steel Cans, Ph = Phone Books

<sup>3</sup>PAYT = Pay-As-You-Throw

Tonnage reported in Table B-1 reflects the most accurate information available, which was reported by cities, villages, townships, and haulers. Minerva Park, NSC30, switched haulers in October of 2014. Tonnage for January to October was not available and is therefore omitted from the table.

The City of Hilliard, NSC13, is listed as being in a contract with Local Waste. In 2014, the City was in a contract with Rumpke until June 30, 2014; the City’s contract with Local Waste began July 1, 2014.

The only Pay-As-You-Throw (PAYT) program in SWACO’s jurisdiction during 2014 operated in the City of Upper Arlington. Since 1992, the City has utilized a solid waste sticker program, whereby all households (including single family homes, apartments and condominiums) are required to purchase solid waste stickers on each bag of refuse and yard waste for pick-up for an annual service fee of \$40. In addition to the annual fee, residents must use solid waste stickers on each bag of refuse and yard waste. Recycling

materials are collected at no additional charge. Solid waste stickers cost \$2.90 and may be purchased at the following locations:

- CVS Pharmacy at Five Points and 5th Avenue
- Finance & Administrative Services Department, Municipal Services Center, 3600 Tremont Road
- GetGo Gas Station at Five Points
- Huffman's Market, Tremont Center
- Giant Eagles Stores at 3rd Avenue, Kingsdale Center, and Sawmill Road
- Kroger Stores at Bethel Road, Chambers Road and Henderson Road
- Marc’s on Henderson Road
- Nutter Hardware at Kingsdale
- Whole Foods, Shops at Lane Avenue

Solid waste must be placed in plastic bags, refuse cans, or tied into bundles. Containers cannot exceed 50 pounds in weight or 35 gallons in capacity. Bundles cannot exceed five feet in length or 50 pounds in weight.

Yard waste must be placed in approved biodegradable yard waste bags, bundles, or refuse cans. Containers cannot exceed 50 pounds in weight or 35 gallons in capacity. Bundles cannot exceed five feet in length or 50 pounds in weight and must be tied with biodegradable string. Residents may drop-off acceptable yard wastes free of charge at the Bill Holbrook Regional Composting Facility, which is operated by Ohio Mulch and located at 4120 Roberts Road. This opportunity is available at no cost to residents due to an agreement between SWACO and Ohio Mulch. SWACO maintains a similar agreement with Kurtz Brothers.

The following table summarizes the number of curbside recycling programs and the tons recycled by the programs:

**Table B-1b. Total Number of Curbside Programs and Total Quantity**

Total # of Non-Subscription Curbside Programs	Total # of Non-Subscription Curbside Programs	Total # of Subscription Curbside Programs	Total Tons from all Curbside Programs
Franklin	33	0	64,937

Approximately 64,937 tons of materials were recycled by 33 non-subscription curbside recycling programs in 2014.

Table B-2. Inventory of Drop-off Sites Available in the Reference Year

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
FTU1	Canal Winchester Kroger Store 6095 Gender Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	9,523
FTU2	Canal Winchester WM Recycling Center 1006 Walnut St.	✓					WM	24 hours, 7 days a week	Mg, Mp, N, Cc, As, PI (#1-#7), Al, Sc, Ph	Yes	DNR
FTU3	Canal Winchester Stradley Park 30 S. High St.	✓					WM	24 hours, 7 days a week	Mg, Mp, N, Cc, As, PI (#1-#7), Al, Sc, Ph	Yes	DNR
FTU4	Columbus Indianola Plaza 3600 Indianola Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU5	Columbus Fire Station 5433 Fisher Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU6	Columbus 14-0 Carryout 320 E. Hudson St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU7	Columbus Beta Theta Pi 165 E. 15th Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU8	Columbus Columbus Schools Main Office 270 E. State St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU9	Columbus Fire Station 211 McNaughten Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU10	Columbus Fire Station 2193 Frank Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
<b>FTU11</b>	Columbus Fire Station 3069 Parsons Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU12</b>	Columbus Fire Station 3240 McCutcheon Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU13</b>	Columbus Fire Station 3555 Fishinger Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU14</b>	Columbus Fire Station 3675 Gender Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU15</b>	Columbus Fire Station 4100 Sullivant Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU16</b>	Columbus Fire Station 440 Lazelle Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU17</b>	Columbus Fire Station 5151 Little Turtle Way	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU18</b>	Columbus Fire Station 5305 Alkire Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU19</b>	Columbus Fire Station 7560 Smokey Row Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU20</b>	Columbus Fox and Hounds 1075 Weybridge Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU21</b>	Columbus Godman Guild 303 East 6th Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
FTU22	Columbus Goodale Park 120 W. Goodale Blvd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU23	Columbus Kings Art Center 867 Mt Vernon Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU24	Columbus Kroger Store 1375 Chambers Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU25	Columbus Kroger Store 150 West Sycamore & Front St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU26	Columbus Kroger Store 1630 Morse Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU27	Columbus Kroger Store 3637 S. High St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU28	Columbus Kroger Store 3675 E. Broad St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU29	Columbus Kroger Store 850 S. Hamilton Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU30	Columbus Lemans Village 5026 Dieker Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU31	Columbus Home Depot 5200 N. Hamilton Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU32	Columbus Newman Center 64 W. Lane Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
<b>FTU33</b>	Columbus Parliament Ridge 4388 Walford St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU34</b>	Columbus Recreation Center 276 S. Nelson Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU35</b>	Columbus Recreation Center 1184 Barnett Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU36</b>	Columbus Recreation Center 1254 Briarwood Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU37</b>	Columbus Recreation Center 1826 Lattimer Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU38</b>	Columbus Recreation Center 240 W. Oakland Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU39</b>	Columbus Recreation Center 2801 Lockbourne Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU40</b>	Columbus Recreation Center 455 S. Westgate Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU41</b>	Columbus Recreation Center 4900 Olentangy River Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU42</b>	Columbus Northcrest Park Reed Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU43</b>	Columbus Recreation Center Whestone Park 3923 N. High St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
<b>FTU44</b>	Columbus Runaway Bay 1480 Runaway Bay Dr.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU45</b>	Columbus Wood Lake Village 3535 Hunting Brook Dr.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU46</b>	Dublin Home Depot 5959 Sawmill Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU47</b>	Galloway/Prairie Twp. Batelle Darby Creek 1775 Darby Creek Dr.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU48</b>	Grove City Municipal Bldg. 4035 Broadway	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU49</b>	Grove City Phoenix Golf Links 3413 Jackson Pike	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU50</b>	Grove City, Service Department - 3262 Ventura Blvd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU51</b>	Grove City Urbancrest YMCA3500 1st Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU52</b>	Grove City Walmart 1693 Stringtown Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU53</b>	Grove City Walmart Dist. Ctr. 3880 SW Blvd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU54</b>	Groveport Three Creeks Metro Park 3860 Bixby Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1



ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
FTU55	Hilliard Kroger Store 2525 Rome-Hilliard Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU56	Lewis Center Highbanks Metro Park 9466 Columbus Pike	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU57	New Albany K-1 School Swickard Woods Blvd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU58	Pleasant Twp. 5373 Norton Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU59	Prairie Twp. Fire Department 123 Inah Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU60	Prairie Twp. Fire Department 451 Hubbard Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU61	Prairie Twp. Prairie Twp. Hall 23 Maple Dr.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU62	Reynoldsburg Blacklick Woods Metro Park 6975 E. Livingston Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU63	Westerville Blendon Woods Metro Park 4265 West Dublin-Granville Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
FTU64	Westerville Sharon Woods Metro Park 6911 S. Cleveland Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1



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		Urban		Rural		O					
		FT	PT	FT	PT						
<b>FTU65</b>	Worthington N. Recreation Center 374 Highland Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU66</b>	Mifflin Twp. 2459 Agler Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU67</b>	Plain Twp. Fire Station 9500 Johnstown Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU68</b>	Westerville St. Paul Church 313 N. State St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU69</b>	Worthington 12 W. New England Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU70</b>	Worthington 48 E. New England Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU71</b>	Columbus Park Maint., 1533 Alum Industrial Dr. W	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU72</b>	Columbus Audubon Center 505 W. Whittier St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU73</b>	Columbus Fire Station #17 2300 W. Broad St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU74</b>	Columbus Charity Newsies 4300 Indianola Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU75</b>	Whole Foods (Rear) 3670 W. Dublin-Granville Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1

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		Urban		Rural		O					
		FT	PT	FT	PT						
<b>FTU76</b>	Columbus MEPS 775 Taylor Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU77</b>	Columbus St. Stephens 1500 E. 17th Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU78</b>	Columbus COAAA 174 E. Long St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU79</b>	Columbus Junior Achievement 68 E. 2nd Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU80</b>	Columbus Columbus Dog Connection 2761 Johnstown Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU81</b>	Columbus CNG Filling Station 2727 Brice Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU82</b>	Columbus SYC 93 W. Weisheimer Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU83</b>	Columbus Stonebrook Condos 3132 Dublin Rd.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU84</b>	Columbus Broad Brunson Condos 1799 E. Long St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU85</b>	Columbus Dublin Green Meadow Creek Dr.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU86</b>	Columbus Waggoner Condos 8337 Glabra Dr.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1

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		Urban		Rural		O					
		FT	PT	FT	PT						
<b>FTU87</b>	Columbus Walden Woods Condos 3095 Griggsvieview Ct.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU88</b>	Columbus Market Mohawk Apts. 399 S. Grant Ave.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTU89</b>	Columbus Washington Place Apts. 518 E. Town St.	✓					Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTR1</b>	Brown Twp. 2491 Walker Rd.			✓			Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTR2</b>	Hamilton Twp. Corner of Lockbourne Rd. & 317			✓			Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTR3</b>	Hamilton Twp. Hamilton Twp. Park 5333 Lockbourne Rd.			✓			Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTR4</b>	Jackson Twp. 2620 London Groveport Rd.			✓			Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTR5</b>	Lockbourne Lockbourne Post Office 1 Mechanic St.			✓			Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>FTR6</b>	Plain Twp. 4585 Reynoldsburg New Albany Rd.			✓			Contract between SWACO & Rumpke	24 hours, 7 days a week	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	Yes	See tonnage listed for FTU1
<b>PTU1</b>	Columbus 17th Ave Facility 889 E. 17th Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU2</b>	Columbus Academic Acceleration 1990 Jefferson Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

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		Urban		Rural		O					
		FT	PT	FT	PT						
PTU3	Columbus Africentric School 300 E. Livingston Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU4	Columbus AG Bell School 1455 Huy Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU5	Columbus Alpine Elementary School 1590 Alpine Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU6	Columbus Avalon Elementary School 5200 Avalon Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU7	Columbus Avondale Elementary 141 Hawkes Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU8	Columbus Beatty Park Elementary 519 Trevitt		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU9	Columbus Beechcroft High School 6100 Beechcroft Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU10	Columbus Berwick Elementary School 2595 Scottwood Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU11	Columbus Binns Elementary School 1080 Binns Blvd		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU12	Columbus Briggs High School 2555 Briggs Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

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		Urban		Rural		O					
		FT	PT	FT	PT						
PTU13	Columbus Broadleigh Elementary School 3039 Maryland Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU14	Columbus Buckeye Middle School 2950 S. Parsons Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU15	Columbus Burroughs Elementary School 551 S. Richardson Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU16	ColumbusCassady Elementary School 2500 N. Cassady Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU17	Columbus Cedarwood Elementary School 3350 S. Champion Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU18	Columbus Centennial High School 1441 Bethel Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU19	Columbus Champion Middle School 284 N. 22nd St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU20	Columbus Clinton Heights 10 Clinton Heights Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU21	Columbus Columbus Downtown High 364 S. 4th St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

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		Urban		Rural		O					
		FT	PT	FT	PT						
PTU22	Columbus Colerain Elementary School 499 E. Weisheimer Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU23	Columbus Columbus Scioto 2951 S. High St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU24	Columbus Columbus Spanish Immersion 2155 Fenton St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU25	Columbus Columbus Alternative High School 2632 McGuffey Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU26	Columbus Columbus City Prep Boys 417 S. Weyant Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU27	Columbus Columbus City Prep Girls 1390 Bryden Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU28	Columbus Como Elementary School 2989 Reis Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU29	Columbus Cranbrook Elementary School 908 Bricker Blvd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU30	Columbus Devonshire Elementary School 6286 Ambleside Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU31	Columbus Dominion Middle School 330 E. Dominion Blvd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

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		FT	PT	FT	PT						
PTU32	Columbus Duxberry Middle School 1779 E. Maynard Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU33	Columbus Eakin Elementary School 3774 Eakin Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU34	Columbus East Columbus Elementary School 3100 E. 7th Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU35	Columbus East High 1500 E. Broad St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU36	Columbus East Linden Elementary School 2505 Brentnell		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU37	Columbus Eastgate Elementary School 1925 Stratford Way		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU38	Columbus Easthaven Elementary School 2360 Garnet Pl.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU39	Columbus Eastmoor Middle School 3450 Medway Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU40	Columbus Fairmoor Elementary School 3281 Mayfair Park Pl.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU41	Columbus Fairwood Elementary School 726 Fairwood Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1



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		FT	PT	FT	PT						
PTU42	Columbus Fifth Ave. Elementary School 104 W. Hubbard		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU43	Columbus Food Production Center 450 E. Fulton St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU44	Columbus Forest Park Elementary School 5535 Sandalwood Blvd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU45	Columbus Fort Hayes Complex Jack Gibbs Blvd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU46	Columbus Gables Elementary School 1680 Becket Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU47	Columbus Georgian Heights Elementary School 3771 Eakin Rd		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU48	Columbus Hamilton Elementary School 2047 Hamilton Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU49	Columbus Highland Elementary School 40 S. Highland Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU50	Columbus Hilltonia Middle School 2345 W. Mound St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU51	Columbus Hudson Elementary School 2323 Lexington Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1



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		Urban		Rural		O					
		FT	PT	FT	PT						
PTU52	Columbus Hudson Warehouse 737 E. Hudson		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU53	Columbus Independence High School 5175 Refugee Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU54	Columbus Indian Springs Elementary School 50 E. Henderson		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU55	Columbus Yorktown Middle School 5600 E. Livingston Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU56	Columbus Indianola K-8251 E. Weber Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU57	Columbus Innis Elementary School 3399 Kohr Blvd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU58	Columbus International School 100 E. Arcadia Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU59	Columbus Johnson Park Elementary 1130 S. Waverly St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU60	Columbus Kingswood Data Center 1091 King Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU61	Columbus Leawood Elementary School 1677 S. Hamilton Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
PTU62	Columbus Liberty Elementary School 2949 Whitlow Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU63	Columbus Lincoln Park Elementary School 579 E. Markison Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU64	Columbus Lindbergh Elementary School 2541 Lindbergh Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU65	Columbus Linden Elementary School 2626 Cleveland Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU66	Columbus Linden McKinley High School 1320 Duxberry Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU67	Columbus Livingston Elementary School 825 E. Livingston Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU68	Columbus Maize Elementary School 4360 Maize Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU69	Columbus Marion Franklin High School 1265 Koebel Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU70	Columbus Medina Middle School 1425 Huy Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU71	Columbus Mifflin High School 3245 Oak Spring St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
PTU72	Columbus Mifflin Middle School 3000 Agler Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU73	Columbus Moler/ Heyl Elementary 1201 Moler Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU74	Columbus Morse Rd. Bus Compound 4100 Appian Way Blvd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU75	Columbus North Linden Elementary School 1718 E. Cooke Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU76	Columbus Northgate Elementary 6655 Sharon Woods		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU77	Columbus Northland High School 1919 Northcliff Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU78	Columbus Northtowne Elementary School 4767 Northtowne Blvd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU79	Columbus Oakland Park Elementary School 3392 Atwood Terrace		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU80	Columbus Oakmont Elementary School 5666 Oakmont Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
PTU81	Columbus Ohio Elementary School 505 S. Ohio Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU82	Columbus Olde Orchard Elementary School 800 McNaughton Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU83	Columbus Parkmoor Elementary School 1711 Penworth Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU84	Columbus Parsons Elementary School 3231 Lee Ellen Pl.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU85	Columbus Ridgeview Middle School 4241 Rudy Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU86	Columbus Salem Elementary School 1040 Garvey Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU87	Columbus Frebis Bus Compound 1799 Frebis Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU88	Columbus Scottwood Elementary School 3392 Scottwood Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU89	Columbus Shady Lane Elementary School 1444 Shady Lane Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU90	Columbus Shepard Center 873 Walcutt Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
PTU91	Columbus Sherwood Middle School 1400 Shady Lane Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU92	Columbus Siebert Elementary School 385 Reinhard Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU93	Columbus South High School 1160 Ann St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU94	Columbus South Mifflin Elementary School 2365 Middlehurst Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU95	Columbus Southwood Elementary School 1500 S. 4th St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU96	Columbus Starling Middle School 120 S. Central Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU97	Columbus Stewart Elementary School 387 E. Beck St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU98	Columbus Sullivant Elementary School 791 Griggs Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU99	Columbus Valleyforge Elementary School 1321 Urban Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
PTU100	Columbus Valleyview Elementary School 2989 Valleyview Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
<b>PTU101</b>	Columbus Walnut Ridge High School 4841 E. Livingston Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU102</b>	Columbus Watkins Elementary 1486 Watkins Road		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU103</b>	Columbus Wedgewood M School 3800 Briggs Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU104</b>	Columbus Weiland Park Elementary School 211 E. Seventh Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU105</b>	Columbus West Broad Elementary School 2744 W. Broad St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU106</b>	Columbus West High School 179 S. Powell Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU107</b>	Columbus West Mound Elementary School 2051 W. Mound St.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU108</b>	Columbus Westgate Elementary School 3080 Wicklow Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU109</b>	Columbus Westmoor Middle School 3001 Valleyview Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU110</b>	Columbus Whetstone High School 4405 Scenic Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
<b>PTU111</b>	Columbus Windsor Elementary School 1219 E. 12th Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU112</b>	Columbus Winterset Elementary School 4776 Winterset Dr.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU113</b>	Columbus Woodcrest Elementary School 5321 E. Livingston Ave.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>PTU114</b>	Columbus Woodward Park Middle School 5151 Karl Rd.		✓				Contract between SWACO & Rumpke	N/A - School use only	Mg, Mp, N, Cc, As, Gl, PI (#1-#7), Al, Sc, Ph	No	See tonnage listed for FTU1
<b>ODO1</b>	Columbus Furniture Bank of Central Ohio 118 South Yale Ave.					✓	Non-profit	8:30AM-4:30PM Mon-Fri	F	No	DNR
<b>ODO2</b>	Dublin Best Buy 5800 Britton Pkwy.					✓	Private business	Business hours	EW, BR, WG, O	No	DNR
<b>ODO3</b>	Grove City Best Buy 1632 Stringtown Rd.					✓	Private business	Business hours	EW, BR, WG, O	No	DNR
<b>ODO4</b>	Reynoldsburg Best Buy 2782 Taylor Rd.					✓	Private business	Business hours	EW, BR, WG, O	No	DNR
<b>ODO5</b>	Columbus Best Buy 3840 Morse Rd.					✓	Private business	Business hours	EW, BR, WG, O	No	DNR
<b>ODO6</b>	Columbus Habitat for Humanity Restore 3140 Westerville Rd.					✓	Non-profit	9AM-6PM Mon-Sat	EW, WG, O	No	N/A*
<b>ODO7</b>	Columbus Habitat for Humanity Restore 240 N. Wilson Rd.					✓	Non-profit	9AM-6PM Mon-Sat	EW, WG, O	No	N/A*

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
<b>ODO8</b>	Columbus King Business Interiors 6155 Huntley Rd. Ste D					✓	Private business	8AM-5PM Mon-Fri	Gently used office furniture	No	DNR
<b>ODO9</b>	Clintonville Batteries Plus Bulbs 5010 N. High St					✓	Private business	Business hours	Bulbs and Batteries: Pb, NiCd, NiMH, Li Ion, Li Poly	No	N/A*
<b>ODO10</b>	Hilliard Batteries Plus Bulbs 4514 Cemetery Rd.					✓	Private business	Business hours	Bulbs and Batteries: Pb, NiCd, NiMH, Li Ion, Li Poly	No	N/A*
<b>ODO11</b>	Grove City Batteries Plus Bulbs 2251 Stringtown Rd.					✓	Private business	Business hours	Bulbs and Batteries: Pb, NiCd, NiMH, Li Ion, Li Poly	No	N/A*
<b>ODO12</b>	Reynoldsburg Batteries Plus Bulbs 5960 Scarborough Blvd.					✓	Private business	Business hours	Bulbs and Batteries: Pb, NiCd, NiMH, Li Ion, Li Poly	No	N/A*
<b>ODO13</b>	Gahanna Batteries Plus Bulbs 4681 Morse Rd.					✓	Private business	Business hours	Bulbs and Batteries: Pb, NiCd, NiMH, Li Ion, Li Poly	No	N/A*
<b>ODO14</b>	Grove City Liberty Tire 3041 Jackson Pike					✓	Private business	Business hours	T	No	N/A*
<b>ODO15</b>	Columbus Mark Gray Enterprises 464 N. Highland Ave.					✓	Private business	8AM-5PM Mon-Fri, 8AM-3:30PM Sat	FM, NFM, WG (with Freon)	No	N/A*
<b>ODO16</b>	Columbus PSC Metals (Joyce) 1283 Joyce Ave.					✓	Private business	8AM-5PM Mon-Fri, 8AM-12PM Sat	FM, NFM, WG (with Freon)	No	N/A*



ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
<b>ODO17</b>	Columbus PSC Metals (Parsons) 2205 Parsons Ave.					✓	Private business	8AM-5PM Mon-Fri, 8AM-12PM Sat	FM, NFM, WG (with Freon)	No	N/A*
<b>ODO18</b>	Better World Books (20 Franklin Co. locations)					✓	Non-profit	24 hours, 7 days a week	B	No	DNR
<b>ODO19</b>	Goodwill Donation Centers (20 Franklin Co. locations)					✓	Non-profit	Varies by location	EW, WG, B, F, O	No	N/A*
<b>ODO20</b>	Community Computer Alliance (11 Franklin Co. locations)					✓	Non-profit	Varies by location	EW, WG, O, Batteries	No	DNR
<b>ODO21</b>	Columbus Auto Shredding					✓	Private business	9AM-5PM Mon-Sat	FM, NFM		N/A*
<b>ODO22</b>	SmartRecycle.Com (50 Franklin Co. locations)					✓	Private business	Varies by location	Cell phones, ink cartridges	No	DNR
<b>ODO23</b>	Cartridge World (5 Franklin Co. locations)					✓	Private business	9AM-6PM Mon-Thurs, 9AM-5PM Fri, 9AM-2PM Sat	ink cartridges	No	DNR
<b>ODO24</b>	Planet Aid (100+ Franklin Co. locations)					✓	Non-profit	24 hours, 7 days a week	Clothing	No	N/A*
<b>ODO25</b>	Columbus ODRC Central Office 770 W. Broad St.					✓	Public agency	8:30AM-3:30PM; Must schedule: 614-752-1719	Fabric, sewing supplies	No	N/A*
<b>ODO26</b>	Columbus Southeastern Data 4300 Janitrol Rd.					✓	Private business	8AM-5PM Mon-Fri	EW	No	DNR
<b>ODO27</b>	Columbus Accurate IT Services 3854 Fisher Rd.					✓	Private business	9AM-5PM Mon-Fri	EW	No	N/A*

ID#	Name of Drop-off Site	Type					Provided by:	Open to Public	Materials Accepted <sup>(1)</sup>	Access Credit	Tons Collected from SWACO
		Urban		Rural		O					
		FT	PT	FT	PT						
ODO28	Columbus American Asset Recovery 672 Harrison Dr.					✓	Private business	9AM-5PM Mon-Fri	EW	No	N/A*
ODO29	Grove City Cinco Electronics Recycling 2235 Southwest Blvd. Bldg. A					✓	9AM-5PM Mon-Fri	8AM-5PM Mon-Fri	EW	No	DNR
ODO30	Dublin Johnson Technology Group LLC 6500 Emerald Pkwy, Ste.100					✓	8AM-5PM Mon-Fri	8AM-5PM Mon-Fri	EW	No	DNR
ODO31	Whitehall Metropolitan Community Services-T.O.U.C.H. 37 Robinwood Ave.					✓	9:30AM-4PM Mon-Fri, 11AM-2PM Sat	9:30AM-4PM Mon-Fri, 11AM-2PM Sat	EW	No	N/A*
ODO32	Columbus Southeastern Data 4300 Janitrol Rd.					✓	8AM-5PM Mon-Fri	8AM-5PM Mon-Fri	EW	No	DNR

**Notes:**

\*Total tons received by each business is not reported in this table to maintain the privacy of survey participants. Tonnage information for businesses that accepted recycling from residential and commercial sector generators is available in Appendix E.

<sup>1</sup>Mg = Magazines, Mp = Mixed Paper, N = Newspaper, Cc = Corrugated Cardboard, As = Aseptic Containers, Gl = Glass Bottles, Pl = Plastic Bottles and Jugs, Al = Aluminum Cans, Sc = Steel Cans, Ph = Phone Books, EW = Electronic Waste, FM = Ferrous Metal, NFM = Non-Ferrous Metal, WG = White Goods/Appliances, O = Other, B = Books, BR = Batteries (Rechargeable), F = Furniture

FT = Full-Time, PT = Part-Time, DNR = Did Not Report

Some recycling drop-off locations were relocated or closed during 2014. FTU16 was temporarily moved to Lazelle Woods Park due to construction at the original site in 2014. Additionally, FTU24, FTU26, FTU27, FTU28, and FTU52 operated for a portion of 2014 but were permanently removed before 2015 at the request of the hosts.

SWACO provides recycling dumpsters and recycling collection service (through a contract with Rumpke) to Columbus City Schools; these locations (PTU1 to PTU114) are available to the public during school operating hours.

The following table summarizes the number of drop-offs and the total tons recycled:

**Table B-2b. Total Number of Drop-offs by Type and Total Quantity Collected**

County	Total # of FT, Urban	Total # of PT, Urban	Total # of FT, Rural	Total # of PT, Rural	Total # of "Other"	Total Weight of Materials Collected
Franklin	89	114	6	0	32	9,523

**Notes:**

FT = Full-Time, PT = Part-Time

Approximately 9,523 tons of materials were recycled by 89 full-time urban drop-offs, 6 full-time rural drop-offs, and 114 part-time urban drop-offs. An additional 32 sites hosted by non-profit organizations and private businesses (ODO1 to ODO32) accepted a limited range of materials for recycling. Tonnage reported by non-profits and businesses that accepted recycling was not included in this table but is included in Appendix E.

**Table B-3. Mixed Municipal Solid Waste Material Recovery Facility**

Name of Facility	Location	Communities Served	Types of Materials Recovered	Tons of Materials Recovered	Waste Processed	Bypass Waste	Total Waste	Recovery Rate in 2014
None							0	0

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

Name of Provider	County Served	Trash Collection Service				Recycling Collection Service		
		PAYT	RES	COM	IND	RES	COM	IND
A1 Dumpster & Hauling Inc.	Franklin			✓	✓			
AAA Affordable Hauling	Franklin			✓	✓			
BBU Services, Inc.	Franklin				✓			
Builders Trash Service	Franklin			✓				
Capitol Waste & Recycling Services	Franklin			✓	✓		✓	✓
City of Columbus Dept. of Public Service, Division of Refuse Collection	Franklin		✓					
College Hunks Hauling Junk	Franklin		✓	✓				
Cumberlander Refuse LLC	Franklin		✓	✓	✓			
Dan's Hauling Service	Franklin			✓	✓			

Name of Provider	County Served	Trash Collection Service				Recycling Collection Service		
		PAYT	RES	COM	IND	RES	COM	IND
Environmental Management Specialists	Franklin				✓			
Farmer's Refuse & Trucking Inc	Franklin			✓	✓		✓	✓
Frog Hauling LLC	Franklin			✓			✓	
Garrison Co. Hauling	Franklin			✓	✓			
Global Container Service Inc.	Franklin			✓			✓	
Grandview Heights	Franklin		✓			✓		
Hamilton Alliance Inc.	Franklin			✓			✓	
Ink's Hauling	Franklin			✓	✓			
Junk King	Franklin			✓	✓		✓	✓
Lemco (dba Wee Haul)	Franklin			✓	✓			
Local Waste	Franklin		✓	✓	✓	✓	✓	✓
Mid-Ohio Sanitation & Recycling	Franklin			✓	✓			
No Better Kontainer Services	Franklin			✓	✓			
OSU Facilities Operations	Franklin			✓			✓	
Purcell Hauling	Franklin			✓	✓			
Republic	Franklin		✓	✓	✓	✓	✓	✓
Rumpke	Franklin		✓	✓	✓	✓	✓	✓
Srose Enterprises LTD (dba 1-800-GOT-JUNK)	Franklin			✓	✓		✓	✓
Trace's Sanitation LLC	Franklin			✓	✓			
Waste Management	Franklin	✓	✓	✓	✓	✓	✓	✓

**Notes:**

PAYT = Pay-As-You-Throw, RES = Residential, COM = Commercial, IND = Industrial

The list of haulers was obtained through surveys and scale house records from SWACO's landfill and transfer stations. The following were excluded from Table B-4:

- Private construction, plumbing, and other companies that haul their own waste but do not provide collection services to residents, businesses, or industries.
- Public sector entities that delivered waste to disposal facilities from community clean-ups but do not provide regular collection services.
- Haulers that specialize in Construction and Demolition Debris (C&DD) removal.

The City of Columbus is listed as providing only residential solid waste collection. In addition to collecting refuse from single-family housing units, the City also collects waste from multi-family housing units, which are typically considered "commercial customers." To reflect the true nature of these customers, only "residential refuse collection" was

checked because the City does not provide refuse collection services to other commercial establishments.

Other haulers that service residential customers via dumpster/roll-off rental were categorized as commercial if they did not also provide bin/bag collection.

**Table B-5. Inventory of Composting/Yard Waste Management Activities Available in the Reference Year**

ID#	Facility Name	Class	Open to Public	Location	Waste Received from SWACO	
					Food Waste	Yard Waste
<b>Compost Facilities</b>						
YW1	Garick Corp. Paygro Division	II		11000 Hungtington Rd. S. Charleston, OH	657	15
YW2	Price Farm Organics	II	✓	4838 Warrensburg Rd. Delaware, OH	101	202
YW3	McCullough's Landscaping	IV		14401 Jug Street Rd. NW Johnstown, OH	0	350
YW4	Ohio Mulch Supply	II	✓	883 US Hwy 42N Delaware, OH	1,450	0
YW5	Park Enterprise Construction Co Inc	II	✓	560 Barks Rd. W Marion, OH	0	213
YW6	Southeastern Correctional Institute	II		5900 B.I.S. Rd. Lancaster, OH	2	3
YW7	Kurtz Bros Central Ohio LLC	II	✓	2850 Rohr Rd. Groveport, OH	0	0
YW8	Kohler Farms	III		Harlem Rd. Westerville, OH	0	0
YW9	Kurtz Brothers Groveport Composting Fac.	IV	✓	2850 Rohr Rd. Groveport, OH	0	34,182
YW10	Ohio Mulch Supply Inc.	IV	✓	2140 Advance Ave. Columbus, OH	0	130,568
YW11	Kurtz Bros Inc	IV	✓	6055 Westerville Rd. Westerville, OH	0	40,025
YW12	Wood Landscape Services	IV		4756 Scioto-Darby Rd. Hilliard, OH	0	54
YW13	Kurtz Bros Inc	IV	✓	6279 Houchard Rd. Dublin, OH	0	21,135

ID#	Facility Name	Class	Open to Public	Location	Waste Received from SWACO	
					Food Waste	Yard Waste
YW14	Kurtz Brothers-Brookside	IV	✓	2409 Johnstown-Alexandria Rd. Alexandria, OH	0	6,068
YW15	#1 Landscape	IV		3775 Ridge Rd. Medina, OH	0	0
YW16	Hauler/Kroger/Walmart	N/A		N/A	5,846	0
<b>Total</b>					<b>8,056</b>	<b>232,814</b>
<b>Community Yard Waste Collection Programs</b>						
YW17	City of Bexley					1,324
YW18	Blendon Township					458
YW19	Brice					6
YW20	City of Dublin					2,900
YW21	City of Whitehall					991
YW22	Clinton Township					54
YW23	City of Columbus					24,272
YW24	Franklin Township					132
YW25	Gahanna					3,677
YW26	Grandview Heights					882
YW27	City of Grove City and Jackson Township					2,003
YW28	Groveport					168
YW29	City of Hilliard					3,586
YW30	Jefferson Township					346
YW31	Madison Township					465
YW32	Minerva Park					58
YW33	Village of New Albany					501
YW34	Norwich Township					352
YW35	Perry Township					25
YW36	Plain Township					197
YW37	Pleasant Township					84
YW38	Reynoldsburg					2,294
YW39	Truro Township					27
YW40	City of Upper Arlington					1,186
YW41	Urbancrest					14
YW42	Valleyview					9
YW43	Riverlea					69
YW44	Westerville					3,847
YW45	Worthington					1,413

ID#	Facility Name	Class	Open to Public	Location	Waste Received from SWACO	
					Food Waste	Yard Waste
					<b>Total</b>	<b>51,337</b>
<b>Mulching Operations</b>						
YW46	City of Columbus Compost Facility (Com-Til)			7000 Jackson Pike Lockbourne, OH		7,947
					<b>Total</b>	<b>7,947</b>
<b>Land Application</b>						
	None				0	0
					<b>Total</b>	<b>0</b>
<b>Anaerobic Digestion</b>						
YW47	Quasar				185	0
					<b>Total</b>	<b>185</b>

Wood waste managed at the City of Columbus Compost Facility (Com-Til), YW46, is mulched and used as a bulking agent. The tons of food waste listed for Quasar, YW47, was adjusted to avoid double counting. Additional tons of food waste were accepted by Quasar and other registered compost facilities, but they were reported in Table B-5 under “Haulers/Kroger/Walmart” (YW16). YW-16 essentially denotes tonnage collected by Organix, which has contracts with Walmart, Kroger, and other entities. Organix utilizes multiple facilities to manage food waste. When SWACO surveyed Quasar to obtain food waste tonnage, SWACO requested the food waste tonnage delivered by all entities except Organix to avoid double counting.

**Table B-5b. Total Number of Composting/Yard Waste Management Activities by Type and Total Quantity Managed**

Number of Each Type of Facility/Program					Quantities (tons)		
Compost Facilities	Community Collections	Mulching Operations	Land Applications	Anaerobic Digestion	Food Waste	Yard Waste	Total Tons
16	30	1	0	1	8,241	292,098	300,340
<b>Quantity Adjustments</b>							
Grocery store composted food not reported in Table B-5					115	-	
Food waste reported by registered compost facilities that may be included in the total reported by haulers					-1,551		
Materials collected by Community Yard Waste Collection Programs (Tonnage was managed at Registered Compost Facilities and double-counted)					-	-51,337	
Wood mulched by the City of Columbus Compost Facility was reported as wood in the Annual District Report.					-	-7,947	
<b>Adjusted Quantity Totals</b>					<b>6,805</b>	<b>232,814</b>	<b>239,620</b>

There are 15 registered compost facilities in Ohio that managed food waste and yard waste generated in the District. Table B-5b identifies 16 compost facilities; the additional compost facility listed in this summary table reflects materials that were diverted by haulers, Walmart, and Kroger (YW16).

Adjustments were made to avoid double counting reported tonnage. Food waste reported by Price Farm Organics (YW2) and Ohio Mulch (YW4) was removed because the tonnage may have also been reported by haulers (YW16) (Viridiun and Future Organics), which identified using these facilities to manage food waste. Tonnage from Southeastern Correctional Institute was not removed because food waste is processed onsite and was not reported by haulers.

Paygro/A Garick Division did not accept waste from the food waste haulers that reported to Ohio EPA, and can therefore be credited without double counting materials.

Approximately 115 tons of food waste was added to the food waste generated by a grocery store chain was added to the diversion total. Ohio EPA confirmed that the tonnage was not included in the total tons reported by haulers or by a registered composting facility.

A total of 239,620 tons of organics were diverted from landfills in 2014 through a combination of registered compost facilities, organics haulers, community collection programs, mulching operations, and an anaerobic digester.





# APPENDIX C

## POPULATION DATA



## APPENDIX C POPULATION DATA

The population of Franklin County as of July 1, 2014 was estimated to be 1,231,393. The community populations added or subtracted to the Franklin County total in order to obtain the total District population for the reference year (2014) are shown in Table C-1. Each of these estimates is based on Ohio Department of Development Office of Strategic Research's (ODDOSR) publication "2014 Population Estimates for Cities, Villages and Townships published in May, 2015. As indicated in the table, populations for Lithopolis and Pickerington (where less than 50% resides in Franklin County) have been subtracted from the total, and populations for all the other communities, have been added to the Franklin County population to determine the total District population of 1,274,732.

**Table C-1. Population Adjustments and Total Reference Year Population**

Community	Franklin
Before Adjustment	1,231,393
<b>Additions</b>	
Columbus	7,753
Dublin	4,315
Westerville	8,147
Canal Winchester	868
Columbus	10,065
Reynoldsburg	919
New Albany	61
Reynoldsburg	8,887
Dublin	2,444
<b>Subtractions</b>	
Lithopolis	-46
Pickerington	-74
After Adjustment	1,274,732

Population projections for the District have been made using two different methodologies. For Franklin County, five-year projections provided in the ODDOSR publication, "2010 to 2040 Projected Population for Ohio Counties - Summary 2010 to 2040 Projected" have been used, with straight-line calculations applied to the years between the five-year projections. Projections for each community included as a population adjustment have been made based upon the growth rate within the county in which the community is located. This approach was selected due to the high growth rate experienced in some of the counties surrounding Franklin, especially Delaware County. Table C-2 shows the growth rates for counties in Central Ohio.

**Table C-2. Population Growth Rates for Central Ohio Counties**

County	Population		
	2014	2030	Annual % Change
Franklin	1,231,393	1,302,110	0.36%
Delaware	189,113	246,000	1.88%
Fairfield	150,381	187,820	1.56%
Licking	169,390	196,570	1.00%
Union	53,776	68,230	1.68%

From 2015 through 2035, population estimates for all adjustments in District population (i.e., additions and subtractions) are based on applying the annual rate of change in population shown in Table C-2 calculated for each respective county in which the community (addition or subtraction) is located, 2014 through 2030. See Table C-3 for District population projections. Using these methodologies, the District's population is expected to increase from approximately 1,282,000 in 2018, the first year of planning period, to more than 1,370,000 by the end of the planning period in 2032.

**Table C-3. District Population Projections**

Year	Franklin County Population	Adjustments to Population											Total District Population
		Delaware			Fairfield				Licking		Union		
		Columbus	Dublin	Westerville	Canal Winchester	Columbus	Reynoldsburg	Lithopolis	Pickerington	New Albany	Reynoldsburg	Dublin	
2014	1,231,393	7,753	4,315	8,147	868	10,065	919	-46	-74	61	8,887	2,444	1,274,732
2015	1,232,488	7,881	4,387	8,282	880	10,206	932	-46	-74	62	8,970	2,481	1,276,447
2016	1,233,582	8,012	4,459	8,419	892	10,349	945	-46	-75	62	9,054	2,518	1,278,172
2017	1,234,677	8,145	4,533	8,559	905	10,493	958	-46	-75	63	9,138	2,556	1,279,905
2018	1,235,771	8,280	4,608	8,701	918	10,640	972	-47	-75	63	9,224	2,594	1,281,648
2019	1,236,866	8,417	4,685	8,845	930	10,789	985	-47	-75	64	9,310	2,633	1,283,401
2020	1,237,960	8,557	4,762	8,991	943	10,940	999	-47	-76	65	9,397	2,672	1,285,164
2021	1,244,832	8,698	4,841	9,140	957	11,093	1,013	-47	-76	65	9,485	2,712	1,292,714
2022	1,251,704	8,843	4,921	9,292	970	11,248	1,027	-47	-76	66	9,573	2,753	1,300,274
2023	1,258,576	8,989	5,003	9,446	984	11,406	1,041	-47	-76	66	9,663	2,794	1,307,844
2024	1,265,448	9,138	5,086	9,602	997	11,565	1,056	-48	-77	67	9,753	2,836	1,315,425
2025	1,272,320	9,289	5,170	9,762	1,011	11,727	1,071	-48	-77	68	9,844	2,879	1,323,016
2026	1,278,278	9,443	5,256	9,923	1,025	11,891	1,086	-48	-77	68	9,936	2,922	1,329,704
2027	1,284,236	9,600	5,343	10,088	1,040	12,058	1,101	-48	-77	69	10,029	2,966	1,336,403
2028	1,290,194	9,759	5,431	10,255	1,054	12,226	1,116	-48	-78	69	10,123	3,010	1,343,113

Year	Franklin County Population	Adjustments to Population											Total District Population
		Delaware			Fairfield				Licking		Union		
		Columbus	Dublin	Westerville	Canal Winchester	Columbus	Reynoldsburg	Lithopolis	Pickerington	New Albany	Reynoldsburg	Dublin	
2029	1,296,152	9,921	5,521	10,425	1,069	12,397	1,132	-48	-78	70	10,218	3,055	1,349,834
2030	1,302,110	10,085	5,613	10,598	1,084	12,571	1,148	-49	-78	71	10,313	3,101	1,356,566
2031	1,308,160	10,252	5,706	10,773	1,099	12,747	1,164	-49	-79	71	10,409	3,147	1,363,402
2032	1,314,210	10,422	5,801	10,952	1,115	12,925	1,180	-49	-79	72	10,507	3,195	1,370,250
2033	1,320,260	10,595	5,897	11,133	1,130	13,106	1,197	-49	-79	73	10,605	3,242	1,377,110
2034	1,326,310	10,771	5,994	11,318	1,146	13,289	1,213	-49	-79	73	10,704	3,291	1,383,981
2035	1,332,360	10,949	6,094	11,505	1,162	13,475	1,230	-49	-80	74	10,804	3,340	1,390,865

**Notes:**

From 2015 through 2035, population estimates for all adjustments in District population (i.e., additions and subtractions) are based on applying an annual rate of change in population calculated for each respective county in which the community (addition or subtraction) is located, 2014 through 2030.

**Source:**

2014 population values are based upon Ohio Department of Development Office of Strategic Research publication, "2014 Population Estimates for Cities, Villages and Townships", May 2015.

Population estimates for 2020, 2025, 2030, and 2035 are based upon Ohio Department of Development Office of Strategic Research publication, "2010 to 2040 Projected Population for Ohio Counties - Summary 2010 to 2040 Projected."



# APPENDIX D

## DISPOSAL DATA



## APPENDIX D DISPOSAL DATA

### A. Reference Year Waste Disposed

As illustrated in Table D-1a below, the Franklin County Sanitary Landfill received nearly 98% of the direct-hauled waste sent for disposal from the District. The majority of this waste is generated from the R/C sector.

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

Facility Name	Location		Waste Received from SWMD (TPY)			
	County	State	Residential/ Commercial	Industrial	Excluded	Total
<b><i>In-district facilities</i></b>						
Franklin County Sanitary Landfill	Franklin	OH	502,395	38,859	0	541,254
<b><i>Out-of-district facilities</i></b>						
Athens Hocking C&DD/Reclamation Center Landfill	Athens	OH	7	181	0	188
Pine Grove Regional Facility	Fairfield	OH	1,135	4,868	5,352	11,356
Hancock County Sanitary Landfill	Hancock	OH	0	0	18	18
Stony Hollow Landfill, Inc.	Montgomery	OH	27	34	0	61
American Landfill	Stark	OH	0	12	0	12
Kimble Sanitary Landfill	Tuscarawas	OH	0	0	1	1
Evergreen Recycling & Disposal	Wood	OH	0	0	0	0
Suburban Landfill, Inc.	Perry	OH	6	249	213	467
Cherokee Run Landfill	Logan	OH	0	0	0	0
Celina Sanitary Landfill	Mercer	OH	0	0	8	8
<b><i>Out-of-state facilities</i></b>						
Unknown		KY	23	2	0	25
Unknown		IN	115	939	0	1,054
<b>Total Direct Haul Waste Disposed in Landfills</b>			<b>503,708</b>	<b>45,145</b>	<b>5,593</b>	<b>554,445</b>

Source: Ohio EPA facility data reports, and the 2014 SWACO Annual District Report.

There are no captive landfills located within the District.

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

Facility Name	Location		Waste Received from SWMD (TPY)		
	County	State	Industrial	Excluded	Total
<b><i>In-district facilities</i></b>					
None					0
<b>Total Waste Disposed in Captive Landfills</b>			<b>0</b>	<b>0</b>	<b>0</b>

In addition to the direct-hauled waste shown in Table D-1a, SWACO also relies heavily on transfer stations to manage solid waste. Table D-2 shows that most of the solid waste from the District which is processed by transfer stations is sent to facilities operated by the District – the Morse Road Eco-Station and Jackson Pike Transfer Station. The waste received by these two facilities is then delivered to the Franklin County Sanitary Landfill for disposal.

**Table D-2. Reference Year Waste Transferred**

Facility Name	Location		Waste Received from the SWMD (TPY)				Destination
	County	State	Residential/ Commercial	Industrial	Excluded	Total	
<b><i>In-district facilities</i></b>							
Jackson Pike Transfer Facility	Franklin	OH	241,984	0	0	241,984	Franklin Co. Sanitary LF
Morse Road Transfer Station	Franklin	OH	212,367	0	0	212,367	Franklin Co. Sanitary LF
Reynolds Avenue Transfer Station	Franklin	OH	7,650	0	26,656	34,306	Franklin Co. Sanitary LF, Pine Grove LF
Waste Management of Ohio Transfer & Recycling	Franklin	OH	9,902	0	154	10,056	Franklin Co. Sanitary LF, Suburban LF
Local Waste Services Transfer	Franklin	OH	1,706	0	2,575	4,280	Tunnel Hill Reclamation LF
Columbus Transfer and Recycling Facility	Franklin	OH	9	0	0	9	Franklin Co. Sanitary LF, Beech Hollow LF, Noble Rd. LF
<b><i>Out-of-district facilities</i></b>							

Facility Name	Location		Waste Received from the SWMD (TPY)				Destination
	County	State	Residential/ Commercial	Industrial	Excluded	Total	
Delaware County Transfer Station	Delaware	OH	126	0	82	208	Crawford Co. LF, Frank Road C&DD Facility
<b>Out-of-state facilities</b>							
None						0	
<b>Total Transferred Waste</b>			<b>473,743</b>	<b>0</b>	<b>29,466</b>	<b>503,210</b>	

Source: Ohio EPA facility data reports.

Table D-3 summarizes disposal data for the District. The District disposed nearly 1,023,000 tons of solid waste in the reference year (2014). Excluded waste has not been included in Table D-3 (and in subsequent tables showing total disposal) since it comprises only 3% of the total.<sup>1</sup>

**Table D-3. Reference Year Total Waste Disposed**

Disposal Method	Residential/ Commercial	Industrial	Total	% of Total Waste Disposed
Direct Hauled	503,708	45,145	548,852	54%
Transferred	473,743	0	473,743	46%
<b>Total</b>	<b>977,451</b>	<b>45,145</b>	<b>1,022,595</b>	<b>100%</b>
<b>Percent of Total</b>	<b>96%</b>	<b>4%</b>	<b>100%</b>	

**B. Historical Waste Analysis**

Table D-4 presents historical data shows that the District has experienced a gradual increase in population since 2010, while the tons of R/C waste disposed decreased by nearly 112,000 tons from 2010 to 2013. Between 2013 and 2014, there was a slight increase in R/C disposal. The largest annual change in R/C disposal during this time period occurred from 2010 to 2011 (a decrease of more than 48,000 tons).

<sup>1</sup> Ohio EPA’s Format v4.0 instructs solid waste management districts to delete excluded waste if it comprises less than 10 percent of the total waste disposed.



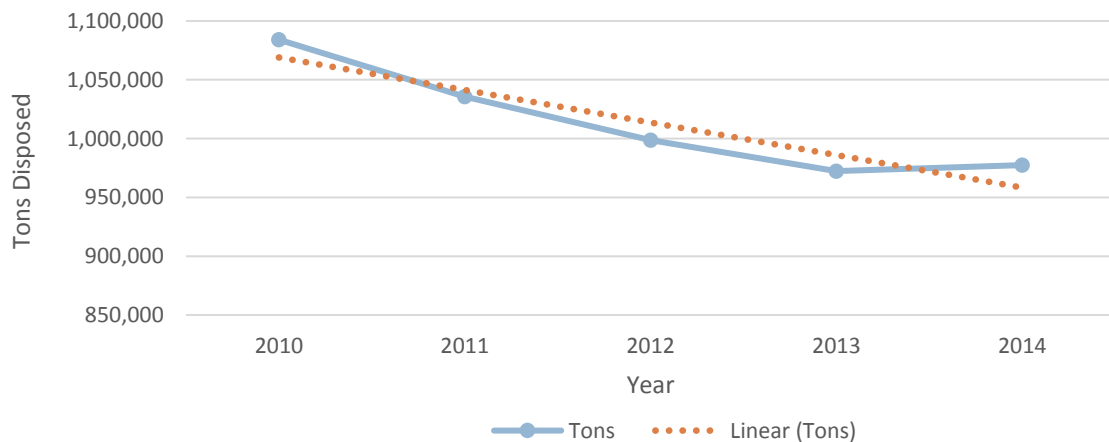
**Table D-4. Historical Disposal Data**

Year	Population	Residential/Commercial Solid Waste		Industrial Solid Waste	Total Waste
		Rate (ppd)	Tons	Tons	Tons
2010	1,204,957	4.93	1,084,132	84,930	1,169,062
2011	1,213,196	4.68	1,035,694	40,983	1,076,677
2012	1,213,967	4.51	998,722	36,577	1,035,299
2013	1,239,715	4.30	972,383	44,830	1,017,213
2014	1,274,732	4.20	977,451	45,145	1,022,595

**Source:** Ohio EPA facility data reports and SWACO Annual District Reports.

The R/C tonnage shown in Table D-4 is displayed graphically in Figure D-1. In general, the chart indicates that disposal tonnage decreased substantially from 2010 to 2013, and then recovered somewhat in 2014. Overall, the District experienced an average annual disposal rate of change of -2.56 percent in terms of R/C tons disposed during this time period. The red line in Figure D-1 is another approximation of the trend in tons disposed. The average disposal rate for R/C waste is 4.52 pounds per person per day for this time period.

**Figure D-1. Residential/Commercial Waste Disposal: 2010 – 2014**



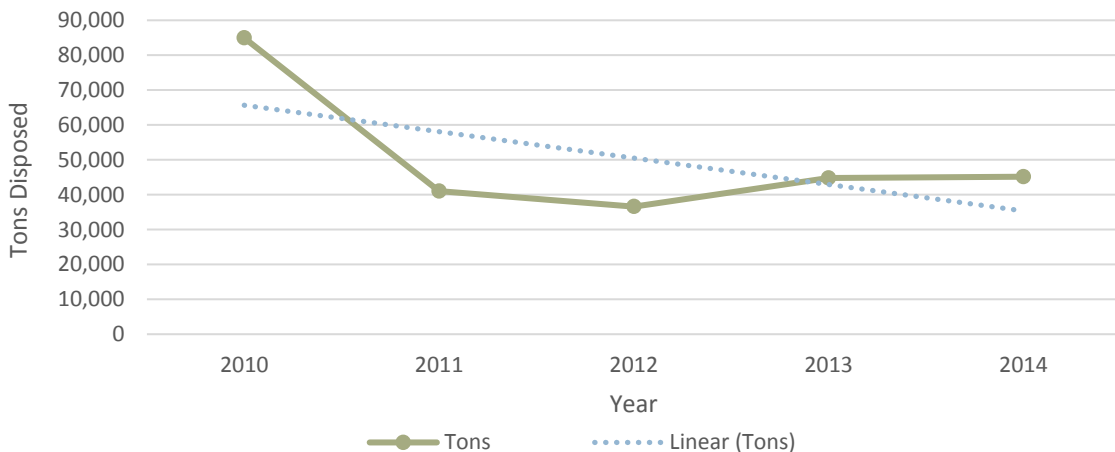
Compared to other urban solid waste districts in Ohio, SWACO’s R/C disposal rate is at the low end of the range, with only Summit SWMD having a lower disposal rate for 2014.

**Table D-4b. Residential/Commercial Disposal Rate for Selected Urban SWMDs for 2014**

SWMD	Residential/Commercial Disposal Rate (lbs/person/day)
Cuyahoga	5
Hamilton	5.30*
Lucas	5
Montgomery	5
Summit	4

The amount of industrial waste disposal also experienced a decline – most significantly from 2010 to 2011, and then remained relatively consistent. (See Figure D-2.) The industrial waste disposed of during this time period represents an average decrease of 9,946 tons and 9.81 percent per year.

**Figure D-2. Industrial Waste Disposal: 2010 – 2014**



The current Plan projected a slight increase in total tons of disposal from 2010 through 2014, but actual disposal amounts experienced a decrease. In 2010 and 2011, actual total disposal amounts were higher than projected, but beginning in 2012, the reverse was true. In general, this pattern was also applicable for R/C waste. However, the current Plan projections showed a relatively steady decrease for industrial wastes, while the actual tons disposed significantly declined from 2010 to 2012, then showed a slight increase. Generally, the actual tons of industrial wastes disposed were considerably higher than what was projected.

**Table D-4c. Comparison of Actual Disposal to Projections in Current Plan**

Year	Residential/Commercial		Industrial		Total
	Actual	Current Plan	Actual	Current Plan	Current Plan
2010	1,084,132	1,003,312	84,930	33,045	1,066,357
2011	1,035,694	1,017,497	40,983	22,464	1,069,961
2012	998,722	1,032,827	36,577	21,893	1,084,719
2013	972,383	1,048,352	44,830	21,331	1,099,683
2014	977,451	1,064,076	45,145	20,780	1,114,856

The actual R/C waste generation for 2010 to 2014 ranges from 81,000 tons higher initially to 87,000 tons lower than the corresponding current Plan projections. However, the actual amount of waste reduction and recycling was significantly higher than predicted in the current Plan projections for each year, which could partially explain the lower disposal tonnages for actual vs. projection amounts.

At least a portion of the discrepancy between actual and Plan projections for R/C waste may also be explained by re-characterization of waste at transfer stations and landfills.<sup>2</sup> The differences between current Plan projections and actual disposal could suggest other circumstances as well, including:

- Businesses recycled or reduced more waste than anticipated.
- General economic activity experienced a decline during the recession in 2008 which was reflected in the amount of R/C waste disposed beginning in 2010.

The steady decrease in the actual R/C waste disposed (in both tons and pounds per person per day) from 2010 through 2014 is consistent with national trends for both waste generation and waste disposal. The United States Environmental Protection Agency (U.S. EPA) has estimated R/C waste generation at 4.40 pounds/person/day for 2013 which is a decrease from 4.74 pounds/person/day estimated for 2000.<sup>3</sup> (It is important to note that U.S. EPA's estimates for disposal rates are much lower than those experienced in Franklin County and other urban SWMDs in Ohio. This discrepancy can be attributed at least in part to U.S. EPA's reliance on the use of models to predict waste generation and disposal rates, and the inclusion of both urban and rural areas in order to represent all of the United States.)

<sup>2</sup> Re-characterization of waste at the Franklin County Landfill occurred in 2010, 2011, and 2012, during which R/C waste was coded as industrial waste. It is also possible that some R/C waste has been incorrectly characterized as construction and demolition debris.

<sup>3</sup> Advancing Sustainable Materials Management: Facts and Figures 2013, U.S. EPA, Office of Resource Conservation and Recovery (5306P), EPA530-R-15-002, June 2015

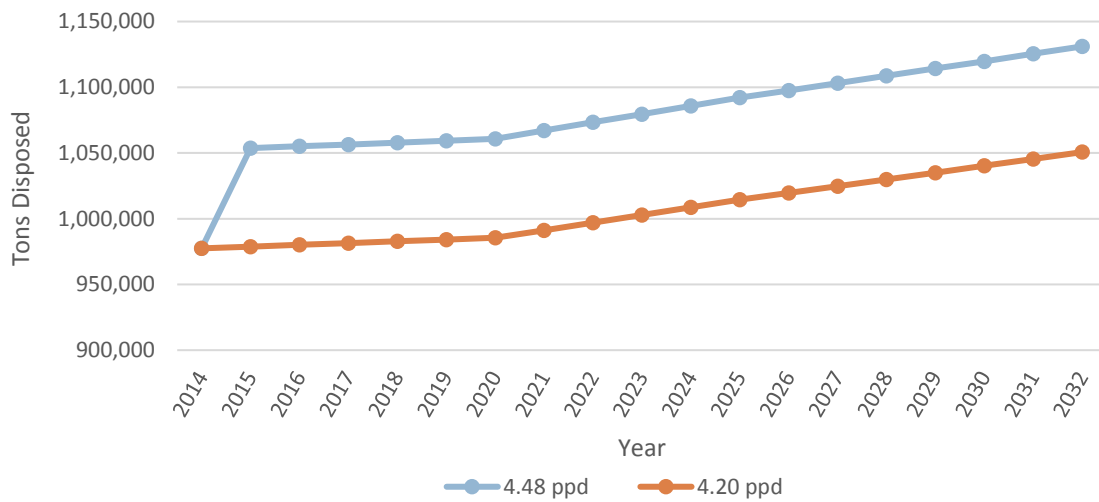
For industrial waste, tons disposed of ranged from 18,000 to approximately 24,000 tons higher than current Plan projected for 2011 to 2014. (Year 2010 seems to be an outlier in terms of actual industrial disposal tonnage.) With the exception of 2010, actual industrial waste generation has been much higher than predicted in the current Plan, primarily due to much higher actual waste reduction/recycling than projected. SWACO's data collection efforts with regard to both the industrial and commercial sectors have continued to improve, have become more effective, and have resulted in greater response rates from businesses within the SWMD. It seems likely that this increased success in data collection has been a primary factor in explaining much higher actual waste reduction/recycling amounts. (For example, reported tons of industrial waste reduced and recycled increased from 218,000 tons in 2011 to more than 407,000 tons in 2012.) Furthermore, it is possible that improved data collection has also identified additional industrial waste destined for disposal and has led to improved characterization of waste, resulting in slightly higher disposal amounts than predicted.

Another possible explanation for higher actual industrial disposal compared to Plan projections could be employment projections for the industrial sector. The current Plan predicted an annual decrease of 1.76% from 2009 through 2016 in manufacturing employment and used this decrease in employment to project industrial waste generation. The most recent report available from ODJFS shows a more modest decline of 0.26% per year in manufacturing employment in the Columbus metropolitan area. Assuming employment continues to be an acceptable metric to predict waste generation trends, applying these latest employment projections would result in slightly higher industrial waste generation and disposal amounts, which would be more in line with the actual disposal amounts for 2011 through 2014.

### **C. Disposal Projections**

A number of methodologies can be used to project disposal for the planning period. One of the most straight-forward and frequently-used methods for the R/C sector is multiplying the population by the estimated disposal rate in pounds per person per day (ppd). Figure D-3 shows the results of using this methodology, assuming two different disposal rates: (1) the average per capita disposal rate for 2010 through 2014 (4.48 ppd); and (2) the per capita disposal rate for 2014 (4.20 ppd).

**Figure D-3. Projected Residential/Commercial Disposal Using Alternative Per Capita Disposal Rates**

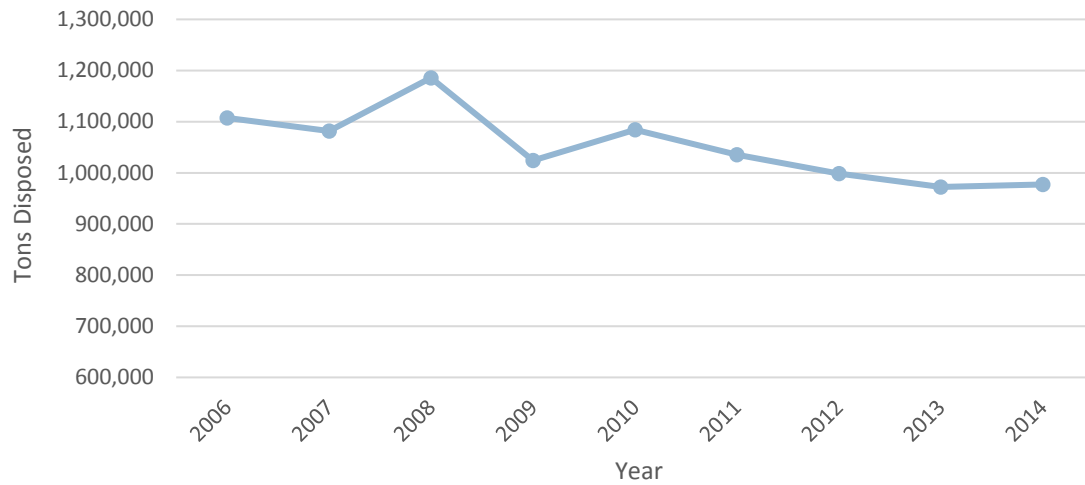


While the approach used to produce the blue line in Figure D-3 results in a rather modest increase of approximately 154,000 tons disposed from 2014 to 2032, this trend of increasing disposal is inconsistent with the trend of actual tons disposed from 2010 through 2014. A more modest increase in disposal is represented by the red line in Figure D-5 above, which uses the 2014 disposal rate of 4.20 ppd to calculate estimated disposal amounts for the planning period. This approach results in an increase of approximately 73,000 tons over the planning period.

An examination of R/C disposal over a longer time period shows that SWACO has experienced a decline of ton disposed since 2006, except for a brief increase in tons in 2008. (See Figure D-4.) It is likely that the steep decline in the amount disposed in 2009 can be attributed to the effects of the economic recession.<sup>4</sup>

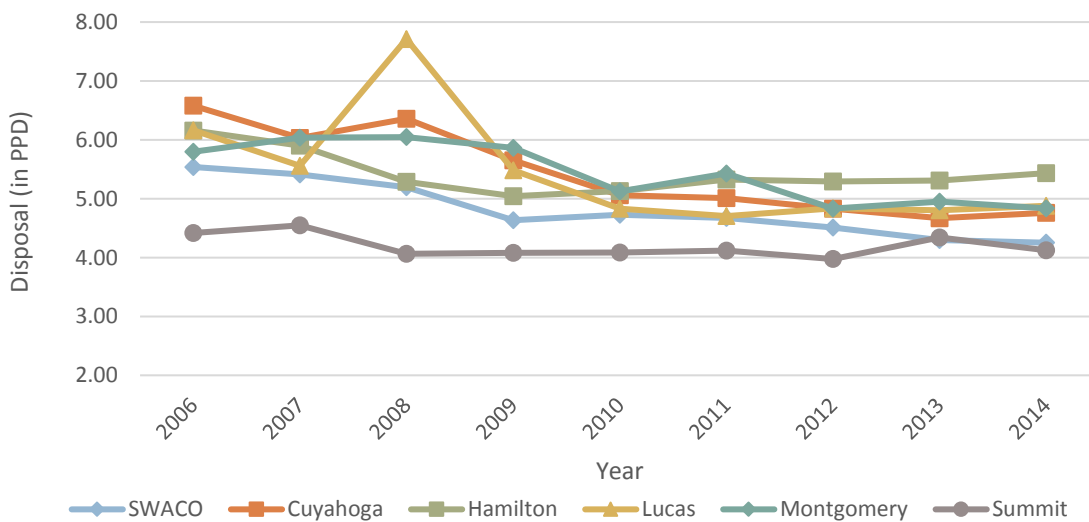
<sup>4</sup> Ohio EPA records indicate that SWACO’s residential/commercial waste was mischaracterized as industrial waste in each year, 2008 through 2012. Adjustments have been made in the dataset to reflect these mischaracterizations during this time period.

**Figure D-4. SWACO R/C Disposal: 2006 through 2014**



A comparison of the disposal rate for the District with other urban SWMDs in Ohio is shown in Figure D-5. In general, the figure shows that all of these SWMDs have experienced a consistent decline in the R/C disposal rate since 2006, with the exception of 2008 in some cases. The only exception to this pattern seems to be the Summit SWMD, for which the disposal rate has remained relatively constant. The annual rate of change in the per capita disposal rate for these selected urban SWMDs ranges from -0.87% (Summit) to -3.97% (Cuyahoga), with the average annual rate of change for all six SWMDs equal to -2.30%.

**Figure D-5. R/C Disposal Rate Trends for Urban Ohio SWMDs**



In further support of decreasing disposal of waste generated within the District, national trends for both per capita R/C waste generation and disposal have been steadily decreasing since the year 2000. Based on U.S. EPA data, the annual rate of change in the national R/C generation rate since the year 2000 is -0.57%, while the corresponding rate of change for disposal since the year 1990 is -1.38%. The nationwide tonnage of R/C waste disposed since 2000 has decreased slightly.

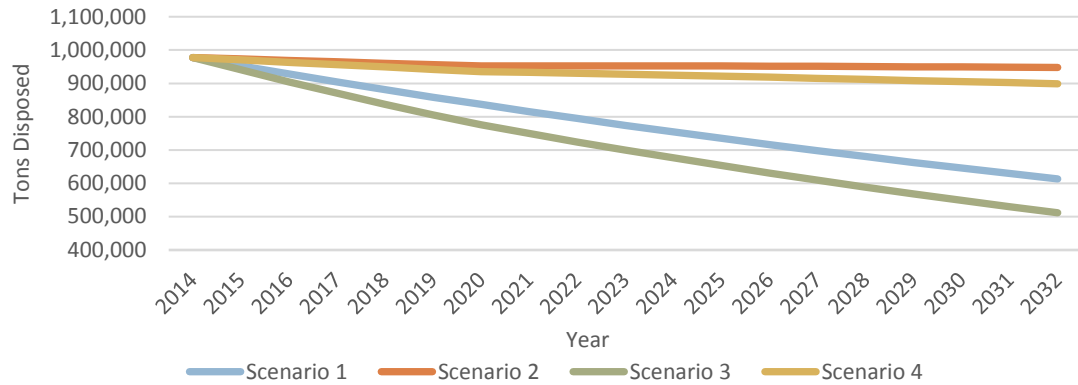
Figure D-6 below, shows the results of applying the various trends relating to R/C waste disposal, as discussed above, for SWACO, other urban Ohio SWMDs and national data. The scenarios illustrated in this figure are defined as follows:

- Scenario 1 – Applies an annual percentage rate of change of -2.56%, based on SWACO's R/C disposal tonnage from 2010 through 2014. Projected disposal for 2018 (1<sup>st</sup> year of planning period) is 881,000 tons; projected disposal for 2032 (last year of planning period) is 613,000 tons.
- Scenario 2 – Applies an annual percentage rate of change of -0.57% (based on the U.S. per capita waste generation rate of change, 2000-2013) to the SWACO per capita disposal rate, multiplied by the corresponding SWACO population for each year. Projected disposal for 2018 is 960,000 tons; projected disposal for 2032 is 948,000 tons.
- Scenario 3 – Applies an annual percentage rate of change of -3.92% (based on the SWACO per capita disposal rate of change, 2010-2014) to the SWACO per capita disposal rate, multiplied by the corresponding SWACO population for each year. Projected disposal for 2018 is 838,000 tons; projected disposal for 2032 is 512,000 tons.
- Scenario 4 – Applies an annual percentage rate of change of -0.87% (based on the Summit SWMD per capita disposal rate of change, 2006-2014) to the SWACO per capita disposal rate, multiplied by the corresponding SWACO population for each year. Projected disposal for 2018 is 949,000 tons; projected disposal for 2032 is 897,000 tons.

While the projections shown in Figure D-3 predict increasing disposal tonnage each year of the planning period, the scenarios in Figure D-6 all show decreasing amounts disposed. Each of the scenarios defined above (one through four) also use calculations which are representative of SWACO's both near-term (2010-2014) and longer-term data:

- Decreasing tons of R/C waste disposed over time
- Decreasing per capita disposal rates over time

**Figure D-6. Disposal Projections Using Alternative Scenarios**

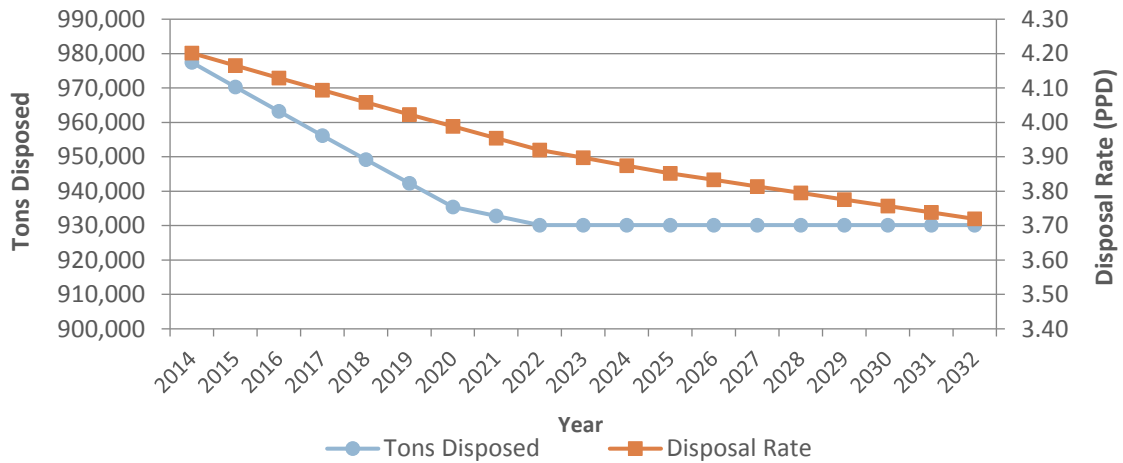


Both Scenario 1 and Scenario 3 represent quite steep declines in disposal over the planning period. Even though these projections are based on past trends for SWACO’s disposal, such significant rates of decrease in disposal tonnage are not expected to be sustained into the future. It is likely that increasing amounts of waste reduction and recycling have been a contributing factor towards less disposal (much more so in some years than others). However, the rate of increase in waste reduction and recycling may be more difficult to continue since it is likely that the District already recovers or reduces much of the waste streams easiest to remove from disposal.

Scenarios 2 and 4 show much slower declines in the disposal rate for SWACO and are more consistent with the District’s expectations for future disposal. SWACO created Scenario 5 to represent the R/C waste disposal projections for this Plan Update, and has selected the disposal rate of change from Scenario 4 to calculate the projections for the first five years of the planning period (plus years 2014 through 2017). SWACO has applied the rate of change from Scenario 4 to only the first five years of the planning period since the uncertainty associated with projections becomes greater each year beyond the reference year. For this reason, SWACO has chosen to assume disposal tonnage remains constant after the first five years of the planning period. Figure D-7 shows the resulting projections using Scenario 5.



Figure D-7. Scenario 5: R/C Projections



SWACO believes the approach represented by Scenario 5 is appropriate for the following reasons:

- It maintains a decreasing disposal rate in terms of pounds per person per day which is consistent with short and longer term trends for both SWACO and other urban SWMDs in Ohio;
- It recognizes the uncertainty associated with projections as the projected value becomes further removed from the last known value, or in this case, the reference year value; and
- It uses a conservative value for the disposal rate of change (values range from -0.87% to -3.97% for urban SWMDs in Ohio) which should help to ensure that SWACO’s projections for the amount of waste to be managed by disposal are more than adequate.

After the analysis of R/C disposal projections was initially completed, actual data for year 2015 became available showing that SWACO’s disposal increased by 37,000 tons instead of decreasing as predicted in the projections discussed above. SWACO’s per capita disposal rate for 2015 increased to 4.36 ppd compared to 4.20 ppd for 2014. The Lucas and Montgomery SWMDs also experienced an increase in the disposal rate during 2015. (See table below.) However, the disposal rate for the Hamilton SWMD decreased from 2014 to 2015, and Cuyahoga’s and Summit’s disposal rates were virtually unchanged.

Year	Solid Waste Management District (Disposal Rate in PPD)					
	SWACO	Cuyahoga	Hamilton	Lucas	Montgomery	Summit
2014	4.25	4.76	5.44	4.88	4.83	4.12
2015	4.36	4.77	5.35	5.16	5.12	4.10

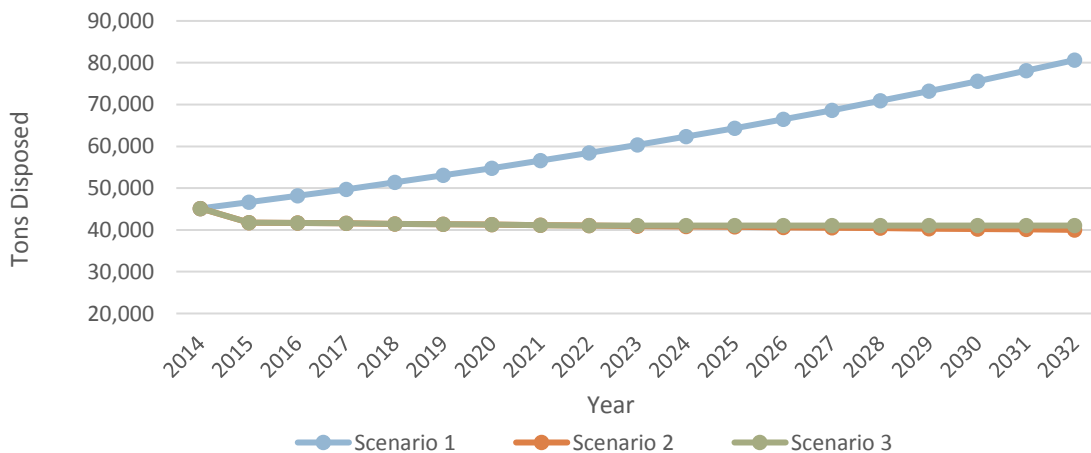
Given the mixed results in the 2014 vs. 2015 disposal rates for these SWMDs, SWACO believes that its 2015 data should not be considered a trend with regard to the projections. Every year since 2006 (with the exception of 2010), SWACO’s R/C disposal rate has decreased from the previous year, until 2015. As a result, SWACO believes the projections discussed above are appropriate, and represent a conservative estimate of future disposal tonnage.

The amount of industrial waste disposed has remained relatively constant since 2011. (As the industrial disposal tonnage for 2010 appears to be an outlier compared to 2011 through 2014, only the 2011 through 2014 data has been used in the scenarios described below.) Three alternative scenarios have been developed to project industrial waste:

- Industrial Scenario 1 – Applies an average annual percentage rate of change of 3.28% (based upon SWACO’s industrial disposal tonnage, 2011-2014) to each successive year of the planning period. Projected disposal for 2018 is 51,400 tons; projected disposal for 2032 is 80,700 tons.
- Industrial Scenario 2 – Uses the average disposal tonnage for 2011 through 2014, and adjusts this amount each successive year of the planning period by the Ohio Jobs Network manufacturing employment growth rate for the Columbus Metropolitan Area for 2012-2022 (-0.26%). Projected disposal for 2018 is 41,500 tons; projected disposal for 2032 is 40,000 tons.
- Industrial Scenario 3 – Uses the average disposal tonnage for 2011 through 2014, and adjusts this amount for 2015 through 2022 by the Ohio Jobs Network manufacturing employment growth rate for the Columbus Metropolitan Area for 2012-2022 (-0.26%). After year 2022, industrial disposal is projected to be constant. Projected disposal for 2018 is 41,500 tons; projected disposal for 2032 is 41,000 tons.

The figure below illustrates the projections using the three industrial scenarios.

**Figure D-8. Industrial Disposal Projections: Three Scenarios**



Both Scenarios 2 and 3 represent recent historical trends for SWACO's industrial disposal as well as employment projections developed by Ohio Department of Development's Office of Strategic Research. Since Scenario 3 applies the employment projections only through year 2022, and for this reason results in a slightly more conservative disposal projection, Scenario 3 is used in this Plan.

Table D-4d below combines the selected projection scenarios for both the R/C and industrial sectors to show the expected disposal tonnages over the planning period.

**Table D-4d. Disposal Projections for the District**

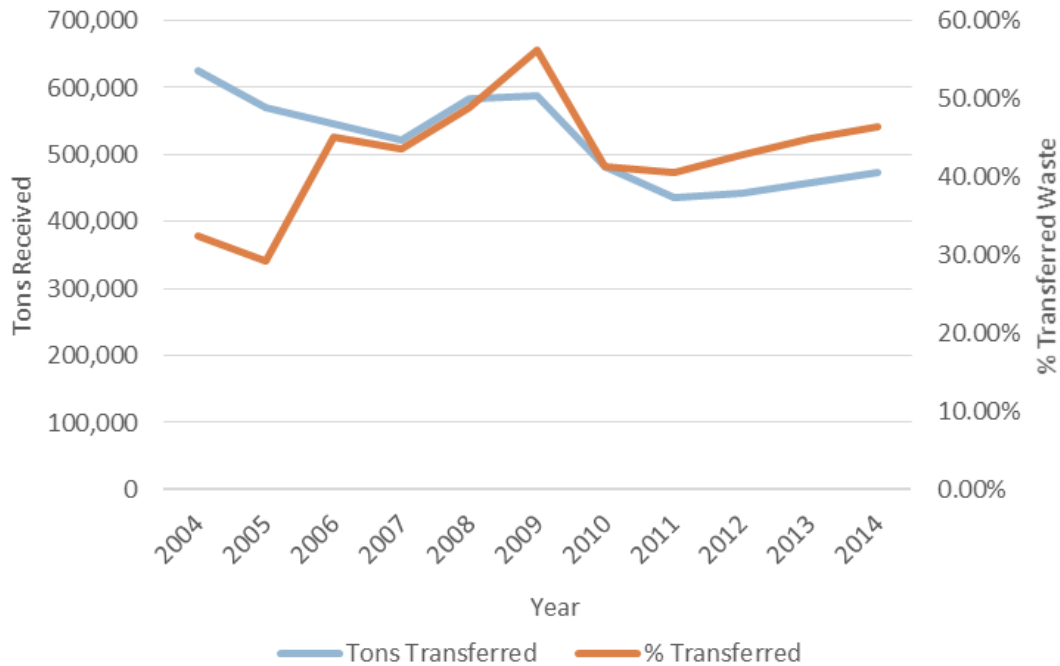
Year	Residential/Commercial Solid Waste	Industrial Solid Waste	Total Waste
	Tons		
2014	977,451	45,145	1,022,595
2015	970,308	41,777	1,012,085
2016	963,223	41,670	1,004,894
2017	956,195	41,564	997,759
2018	949,224	41,458	990,682
2019	942,309	41,352	983,661
2020	935,449	41,247	976,696
2021	932,814	41,141	973,955
2022	930,162	41,036	971,198
2023	930,162	41,036	971,198
2024	930,162	41,036	971,198
2025	930,162	41,036	971,198
2026	930,162	41,036	971,198
2027	930,162	41,036	971,198
2028	930,162	41,036	971,198
2029	930,162	41,036	971,198
2030	930,162	41,036	971,198
2031	930,162	41,036	971,198
2032	930,162	41,036	971,198

Solid waste processed by transfer facilities has been an important management component for SWACO for many years. Figure D-9 shows that the amount of solid waste received at transfer facilities has decreased since 2004, and remained relatively constant since 2010 (blue line). As a percentage of total waste disposed<sup>5</sup>, the amount of solid waste sent to transfer facilities increased significantly from 2004 through

<sup>5</sup> In this context, total waste disposed does not include residual waste, exempt waste, or construction and demolition debris waste.

2009, decreased substantially in 2010, and then increased slightly each year thereafter. (See the red line in Figure D-9.) The average amount sent to transfer facilities from 2010 through 2014 was 458,700 tons per year. Tons delivered directly to the Franklin County Sanitary Landfill (FCSL) and other landfills during this same period steadily declined.

**Figure D-9. SWACO Solid Waste Received at Transfer Facilities: 2004-2014**



In the future, a number of factors could influence the percentage of solid waste which is first received at transfer facilities serving the District, including:

- The cost of fuel;
- The rate of population (or waste) growth in the City of Columbus as compared to outlying areas such as the City of Dublin or the City of Westerville;
- Changes in the tipping fees at the transfer facilities versus the FCSL;
- Changes in the operational costs and/or operational procedures (e.g., wait times for collection vehicles dumping loads) at the transfer stations relative to the FCSL; and/or
- The closure of one or more transfer facilities owned and operated by SWACO or one of the private companies operating within the District.

Using available data, SWACO has determined that using the average amount of waste sent to transfer facilities from 2010 through 2014, is a reasonable basis for calculating the amount of projected solid waste to be transferred throughout the planning period is appropriate. Table D-5 shows the results of these projections.

Table D-5. Projections for Waste to be Disposed and Transferred

Year	Residential/ Commercial Solid Waste	Industrial Solid Waste	Total Waste	Waste Transferred (as part of Total Disposal)	
	Tons			Percent	
2014	977,451	45,145	1,022,595	473,743	46.33%
2015	970,308	41,777	1,012,085	458,710	45.32%
2016	963,223	41,670	1,004,894	458,710	45.65%
2017	956,195	41,564	997,759	458,710	45.97%
2018	949,224	41,458	990,682	458,710	46.30%
2019	942,309	41,352	983,661	458,710	46.63%
2020	935,449	41,247	976,696	458,710	46.97%
2021	932,814	41,141	973,955	458,710	47.10%
2022	930,162	41,036	971,198	458,710	47.23%
2023	930,162	41,036	971,198	458,710	47.23%
2024	930,162	41,036	971,198	458,710	47.23%
2025	930,162	41,036	971,198	458,710	47.23%
2026	930,162	41,036	971,198	458,710	47.23%
2027	930,162	41,036	971,198	458,710	47.23%
2028	930,162	41,036	971,198	458,710	47.23%
2029	930,162	41,036	971,198	458,710	47.23%
2030	930,162	41,036	971,198	458,710	47.23%
2031	930,162	41,036	971,198	458,710	47.23%
2032	930,162	41,036	971,198	458,710	47.23%



# APPENDIX E

## RESIDENTIAL/COMMERCIAL REDUCTION AND RECYCLING DATA



## **APPENDIX E RESIDENTIAL/COMMERCIAL REDUCTION AND RECYCLING DATA**

This Appendix presents the waste reduction and recycling data for the R/C sectors in the reference year (2014). To avoid double-counting tonnage, adjustments made to tonnage reported by different types of entities, such as brokers, and scrap yards, will be demonstrated. A historic analysis of the R/C sector's recycling is included in this Appendix. Information in this section, as well as information from other sources, was used to calculate the recycling projections from 2015 to the end of the planning period (2032) which are included at the end of this Appendix.

### **Table E-1. Commercial Survey Results**

SWACO does not survey commercial entities; therefore, this table has been omitted.

Table E-2. 2014 Data from Other Recycling Facilities

Source	WG	EW	LAB	GL	FM	NF	CC	IMP	PL	TX	W	SS	O <sup>1</sup>	O <sup>2</sup>	O <sup>3</sup>	Total	Adj.	Adj. Total	
<b>Buybacks</b>																			
None																0	0	0	
<b>Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Adj.</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Adj. Total</b>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Scrap Yards</b>																			
SY1	-	-	-	-	19,728	2,053	-	-	-	-	-	-	-	-	-	21,781	-	21,781	
SY2	-	-	-	-	6,877	830	-	-	-	-	-	-	-	-	-	7,707	-	7,707	
SY3	450	-	97	-	3,329	200	-	-	-	-	-	-	-	-	-	4,076	-	4,076	
<b>Total</b>	450	-	97	-	29,934	3,083	-	-	-	-	-	-	-	-	-	33,564	-	33,564	
<b>Adj.</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Adj. Total</b>	450	-	97	-	29,934	3,083	-	-	-	-	-	-	-	-	-	33,564	-	33,564	
<b>Processors</b>																			
PR1	-	-	-	-	-	-	1,590	398	-	-	-	-	-	-	-	1,988	-	1,988	
PR2	-	566	-	-	-	-	-	-	-	-	-	-	-	-	-	566	-	566	
PR3	-	257	-	-	125	-	44	341	115	2,086	0	-	-	-	226	3,195	-	3,195	
PR4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PR5	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	0	-	0	
PR6	-	-	-	-	-	-	-	4,746	-	-	-	10	-	-	-	4,756	-	4,756	
PR7	-	-	-	-	-	-	-	-	-	7,947	-	-	-	1,614	-	9,561	-	9,561	
PR8	-	-	-	-	-	-	-	-	-	-	-	122	-	-	122	-	-	122	
PR9	-	33	0	-	-	-	21	-	-	-	-	-	5	-	-	60	-	60	
PR10	-	66	-	-	-	-	-	1,690	-	-	-	-	-	-	-	1,756	-	1,756	
PR11	-	-	-	-	-	-	-	-	41	-	-	-	-	-	-	41	-	41	
PR12	273	-	-	-	-	-	-	-	-	-	-	-	-	-	-	273	-	273	
PR13	117	-	-	-	-	-	-	-	-	-	-	-	-	-	-	117	-	117	
PR14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PR15	-	-	-	3	5	2	-	-	2	-	-	-	-	-	-	11	-	11	
PR16	-	-	-	-	-	-	-	-	-	262	-	-	-	-	-	262	-	262	
PR17	-	68	-	-	-	3	-	-	-	-	-	-	-	-	-	71	-	71	
PR18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PR19	-	-	-	-	-	-	19,555	-	-	-	-	-	-	-	-	19,555	-	19,555	
PR20	-	-	-	-	-	-	-	9,520	-	-	-	-	-	-	-	9,520	-	9,520	
PR21	-	-	-	-	7	-	94	5,483	-	-	35	-	-	-	-	5,619	-	5,619	
PR22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Total</b>	390	990	0	3	137	5	21,304	22,178	158	2,349	7,982	132	5	1,614	226	57,473	-	57,473	
<b>Adj.</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
<b>Adj. Total</b>	390	990	0	3	137	5	21,304	22,178	158	2,349	7,982	132	5	1,614	226	57,473	-	57,473	



Table E-2. 2014 Data from Other Recycling Facilities (continued)

Source	WG	EW	LAB	GL	FM	NF	CC	MP	PL	TX	W	SS	O <sup>1</sup>	O <sup>2</sup>	O <sup>3</sup>	Total	Adj.	Adj. Total
<b>MRF's</b>																		
MRF1	-	-	-	13,781	1,365	800	21,626	41,295	5,234	-	114	-	-	-	-	84,215	-	84,215
MRF2	-	-	-	64	10	6	73	205	32	-	-	-	-	-	-	390	-	390
MRF3	-	-	-	1	0	0	1	59	0	-	3	-	-	-	-	64	-	64
MRF4	-	-	-	-	-	-	-	-	-	-	-	579	-	-	-	579	-	579
MRF5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MRF6	-	-	-	-	-	-	-	-	-	-	-	752	-	-	-	752	-	752
<b>Total</b>	-	-	-	13,845	1,375	806	21,700	41,559	5,266	-	117	1,331	-	-	-	85,999	-	85,999
<b>Adj.</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Adj. Total</b>	-	-	-	13,845	1,375	806	21,700	41,559	5,266	-	117	1,331	-	-	-	85,999	-	85,999
<b>Grand Total</b>	840	990	97	13,848	31,446	3,893	43,004	63,737	5,425	2,349	8,099	1,462	5	1,614	226	177,036		

**Notes:**

WG = Appliances/White Goods, EW = E-Waste, LAB = Lead-Acid Batteries, GL= Glass, FM = Ferrous Metals, NF = Non-Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, PL = Plastics, TX = Textiles, W = Wood, SS = Single Stream/Commingled, O = Other (Other: 1. Dry-Cell Batteries, 2. Ash, 3. Toys, Rigid Plastics, Accessories) Adj. = Adjusted

**Source:** SWACO survey data, 2014 Ohio EPA MRF Report

**Sample Calculations (MRF1):** Total (84,215 tons) – adjustment (0 tons) = Adjusted total (84,215 tons)

**Assumptions:** Tonnage in this table reported by scrap yards, processors, and MRFs is not double counted; therefore, no adjustments were necessary.

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

Responses are evaluated by comparing data submitted by each entity from previous years. Significant increases or decreases in overall tonnage, or tonnage reported for each sector, are investigated using a variety of strategies, such as: (1) contacting the respondent, verifying tonnage, and asking for an explanation, (2) identifying fluctuations in the economy/market that could cause tonnage to fluctuate, and/or (3) researching changes to the survey respondent's establishment such as a company merger, receipt of a Notice of Violation, or unexpected events impacting operations, such as a facility fire.

Clear instructions are presented on the survey which inform respondents to only include tonnage generated within SWACO's jurisdiction. Respondents are also instructed to refrain from reporting any metals from auto bodies, train boxcars, or construction and demolition debris (C&DD).

Responses are reviewed to ensure materials are not reported by more than one entity surveyed. For example, SWACO is aware that large scrap yards may purchase scrap metal from other scrap yards. SWACO uses data from two scrap yard companies (three scrap yards are listed in Table E-2 because one company operates two locations), and contacted both scrap yards to confirm that they do not purchase or sell metals to one another. Another example involves a pallet recycler who was contacted to verify that the pallets received were actually refurbished/recycled and not mulched at a compost facility.

Table E-3. 2014 Data Reported to Ohio EPA

Ohio EPA Data Source	GL	PL	NP	CC	MP	NF	FM	W	FW	SS	Total	Adj.	Adjusted Total
Aldi, Inc.	-	13	-	906	-	-	-	-	-	-	919	-	919
Big Lots	-	-	-	1,335	-	-	-	-	-	-	1,335	-	1,335
Dollar General	-	-	-	769	1	-	-	-	-	-	770	-	770
Home Depot	-	12	-	468	-	-	47	491	-	-	1,019	-	1,019
Jo-Ann Fabrics	-	-	-	-	-	-	-	-	-	32	32	-	32
Kohl's	-	67	-	706	-	-	-	-	-	0	773	-	773
Kroger	-	-	-	10,684	-	-	-	-	-	-	10,684	-	10,684
Lowe's	-	4	-	624	-	-	309	350	-	-	1,286	-	1,286
Meijer	-	-	-	4,303	-	-	-	-	-	-	4,303	-	4,303
Michaels	-	-	-	210	-	-	-	-	-	48	258	-	258
Target	-	69	-	3,210	28	-	12	-	-	11	3,329	-	3,329
Walmart	-	72	-	9,202	42	1	1	-	-	1,061	10,379	-	10,379
JC Penney Distribution Ctr.	-	29	-	162	5	-	2	-	-	1	199	-	199
OEPA-1	-	115	-	4,076	78	-	-	-	115	10	4,394	-	4,394
<i>Total</i>	-	380	-	36,655	153	1	370	841	115	1,164	39,679	-	39,679
<i>Adjustments</i>	-	-	-	-	-	-	-	-	-	-	-	-	-
<i>Ad. Total</i>	-	380	-	36,655	153	1	370	841	115	1,164	39,679	-	39,679

**Notes:**

GL = Glass, PL = Plastics, NP = Newspaper, CC = Corrugated Cardboard, MP = Mixed Paper, NF = Non-Ferrous Metals, FM = Ferrous Metals, W = Wood, FW = Food Waste, SS = Single Stream/Commingled, Adj. = Adjusted

OEPA-1 refers to a commercial entity that provided data directly to Ohio EPA but did not wish to have their information published. JC Penney Distribution Center data is from 2013; data for 2014 was not provided.

**Source:** 2013 and 2014 Ohio EPA MRF Reports, 2014 Data e-mailed from Ohio EPA directly to SWACO

**Sample Calculations:** Big Lots total (1,335 tons) – Adjustments (0 tons) = Adjusted Total (1,335 tons)

**Assumptions:** No adjustments were made to data reported to Ohio EPA. The tonnage in this table is assumed to not be reported by local end-markets.

**Table E-4. 2014 Other Recycling Programs/Other Sources of Data**

Other Recycling Programs or Other Sources of Data	HHW	ST	LAB	FW	SS	YW	Total	Adj.	Adjusted Total
Ohio EPA Scrap Tire Data	-	18,833	-	-	-	-	18,833	-	<b>18,833</b>
Household Hazardous Waste Collection	165	-	5	-	-	-	170	-	<b>170</b>
Residential Curbside Recycling	-	-	-	-	64,937	-	64,937	64,937	-
Residential Curbside Yard Waste Collection	-	-	-	-	-	51,337	51,337	-	<b>51,337</b>
Drop-Offs	-	-	-	-	9,523	-	9,523	9,523	-
Organics Diversion	-	-	-	8,241	-	232,814	241,055	53,545	<b>187,510</b>
<b>Total</b>	165	18,833	5	8,241	74,460	284,151	385,855	128,005	<b>257,851</b>
<b>Adjustments</b>	-	-	-	2,208	74,460	51,337	128,005		
<b>Adjusted Total</b>	165	18,833	5	6,033	-	232,814	257,851		

**Notes:**

HHW = Hazardous Household Waste, ST = Scrap Tires, LAB = Lead-Acid Batteries, FW = Food Waste, SS = Single Stream/Commingled, YW = Yard Waste, Adj. = Adjusted

**Source:** 2014 Ohio EPA Scrap Tire Report, SWACO internal program data, Table B-1, Table B-5

**Sample Calculations:** Single Stream (SS) total (74,460)– Adjustments (0) = Adjusted Total (74,460)

**Assumptions:** Single stream tonnage collected from the curbside and drop-off programs is reported by MRFs listed in Table E-2, and is therefore not credited toward diversion to avoid double counting.

Organics Diversion reflects food waste and yard waste reported in Table B-5. Only food waste from haulers, those materials composted by the Southeastern Correctional Institute, and a portion of materials accepted at Quasar, were credited to avoid double counting. Food waste reported by Paygro/A Garick Division (YW-1) in Table B-5 was not counted in this table because it is credited to the industrial sector. Only yard waste reported by registered composting facilities and YW-46 (the City of Columbus Compost Facility (Com-Til)) was credited to avoid double counting.

**Table E-5. Reference Year (2014) Residential/Commercial Material Reduced/Recycled**

Material	Tons
Appliances/ "White Goods"	840
Household Hazardous Waste	165
Electronics	990
Scrap Tires	18,833
Dry Cell Batteries	5

Material	Tons
Lead-Acid Batteries	102
Food	6,148
Glass	13,848
Ferrous Metals	31,816
Non-Ferrous Metals	3,894
Corrugated Cardboard	79,659
All Other Paper	63,890
Plastics	5,805
Textiles	2,349
Wood	8,941
Commingled Recyclables (Mixed)	2,626
Yard Waste	232,814
Other (Aggregated)	1,840
<b>Grand Total</b>	<b>474,566</b>

**Source:** 2014 ADR Calculation Spreadsheets, SWACO survey data, 2013-2014 Ohio EPA MRF Reports, 2014 Ohio EPA Scrap Tire Report, 2014 SWACO program data, 2014 Ohio EPA Compost Report, 2014 ADR Review Forms

**Table E-6. 2014 Quantities Recovered by Program/Source**

Program/Source of R/C Recycling Data	Tons
Scrap Yards	33,564
Processors	57,473
MRFs	11,539
Ohio EPA Retail Data	39,679
Ohio EPA Scrap Tire Data	18,833
Household Hazardous Waste Collection	170
Residential Curbside Recycling	64,937
Residential Curbside Yard Waste Collection	51,337
Drop-Offs	9,523
Organics Diversion	187,510
<b>Total</b>	<b>474,566</b>

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

Table E-6, "Quantities Recovered by Program/Source," was modified to represent the tonnage from individual programs and no longer matches other tables in Appendix E. In terms of the change to this table of information, the tonnage for the Residential Curbside Recycling and the Drop-Off program was listed, but was subtracted from the total presented for the MRFs. Program tonnage was reported as commingled, but the MRFs managing these materials listed tonnage by individual material, making adjustments in previous tables not possible. Residential Curbside Yard Waste Collection tonnage was subtracted from Organics Diversion to avoid double counting.

**Table E-6a1. Recycling Program/Source**

Year	Scrap Yards	Processors	MRFs	Ohio EPA Retail Data	Ohio EPA Scrap Tire Data	HHW Collection	Residential Curbside Recycling	Residential Curbside Yard Waste Collection	Drop-Offs	Organics Diversion	Totals
2010	26,046	32,923	67,593	7,637	19,581	122	46,299	55,837	15,924	133,848	405,811
2011	64,050	40,398	80,322	16,607	19,167	107	32,439	54,406	16,444	157,085	481,024
2012	39,126	19,050	76,546	16,284	19,722	162	42,159	49,285	14,843	104,300	381,476
2013	9,372	38,974	42,237	17,752	19,154	197	64,005	49,063	10,136	152,448	403,339
<b>2014</b>	<b>33,564</b>	<b>57,473</b>	<b>11,539</b>	<b>39,679</b>	<b>18,833</b>	<b>170</b>	<b>64,937</b>	<b>51,337</b>	<b>9,523</b>	<b>187,510</b>	<b>474,566</b>

**Note:**

Totals in Table E-6a1 have been adjusted to avoid double counting and do not reflect the true total from each source. For example, the total tonnage collected from curbside recycling programs and drop-offs was managed by a MRF. These totals have been subtracted from the total tonnage reported by MRFs.

**Table E-6a2. Annual % Change**

Year	Scrap Yards	Processors	MRFs	Ohio EPA Retail Data	Ohio EPA Scrap Tire Data	HHW Collection	Residential Curbside Recycling	Residential Curbside Yard Waste Collection	Drop-Offs	Organics Diversion	Totals
2010											
2011	146%	23%	19%	117%	-2%	-12%	-30%	-3%	3%	17%	19%
2012	-39%	-53%	-5%	-2%	3%	51%	30%	-9%	-10%	-34%	-21%
2013	-76%	105%	-45%	9%	-3%	22%	52%	0%	-32%	46%	6%
<b>2014</b>	<b>258%</b>	<b>47%</b>	<b>-73%</b>	<b>124%</b>	<b>-2%</b>	<b>-14%</b>	<b>1%</b>	<b>5%</b>	<b>-6%</b>	<b>23%</b>	<b>18%</b>
<b>Average Annual % Change</b>											
2010-2014	72%	30%	-26%	62%	-1%	12%	13%	-2%	-11%	13%	5%

Table E-6a3. Tonnage Change/Year

Year	Scrap Yards	Processors	MRFs	Ohio EPA Retail Data	Ohio EPA Scrap Tire Data	HHW	Residential Curbside Recycling	Residential Curbside Yard Waste Collection	Drop-Offs	Organics Diversion	Totals
2010											
2011	38,004	7,475	12,728	8,969	-414	-15	-13,861	-1,432	520	23,237	75,213
2012	-24,924	-21,348	-3,776	-323	555	55	9,721	-5,121	-1,601	-52,785	-99,548
2013	-29,754	19,924	-34,308	1,469	-567	36	21,846	-222	-4,707	48,148	21,863
<b>2014</b>	<b>24,192</b>	<b>18,499</b>	<b>-30,698</b>	<b>21,927</b>	<b>-321</b>	<b>-28</b>	<b>931</b>	<b>2,275</b>	<b>-613</b>	<b>35,062</b>	<b>71,226</b>
<b>Average Tonnage Change/Year</b>											
2010-2014	1,879	6,137	-14,014	8,010	-187	12	4,659	-1,125	-1,600	13,416	17,189
<b>Average Tons of Material Over 5 Years</b>											
2010-2014	34,432	37,764	55,647	19,592	19,292	152	49,968	51,986	13,374	147,038	429,243

Total recovery includes recycling, composting, and waste reduction from incineration. SWACO's historical recovery for the R/C sector over a five-year period spanning from 2010 to 2014 is presented in the following table:

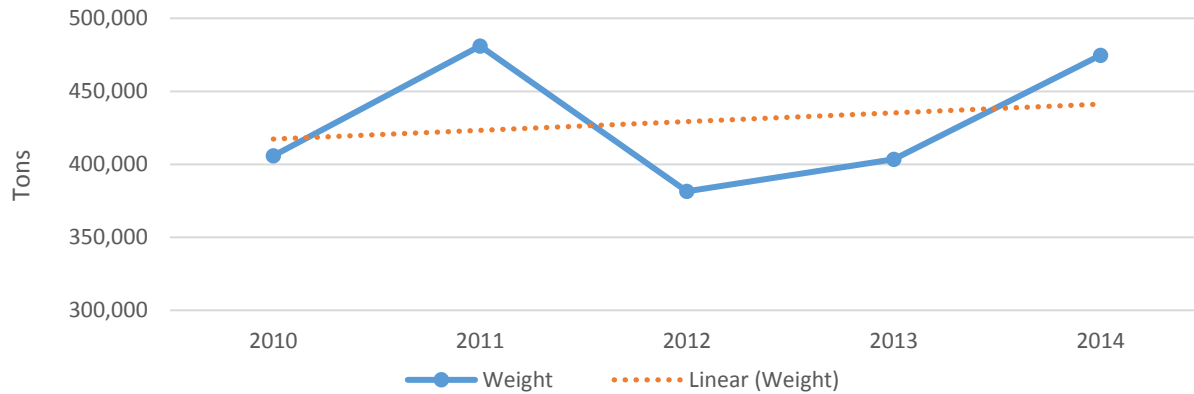
Table E-6b. Historical Recycling Analysis

Year	Residential/Commercial			
	Weight	Annual Percentage Change	Annual Tonnage Change	Annual Tonnage Change
2010	405,811	-----	-----	-----
2011	481,024	19%	75,212.6	75,213
2012	381,476	-21%	-99,548.053	-99,548
2013	403,339	6%	21,863.27	21,863
2014	474,566	18%	71,226.27	71,226
<b>2010-2014 Average</b>				
Average Annual Percentage Change				5%
Average Tons Over 5 Year Period				429,243
Average Annual Tonnage Change				17,189

An examination of the recovery patterns over this five-year period (2010-2014) reveals that a high of 481,024 tons was recovered in 2011; however, only one year later, 381,476 tons were recovered, which represents a low for the stated period. Waste reduction and diversion increased from 2010 to 2011 and from 2012 to 2014. Over the five-year period, recovery increased by an average of 17,189 tons, or 5%, annually. The recovery of 474,566 tons in 2014

was approximately 10.5% greater than the 2010-2014 average of 429,243 tons. The following figure presents the District’s historical R/C recovery totals from 2010 to 2014.

**Figure E-1. Historical Recycling Analysis: Residential/Commercial**



SWACO used the historical data discussed above to develop the projections shown in Table E-7. The categories included in this table are somewhat different than those envisioned in the Format v4.0 (and with previous tables in this Appendix) in order to associate tonnage projections with actual SWACO programs.<sup>1</sup> As explained in the note below Table E-7, projections after year 2023 are held constant due to the increasing level of uncertainty for projection assumptions and methodology.

**Table E-7. Residential/Commercial Recovery Projections by Program/Source**

Year	Curbside Recycling	Drop-off Recycling	HHW	E-Waste	Yard Waste Management		Food Waste Management	Ohio EPA Scrap Tire Data	Data Collection	Totals
					YW Facilities	YW Curbside Collection				
2010	31,298	15,924	231	1	131,911	55,837	1,937	19,581	148,982	405,702
2011	32,439	16,444	122	344	154,601	54,406	2,484	19,167	201,002	481,009
2012	42,124	14,843	162	4,339	100,408	49,285	3,814	19,722	146,779	381,476
2013	64,200	10,136	197	880	150,565	49,063	1,883	19,154	107,262	403,340
<b>2014</b>	<b>64,939</b>	<b>9,523</b>	<b>211</b>	<b>990</b>	<b>181,474</b>	<b>51,340</b>	<b>6,148</b>	<b>18,833</b>	141,107	<b>474,565</b>
2015	68,557	9,087	400	884	135,709	53,425	14,714	18,455	386,184	687,415
2016	68,753	8,724	400	893	141,239	50,552	14,788	18,455	391,395	695,199
2017	68,949	8,375	400	902	141,148	51,986	14,862	18,455	400,745	705,822
2018	69,146	8,040	400	911	141,065	53,420	14,936	18,455	410,284	716,658
2019	69,344	7,718	400	920	140,992	54,855	15,011	18,455	420,017	727,712
2020	69,542	7,409	400	930	140,929	56,289	15,086	18,455	429,949	738,988

<sup>1</sup> Tonnage amounts for some categories are also slightly different than shown in previous tables due to adjustments that were made when allocating tonnages according to program.



Year	Curbside Recycling	Drop-off Recycling	HHW	E-Waste	Yard Waste Management		Food Waste Management	Ohio EPA Scrap Tire Data	Data Collection	Totals
					YW Facilities	YW Curbside Collection				
2021	69,741	7,113	400	939	142,309	56,289	15,161	18,455	440,085	750,492
2022	69,940	7,084	400	948	143,700	56,289	15,237	18,455	439,913	751,966
2023	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2024	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2025	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2026	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2027	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2028	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2029	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2030	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2031	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356
2032	70,140	7,056	400	958	145,100	56,289	15,313	18,455	439,646	753,356

The remainder of this Appendix provides explanations for each of the projections for categories included in Table E-7.

**Curbside Recycling.** Every year materials captured through curbside recycling programs have increased. The most notable increase occurred when the City of Columbus implemented the non-subscription program. A linear trend-line from 2010 to 2014 results in an annual increase of 13% per year (based on Table E-6a2). However, maintaining a 13% per year increase through the planning period is likely to be unrealistic when the majority of the programs are already mature, and 96% of all single-family households are currently being serviced with the non-subscription curbside. Additional increases in recovery can be expected by adding best practices such as PAYT or rolling carts. These types of best practices will be encouraged by SWACO throughout the planning period. Increases are conservatively estimated at a 2% increase over the first six years of the planning period.

**Recycling Drop-Off.** SWACO expects program changes after a study on the program is conducted. Since these changes have not yet been identified, modeling was not performed to calculate projected program tonnages. Tonnages are projected to decrease based on the decreasing annual trend of 4% through year 2023. Beyond 2023, projections are held constant.

**HHW Management.** Tonnages for HHW management have historically ranged between 100 and 200 tons. However, in 2015, an increase in material was reported (400 tons) as a result of better data tracking. The reported 2015 tonnage is held constant through the planning period.

**Electronics Management.** Electronics reported through Table E-7 are recovered through third party/non-program sources available in the District. SWACO began a new electronics program in 2016 and expects increased recycling tonnages. Based upon the U.S. generation rate of

26.9 pounds of electronics per person, several thousand tons of e-waste are projected to be generated within the District each year. Using California's 4.69 pounds per person e-waste recycling data (includes businesses), it is estimated SWACO could potentially recycle 2,829 tons of e-waste. Assuming program changes will increase recycling towards the per capita calculation projections, a modest increase at 1% annually is projected through year 2023.

**Yard Waste Management.** A linear trend-line for 2010 through 2014 demonstrates that yard waste recovery is increasing, even though recovery decreased in 2012. The average annual increase is 0.7%. This trend is applied to the 2015 reported data to forecast yard waste management projections through year 2023.

**Food Waste Management.** Roughly 13% of the waste landfilled is food waste, or more than 100,000 tons. The documented historical average annual increase is 5.7%. Some of this recovery is dependent upon factors outside SWACO's control, thus, a conservative annual increase is projected at 0.5% throughout year 2023, based upon food waste management strategies to be implemented during the planning period.

**Ohio EPA Scrap Tire Data.** Scrap tire recovery has historically been consistent, and this trend is projected to continue through the planning period.

**Data Collection.** Tonnages attributed to Data Collection are recovered by third party/non-program sources. Better data collection efforts in 2015 resulted in an increase in recycling to more than 41% for the residential/commercial sector. This substantial increase in tonnages demonstrated by data outreach is expected to continue increasing slightly, then plateau by year 2022. Commercial businesses, scrap yards, processors, and MRF data was separately evaluated to determine historical trends. Scrap yards, processors, and commercial businesses showed increasing trends of recovery, while data from MRFs indicated a decreasing trend. The annual increase calculated from 2016 to 2023 is just over 1% and is supported by improved data collection from processors and brokers resulting in newly-identified recycling efforts taking place in the District. Increased education and outreach to citizens and businesses will also contribute toward recycling program increases throughout the planning period.



# APPENDIX F

## INDUSTRIAL SECTOR REFERENCE YEAR RECYCLING



## APPENDIX F INDUSTRIAL REDUCTION AND RECYCLING DATA

This Appendix presents the reduction and recycling data for the industrial sector in the 2014 reference year. In order to avoid double-counting tonnage, adjustments made to tonnage reported by different types of entities, such as programs, brokers, and scrap yards, will be demonstrated. A historic analysis of the industrial sector's recycling is included in this Appendix. Information in this section as well as information from other sources was used to calculate the recycling projections from 2015 to the end of the planning period (2032) which are included at the end of this Appendix.

### A. Reference Year Recovery Data

SWACO does not survey industrial entities; therefore, Table F-1, "Industrial Survey Results," has been omitted.

**Table F-2. 2014 Data from Other Recycling Facilities**

Source	GL	FM	NF	CC	MP	PL	W	SS	Total	Adj.	Adj. Total
<b>Buybacks</b>											
None									-	-	-
<b>Scrap Yards</b>											
SY1	-	8,527	1,301	-	-	-	-	-	9,828	-	<b>9,828</b>
SY2	-	5,348	28	-	-	-	-	-	5,376	-	<b>5,376</b>
<b>Total</b>	-	<b>13,875</b>	<b>1,329</b>	-	-	-	-	-	<b>15,204</b>	-	<b>15,204</b>
<b>Adj.</b>	-	-	-	-	-	-	-	-	-		
<b>Adj. Total</b>	-	<b>13,875</b>	<b>1,329</b>	-	-	-	-	-	<b>15,204</b>		
<b>Processors</b>											
PR1	-	-	-	77,915	19,479	-	-	-	97,394	-	<b>97,394</b>
PR4	-	485	-	29	4	-	140	-	658	-	<b>658</b>
PR6	-	-	-	-	-	-	-	29	29	-	<b>29</b>
PR15	-	-	-	80	-	-	15,000	-	15,080	-	<b>15,080</b>
PR20	85	9	264	20,657	18,520	2,532	-	-	42,067	-	<b>42,067</b>
<b>Total</b>	<b>85</b>	<b>494</b>	<b>264</b>	<b>98,681</b>	<b>38,003</b>	<b>2,532</b>	<b>15,140</b>	<b>29</b>	<b>155,227</b>	-	<b>155,227</b>
<b>Adj.</b>	-	-	-	-	-	-	-	-	-		
<b>Adj. Total</b>	<b>85</b>	<b>494</b>	<b>264</b>	<b>98,681</b>	<b>38,003</b>	<b>2,532</b>	<b>15,140</b>	<b>29</b>	<b>155,227</b>		
<b>MRF's</b>											
MRF1	250	37	227	2,464	990	342	82	-	4,391	-	<b>4,391</b>
MRF5	-	-	-	1,346	-	-	-	1,543	2,889	-	<b>2,889</b>
<b>Total</b>	<b>250</b>	<b>37</b>	<b>227</b>	<b>3,810</b>	<b>990</b>	<b>342</b>	<b>82</b>	<b>1,543</b>	<b>7,280</b>	-	<b>7,280</b>
<b>Adj.</b>	-	-	-	-	-	-	-	-	-		
<b>Adj. Total</b>	<b>250</b>	<b>37</b>	<b>227</b>	<b>3,810</b>	<b>990</b>	<b>342</b>	<b>82</b>	<b>1,543</b>	<b>7,280</b>		
<b>Total</b>	<b>335</b>	<b>14,405</b>	<b>1,820</b>	<b>102,491</b>	<b>38,992</b>	<b>2,874</b>	<b>15,223</b>	<b>1,572</b>	<b>177,711</b>		

**Notes:**

GL = Glass, FM = Ferrous Metals, NF = Non-Ferrous Metals, CC = Corrugated Cardboard, MP = Mixed Paper, PL = Plastics, W = Wood, SS = Single Stream/Commingled

**Source(s) of Information:** SWACO survey data, 2014 Ohio EPA MRF Report

**Sample Calculations (MRF1):** Total (4,391) – adjustment (0) = Adjusted total (4,391)

**Assumptions:** Tonnage in this table reported by scrap yards, processors, and MRFs is not double counted; therefore, no adjustments were necessary.

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

Responses are evaluated by comparing data submitted by each entity from previous years. Significant increases or decreases in overall tonnage, or tonnage reported for each sector are investigated using a variety of strategies, which include (1) contacting the respondent, verifying tonnage, and asking for an explanation, (2) identifying fluctuations in the economy/market that could cause tonnage to fluctuate, and (3) researching changes to the survey respondent's establishment such as a company merger, receiving a Notice of Violation, or unexpected events impacting operations such as a facility fire, etc.

Clear instructions are presented on the survey which instruct survey respondents to only include tonnage generated within SWACO's jurisdiction. Survey respondents are also instructed to refrain from reporting any metals from auto bodies, train boxcars, or construction and demolition debris (C&DD).

Responses are thoughtfully reviewed to ensure materials are not handled by more than one entity surveyed. The data used to compile the industrial sector's annual recycling totals are reported typically by end users, brokers, and processors. Adjustments are not frequently necessary for the industrial sector because program data is not factored in, as it is on the R/C sector totals.

**Table F-3. 2014 Other Recycling Programs/Other Sources of Data**

Source	Food Waste	Total	Adjustments	Adjusted Total
Industrial Food Waste Composting	657	657	-	657
<b>Total</b>	657	657	-	657
<b>Adjustments</b>	-	-		
<b>Adjusted Total</b>	<b>657</b>	<b>657</b>		

**Source:** 2014 Ohio EPA Compost Report, Table B-5.

**Sample Calculations:** Industrial Food Waste Composting (657) – Adjustments (0) = Adjusted Total (657).

**Assumptions:** Industrial Food Waste Composting was taken from Ohio EPA’s compost report. Food waste reported by haulers, grocery stores including Kroger and Walmart, Quasar, and the Southeastern Correctional Institute was credited to the R/C sector. Food waste reported by Ohio Mulch and Price Farm Organics was not counted for either sector because food waste haulers (Viridiun and Future Organics) reported using these facilities to manage food waste. Paygro/A Garick Division did not accept waste from the food waste haulers that reported to Ohio EPA, and can therefore be credited without double counting materials.

**Table F-4. Reference Year (2014) Industrial Waste Reduced**

Material	Quantity (tons)
Food	657
Glass	335
Ferrous Metals	14,405
Non-Ferrous Metals	1,820
Corrugated Cardboard	102,491
All Other Paper	38,992
Plastics	2,874
Wood	15,223
Commingled Recyclables (Mixed)	1,572
<b>Recycling Subtotals</b>	<b>178,368</b>
Incineration	0
<b>Grand Total</b>	<b>178,368</b>

**Source:** 2014 ADR Calculation Spreadsheets, 2014 Ohio EPA MRF Reports, 2014 Ohio EPA Compost Report, 2014 ADR Review Forms.

**Sample Calculations:** Recycling Subtotal (178,368) + Waste Reduced by Incineration (0) = Grand Total (178,368)

**Table F-4. Reference Year (2014) Industrial Material Recovered**

Program/Source of Industrial Recycling Data	Quantities (Tons)
Scrap Yards	15,204
Processors	155,227
MRFs	7,280
Compost Facilities	657
<b>Total</b>	<b>178,368</b>

Source: Tables F-2 and F-3

## B. Historical Recovery

An examination of the recovery patterns over the five-year period (2010–2014) reveals the highest amount (370,691 tons) was recovered in 2012, while the lowest amount (160,158 tons) was recovered in 2010. The above data show diversion efforts improved from 2010 to 2012, with a significant increase in tonnage reported in 2012 by a broker of secondary fibers. However, this broker reported decreases in recovered fibers from the industrial sector in years 2013 and 2014; this decline was also reflected in the overall amount recycled from the industrial sector from 2012 to 2014.

**Table F-5a1. Recycling Program/Source**

Year	Industrial Survey	Scrap Yards	Processors	MRFs	Compost Facilities	Totals
2010	2,453	74,836	53,666	29,204	0	160,158
2011	0	78,600	52,806	45,354	0	176,760
2012	0	58,666	279,811	22,360	9,854	370,691
2013	0	11,215	280,825	52,198	3,475	347,712
2014	0	15,204	155,227	7,280	657	178,368

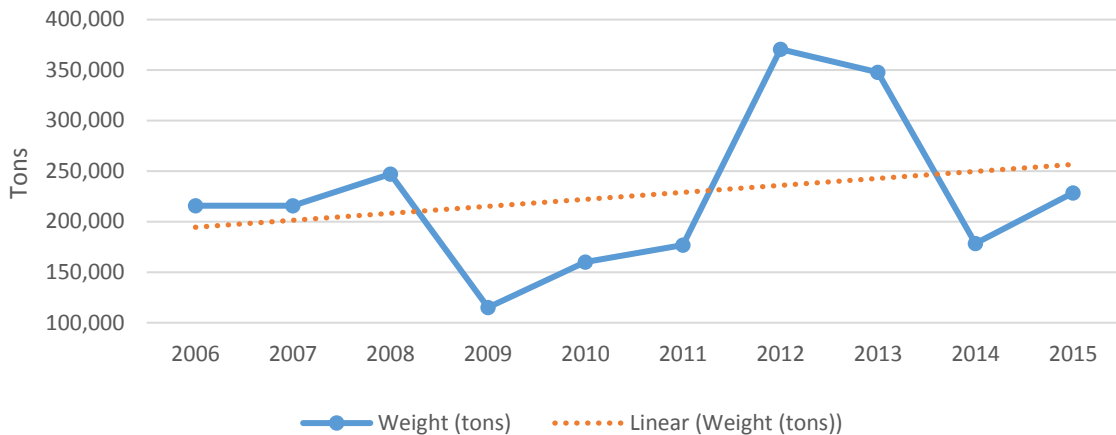
**Table F-5a2. Historical Industrial Recycling Analysis**

Year	2010	2011	2012	2013	2014	2010-2014 Average
Total Recycling	160,158	176,760	370,691	347,712	178,368	246,738
Annual % Change		10%	110%	-6%	-49%	16%
Tonnage Change/Year		16,602	193,931	(22,979)	(169,344)	4,553

Despite these few years where recycling rates seem to have subsided, when considering the five-year period in the aggregate, recovery increased by an average of 4,553 tons, or 16% annually. SWACO's recovery of 178,368 tons in 2014 was approximately 27.7% less

than the 2010-2014 average of 246,738 tons. The following figure presents the SWACO’s historical industrial recovery totals from 2010 to 2014.

**Figure F-1. Historical Recycling Analysis: Industrial**



**C. Industrial Recovery Projections**

As depicted in Figure F-1 above, industrial recycling tonnages within the District have shown a great degree of variability over time, resulting in considerable difficulty establishing accurate projections. Tonnages dipped to their lowest levels in 2009 (probably as a result of the economic downturn), followed by the highest amount of recovery in 2012, and then another very substantial decrease two years later. The linear trend-line for this data predicts approximately 250,000 tons of recycling for 2015, which compares to an actual tonnage of slightly more than 228,000.<sup>1</sup> If the highest and lowest values are removed in calculating the average over the ten-year period (2006 through 2015), the result is a value of 221,000 tons recycled. In order to take a conservative approach, and to address the historical variability and uncertainty associated with determining industrial recycling into the future, the tonnage reported for 2015 (228,338 tons) has been projected throughout the planning period. (See Table F-6.)

<sup>1</sup> Recycling tonnage for 2015 is based upon adjustments made to the June 1, 2016 submittal of SWACO’s Annual District Report (ADR). At the time this Appendix was prepared, a revision to the ADR and recycling estimates had been submitted to Ohio EPA, and these revisions are reflected in this appendix.



**Table F-6. Industrial Recovery Projections by Program/Source**

	Year	Totals
X  First Year of Planning Period →	<b>2014</b>	<b>178,368</b>
	2015	228,338
	2016	228,338
	2017	228,338
	2018	228,338
	2019	228,338
	2020	228,338
	2021	228,338
	2022	228,338
	2023	228,338
	2024	228,338
	2025	228,338
	2026	228,338
	2027	228,338
	2028	228,338
	2029	228,338
	2030	228,338
	2031	228,338
	2032	228,338

According to Ohio EPA’s Plan Format v4.0, if a solid waste authority met the industrial reduction/recycling goal of 66% during the reference year, it is acceptable to project a constant quantity of industrial material to be recovered at the reference year quantity throughout the planning period. During the reference year (2014), the industrial sector exceeded the reduction/recycling goal of 66% and achieved a 79.8% recycling rate. The industrial recycling rate is projected to reach nearly 85% throughout the planning period.



# APPENDIX G

## WASTE GENERATION



## APPENDIX G WASTE GENERATION

### A. Historical Year Waste Generated

The historical waste generation for the District from 2010 through 2014 is shown in Table G-1 below. Generation has been calculated based on the sum of reported tons disposed and recycled for each year. In general, disposal decreased while recycling has increased during this time period. However, significant fluctuation occurred in these trends for both R/C and industrial sectors. The per capita generation rate for total generation experienced a decrease from 7.9 to 7.2 pounds per person per day (PPD).

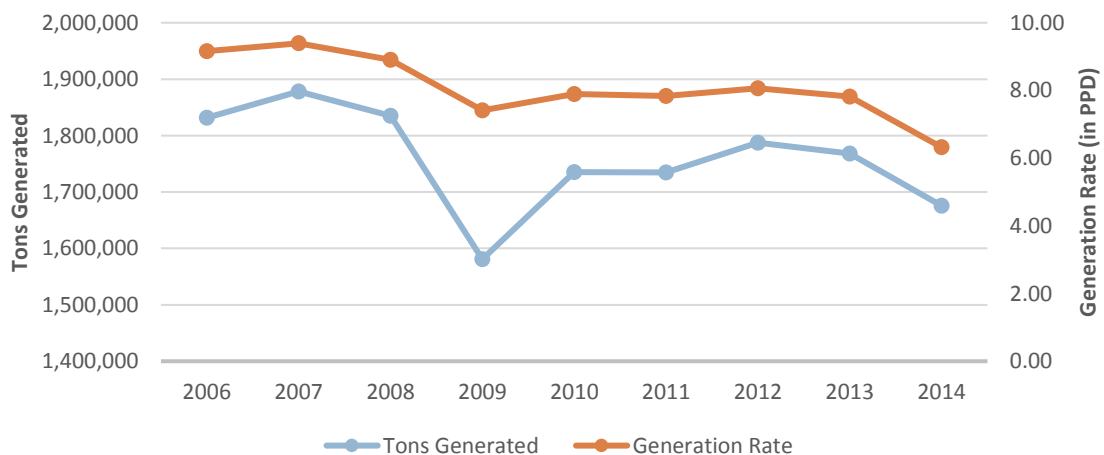
**Table G-1. Reference Year and Historical Waste Generated**

Year	Population	Residential/ Commercial		Industrial		Total	Per Capita Generation (ppd)	Annual % Change in Total Tons
		Disposal	Recycled	Disposal	Recycled			
2010	1,204,957	1,084,132	405,702	84,930	160,158	1,734,922	7.9	-
2011	1,213,196	1,035,694	481,009	40,983	176,760	1,734,446	7.8	0.0%
2012	1,213,967	998,722	381,476	36,577	370,691	1,787,466	8.1	3.1%
2013	1,239,715	972,383	403,340	44,830	347,712	1,768,266	7.8	-1.1%
<b>2014</b>	<b>1,274,732</b>	<b>977,451</b>	<b>474,565</b>	<b>45,145</b>	<b>178,368</b>	<b>1,675,529</b>	<b>7.2</b>	<b>-5.2%</b>

**Source(s) of Information:** Ohio EPA Facility Data Reports and ADR Review Forms, SWACO Annual District Reports.

Figure G-1 shows the waste generation over a longer historical period. Both the tons generated and the per capita generation rate (PPD) show declining trends over this time period.

**Figure G-1. SWACO Total Generation: 2006-2014**



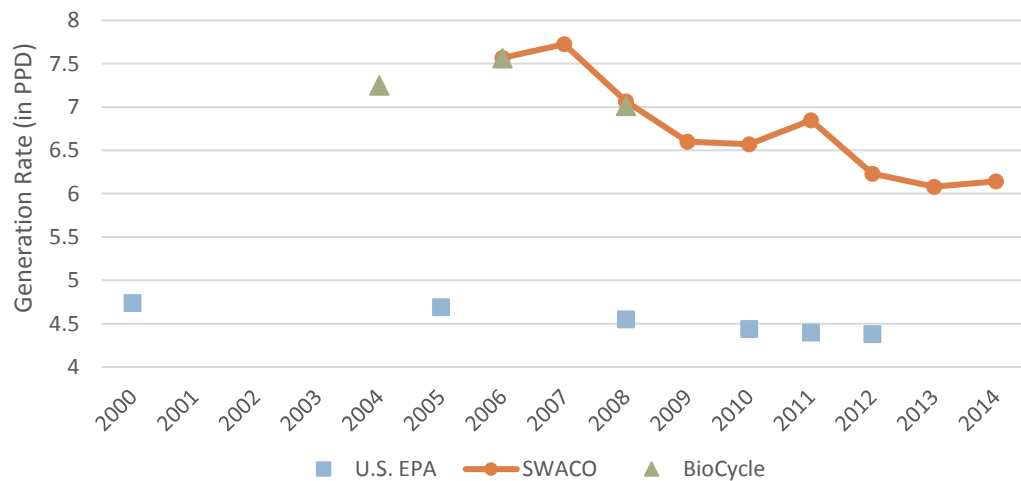
**1. Residential/Commercial Waste**

As discussed in Appendix D, the national waste generation rates based upon U.S. EPA documents are much lower than SWACO’s generation rate or generation rates for the other urban Ohio SWMDs. For example, the national MSW generation rate<sup>1</sup> for 2012 was estimated to be 4.38 PPD. However, SWACO’s MSW generation rate for 2012 was 6.23 PPD.

At least part of the difference between these rates can be explained based upon the inclusion of both urban and rural areas into the national rate. Since rural areas traditionally have lower generation rates than urban areas, as seen in Ohio and elsewhere, this likely contributes to the lower national rate as compared to that of an urban Ohio area like SWACO’s District. Also, the national generation rate relies on a modeling methodology, rather than the sum of tons disposed plus tons recycled, to determine generation.

National waste generation has also been estimated by *BioCycle Magazine* by surveying State agencies responsible for regulating solid waste. Estimates compiled by *BioCycle* utilized disposal plus recycling for determining generation, and, therefore, generation rates are relatively consistent with SWACO generation rates. (See Figure G-2.)

**Figure G-2. MSW Generation Rates: National vs. SWACO**

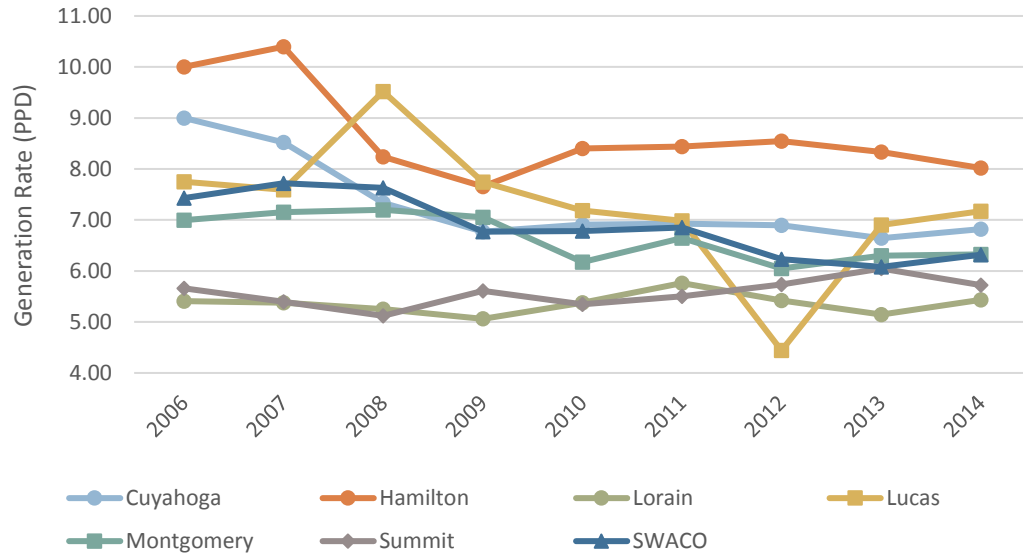


The national MSW generation rates and SWACO’s generation rate have been declining, as illustrated by Figure G-2. However, SWACO’s generation rate has declined much more rapidly than U.S. EPA’s generation rate estimate. As the

<sup>1</sup> For purposes of this analysis, MSW or municipal solid waste is considered synonymous with residential/commercial waste.

recycling rate in PPD has remained relatively constant for SWACO since 2006, the disposal rate has decreased and has resulted in the declining total MSW generation rate. Although other urban SWMDs in Ohio have experienced falling MSW generation rates since 2006, these generation rates have generally leveled off in the last four or five years. (See Figure G-3 below.)

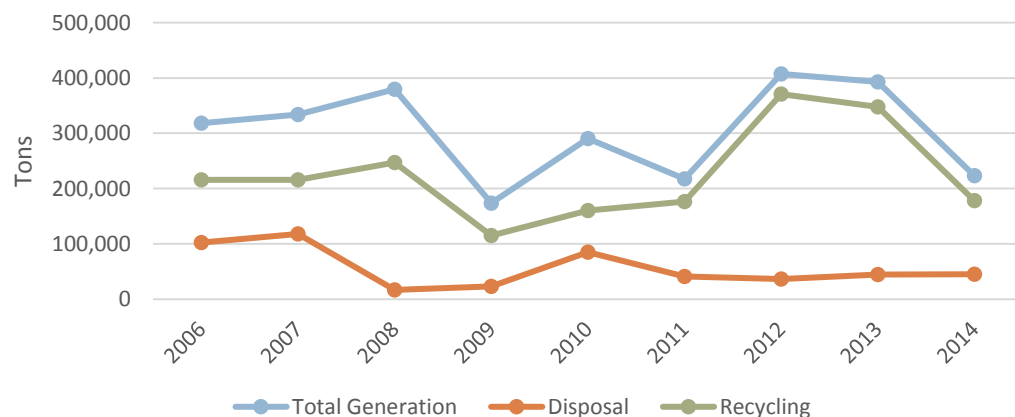
**Figure G-3. MSW Generation Rates for Selected Ohio Urban SWMDs**



**2. Industrial Waste**

Industrial waste generation has also declined for SWACO since 2006, although the District has experienced considerable variability in the tons generated during this time period. As illustrated in Figure G-4, the amount of industrial recycling has been the larger contributing factor for the variability in total industrial generation.

**Figure G-4. SWACO Industrial Waste Generation**



**3. Excluded Waste**

Excluded waste was less than 10 percent of the total waste disposed in the reference year, and as a result, has not been included in this analysis.

**B. Generation Projections**

Generation projections for the District’s disposal and recycling have been developed in Appendices D, E and F for disposal and recycling for the R/C and industrial sectors. These projections which are presented in detail in Appendices D, E and F are summarized below in Table G-2. Consistent with historical trends for SWACO, total generation is expected to fluctuate slightly until year 2023, then remain constant throughout the remainder of the planning period.

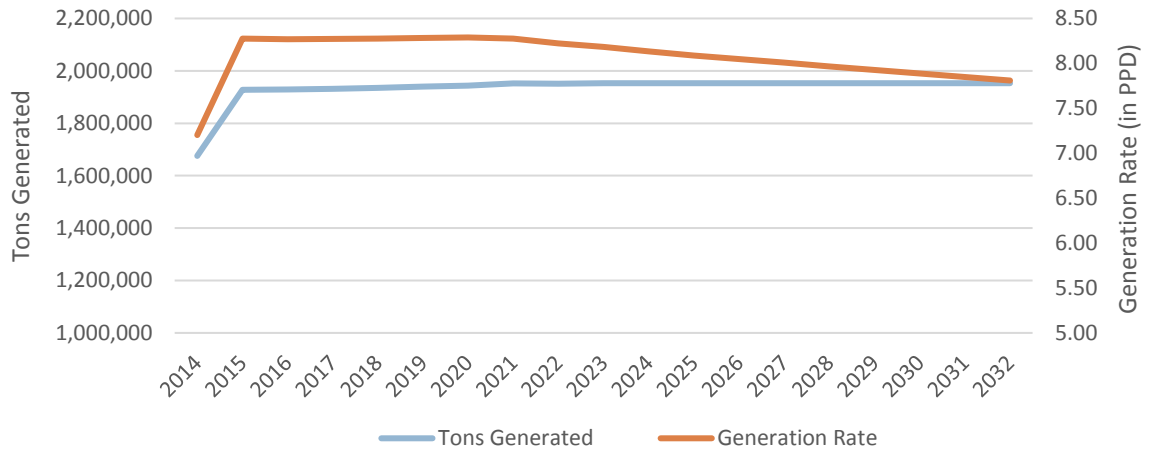
**Table G-2. Generation Projections**

	Year	Population	Residential/ Commercial		Industrial		Total	Per Capita Generation (ppd)	Annual % Change in Total Tons
			Disposal	Recycle	Disposal	Recycle			
			First Year of Planning Period →						
X	2014	1,274,732	977,451	474,565	45,145	178,368	1,675,529	7.20	-----
	2015	1,276,447	970,308	687,415	41,777	228,338	1,927,838	8.28	15.06%
	2016	1,278,172	963,223	695,199	41,670	228,338	1,928,431	8.27	0.03%
	2017	1,279,905	956,195	705,822	41,564	228,338	1,931,919	8.27	0.18%
	2018	1,281,648	949,224	716,658	41,458	228,338	1,935,678	8.28	0.19%
	2019	1,283,401	942,309	727,712	41,352	228,338	1,939,711	8.28	0.21%
	2020	1,285,164	935,449	738,988	41,247	228,338	1,944,022	8.29	0.22%
	2021	1,292,714	932,814	750,492	41,141	228,338	1,952,785	8.28	0.45%
	2022	1,300,274	930,162	751,966	41,036	228,338	1,951,502	8.22	-0.07%
	2023	1,307,844	930,162	753,356	41,036	228,338	1,952,892	8.18	0.07%
	2024	1,315,425	930,162	753,356	41,036	228,338	1,952,892	8.13	0.00%
	2025	1,323,016	930,162	753,356	41,036	228,338	1,952,892	8.09	0.00%
	2026	1,329,704	930,162	753,356	41,036	228,338	1,952,892	8.05	0.00%
	2027	1,336,403	930,162	753,356	41,036	228,338	1,952,892	8.01	0.00%
	2028	1,343,113	930,162	753,356	41,036	228,338	1,952,892	7.97	0.00%
	2029	1,349,834	930,162	753,356	41,036	228,338	1,952,892	7.93	0.00%
	2030	1,356,566	930,162	753,356	41,036	228,338	1,952,892	7.89	0.00%
	2031	1,363,402	930,162	753,356	41,036	228,338	1,952,892	7.85	0.00%
	2032	1,370,250	930,162	753,356	41,036	228,338	1,952,892	7.81	0.00%

Figure G-5 is a graphical representation of total generation shown in Table G-2. Tons generated are expected to increase initially until year 2023. The generation rate follows

the trend of tons generated until year 2020 when it begins a slow decline due to the continued increase projected for District population.

**Figure G-5. SWACO Total Generation Projections**





# APPENDIX H

## STRATEGIC EVALUATION





## APPENDIX H STRATEGIC EVALUATION

SWACO has a new mission and vision for the future. The mission is to improve the community’s solid waste stream through effective waste reduction, diversion and disposal. The vision is for a community that is environmentally safe and resourceful. SWACO aspires to be on the forefront of environmentally-responsible and sustainable practices for waste disposal with a dedication to responsibly managing the waste stream, meeting the environmental needs and to leverage the resources from the waste stream to benefit the Central Ohio community. In preparing this Plan Update, this new mission and vision was considered and incorporated into all aspects of the Plan.

The analysis required in this Appendix is intended to provide a holistic review of SWACO’s programs developed to meet the goals of the 2009 State Plan. Elements of these analyses will be used to devise programs to meet the new direction of SWACO. This means program ideals for an integrated, self-sufficient system focusing on the waste management hierarchy are devised in a manner to be self-sustaining, incorporating self-correcting methodologies so vital resources and time can be used most effectively.

Please note that these evaluations were conducted as part of the planning process, and should not be final or representative of a holistic programs evaluation. Additional best practice research and/or benchmarking will be used when evaluating existing and new programming.

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**A. Residential Recycling Infrastructure Analysis**

This evaluation of SWACO’s existing residential recycling infrastructure determines whether the needs of the residential sector are being met and if the infrastructure is adequately performing. The analysis conducted here for this plan is extensive, delving deep into the residential infrastructure. SWACO’s residential recycling infrastructure consists of curbside programs, recycling drop-off program, special event drop-offs, take-back retailers, reuse centers, thrift stores, network of food banks and compost facilities. SWACO’s role instituting this network of available opportunities varies. This analysis provides a detailed discussion of SWACO’s role and analyzes the system.

In 2014, curbside and drop-off programs recycled 74,460 tons.

**1. Curbside Recycling**

Curbside recycling is a decentralized system of for-profit and government agency operations. SWACO does not operate/provide for curbside recycling services. The District encompasses 41 political entities. In 2014, five haulers offered curbside collection service. All five haulers collect recyclables in a single, commingled stream. The standard set of single stream recyclable materials includes cardboard, mixed paper, plastic bottleneck containers, steel/tin/aluminum cans and glass. The frequency and method of collection (bins or carts) varies per community throughout the District. All haulers providing curbside service, also provide non-subscription service.

Since 2008, tonnages recycled and the number of incorporated entities implementing curbside programs increased. In 2014, twenty incorporated municipalities had non-subscription curbside recycling programs. As shown in Table H-1, recycling increased since the last Plan from 47,403 to 61,973 tons; an almost 31% increase. The increase is largely attributed to City of Columbus. In 2008, the City of Columbus had a subscription based curbside program that was phased into a non-subscription curbside program beginning in 2011.

**Table H-1. Incorporated Community Curbside Recycling**

Incorporated Curbside Communities	2008 Tons	2014 Tons	2014 pounds/ Household
City of Bexley	1,328	1,322	615
Village of Brice	-	5	217
City of Columbus	19,562	33,983	203
City of Dublin	4,723	5,165	795
City of Gahanna	3,308	2,568	521
City of Grandview Heights and Marble Cliff <sup>1</sup>	732	882	504

Incorporated Curbside Communities	2008 Tons	2014 Tons	2014 pounds/ Household
City of Grove City and Jackson Township <sup>1</sup>	2,086	2,106	351
City of Groveport	DNR	225	209
City of Hilliard	2,426	2,589	561
Village of New Albany	412	1,048	806
City of Reynoldsburg	2,053	2,010	406
Village of Riverlea	DNR	78	670
City of Upper Arlington	5,202	4,608	692
Village of Urbancrest	-	25	250
City of Westerville	3,352	3,137	558
City of Whitehall	545	544	207
City of Worthington	1,509	1,615	621
Village of Minerva Park <sup>2</sup>	DNR	40	148
Village of Valleyview	165	23	167
<b>TOTAL</b>	<b>47,403</b>	<b>61,973</b>	

**Notes:**

<sup>1</sup>Hauler provides data including both the city and township but the contracts are set up through each governing body. Household counts are taken from Grandview Heights and Grove City contracts. At the time of this analysis it is uncertain if the household counts include Marble Cliff and Jackson Township.

<sup>2</sup>Household counts was obtained from "Population and Household Counts for Governmental Units: 2010, 2000, and 1990" August 2011 published by Ohio Department of Development.

**Source:** 2011 Approved Plan and Re-TRAC 2014 data

Tonnages recycled and the number of communities implementing curbside recycling programs also increased for unincorporated entities. In 2014, thirteen townships had non-subscription curbside. As shown in Table H-2 (one township was included above with the incorporated communities), recycling increased since the last Plan Update from 1,877 to 2,966 tons; a 58% increase. One township Clinton Township switched from a subscription to a non-subscription curbside program.

**Table H-2. Unincorporated Community Curbside Recycling**

Unincorporated Curbside Communities	2008 Tons	2014 Tons	2014 pounds/ household
Blendon Township	DNR	336	274
Clinton Township	DNR	159	222
Jefferson Township <sup>1</sup>	565	648	357
Madison Township	343	438	283
Norwich Township <sup>2</sup>	DNR	308	372
Perry Township <sup>3</sup>	249	99	148
Plain Township	375	243	608
Pleasant Township	-	263	309

Unincorporated Curbside Communities	2008 Tons	2014 Tons	2014 pounds/household
Truro Township	51	13	84
Washington Township	148	270	831
Franklin Township	-	189	135
Mifflin Township	146	Did not report	-
<b>TOTAL</b>	<b>1,877</b>	<b>2,966</b>	

**Notes:**

<sup>1</sup>Reynoldsburg is located in Jefferson Township. Households for Reynoldsburg were excluded. Household counts was obtained from “Population and Household Counts for Governmental Units: 2010, 2000, and 1990” August 2011 published by Ohio Department of Development.

<sup>2</sup>Hilliard is located in Norwich Township. Households for Hilliard were excluded. Household counts was obtained from “Population and Household Counts for Governmental Units: 2010, 2000, and 1990” August 2011 published by Ohio Department of Development.

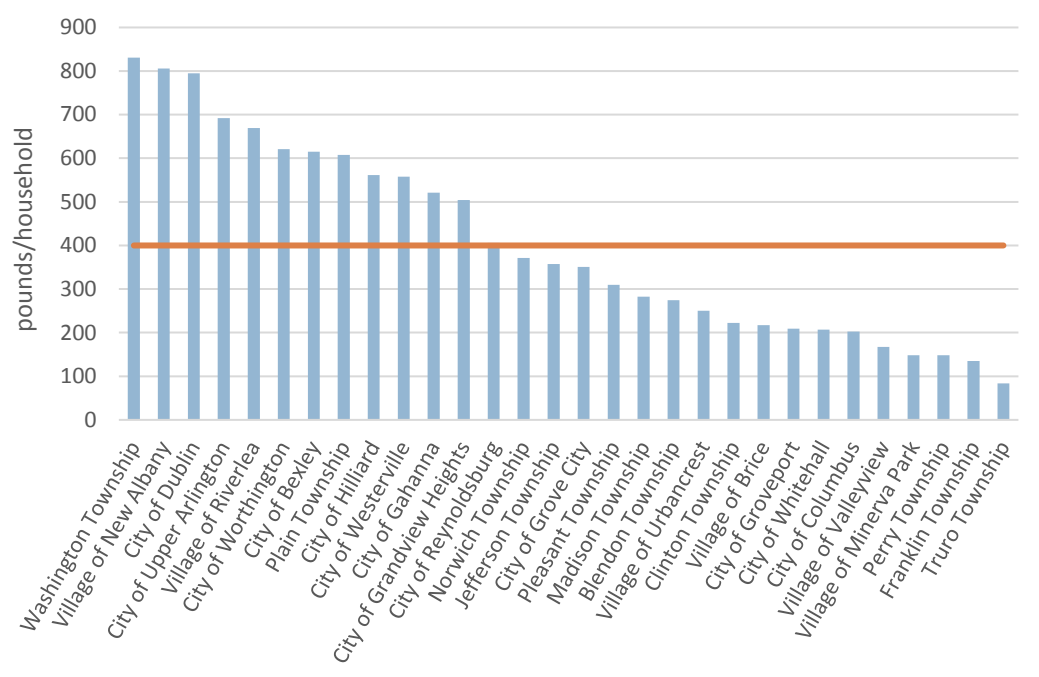
<sup>3</sup>Household counts was obtained from “Population and Household Counts for Governmental Units: 2010, 2000, and 1990” August 2011 published by Ohio Department of Development.

**Source:** 2011 Approved Plan and Re-TRAC Connect 2014 data

Both Tables H-1 and H-2 show calculated data of pounds recovered per household. Household counts are taken from contracts held between the community and the hauler unless otherwise noted. Household counts represent all persons occupying a housing unit. It is not an indicator of single-family or multi-family units. Single-family versus multi-family households being serviced with curbside recycling is an area that SWACO has not clearly identified. At this time, it is assumed the majority of curbside service is to single-family households.

Figure H-1 shows the pounds per household recovery achieved in the political entities in 2014. The red line represents a well-functioning recovery program mark of 400 pounds/household/year. As shown, communities falling below the 400 pounds/household/year mark have room for improving their programs to achieve more recovery.

**Figure H-1. Community Curbside Recycling**

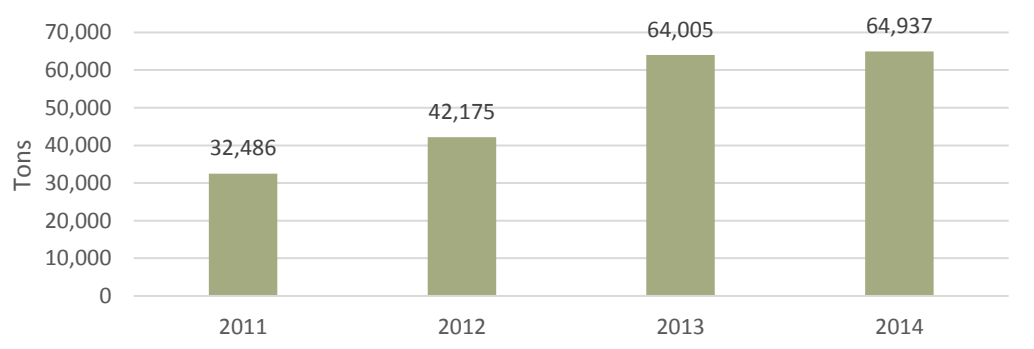


As noted earlier in this section, the City of Columbus’ non-subscription curbside program attributed the largest increase in recycling tonnage. However, the City has room to improve pounds/household/year performance.

Best practices such as weekly collection, switching from bins to roll carts, incentives and increased education and outreach are proven ways to increase tonnage in a community. In communities like Upper Arlington, recycling approximately 692 pounds/household/year, utilization of volume-based billing (Pay-As-You-Throw or PAYT) and weekly collection has increased recycling rates.

As shown in Figure H-2, over the past four years curbside recycling programs follow an increasing trend in tons collected.

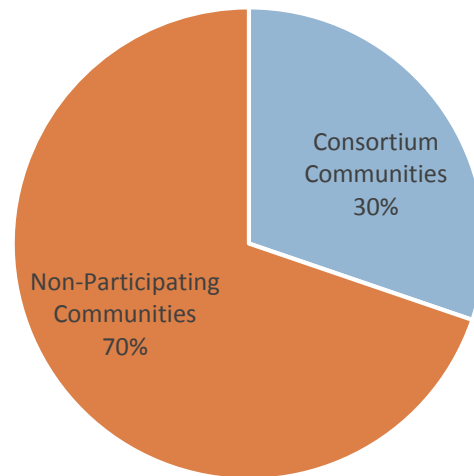
**Figure H-2. Historical Trend for Curbside Recycling**



As mentioned earlier in this section, SWACO does not directly operate/provide for curbside recycling services. However, to encourage curbside recycling SWACO outreaches to communities by offering contract assistance and inviting them to participate in a Community Solid Waste and Recycling Consortium (community consortium). A community consortium is a group of communities that agree to contract together to increase negotiating power to reduce costs when contracting for solid waste, recycling and yard waste collection services. In 2014, twenty communities were participating in one of three community consortiums.

The community consortiums are fluid in the sense the communities may opt out of the consortium upon contract expiration and may join another consortium or be independent. According to data collected by SWACO, approximately 19,638 tons of recyclable materials were collected from the three consortiums in 2014. Figure H-3 shows the distribution of curbside recyclables collected in community consortium and non-participating consortium communities.

**Figure H-3. Distribution of Curbside Recycling Collected Tons**



While the consortium communities are accounting for less in collected tonnages, they are some of the better performing curbside programs. Eight of the thirteen communities shown in Figure H-1 performing at 400 pounds/household/year or above are participating in a community consortium.

Eastman & Smith LTD, contracted legal counsel, assisted with consortiums by creating a memorandum to SWACO detailing a combined savings of over \$3.3 million since 2010 for the communities as a result of reduced waste, recycling and yard waste collection costs.

SWACO's costs to fund the outreach and contract services for community consortiums in 2014 were \$64,706. The 19,638 tons recycled in the community consortiums results in a program cost per ton of \$3.29.

**a. Summary Findings**

- 96% of single family households have access to a curbside recycling program. This level of participation has created a solid foundation for further enhancing curbside recycling programs.
- Communities in the consortium program get the benefit of aggregated costs for collection services which provides the lowest cost and best service contracts within the District. The program provides contracting, legal and technical assistance at no cost to all communities within the community consortium. The majority of the better performing curbside programs are consortium communities.
- Periodic contract monitoring and reviews as well as enforcement of contract requirements are helping to achieve greater diversion. Additional contract optimization such as establishing a baseline for current services and programs, planning for future needs, detailing the scope of work based on the goals and reviewing details with stakeholders will also help.
- A well-functioning cart-based curbside collection program can recover at least 400 pounds per household per year. Best practices examples such as weekly collection, switching from bins to roll carts and increased education and outreach are proven ways to increase tonnage in a community.
- A more focused approach through increased education and outreach, by working with Community recycling programs, could have a significant increase in recovery efforts. Areas that could use improvement include: best practice recommendations, best practice implementation and technical assistance.
- Multi-family units of triplexes and larger are often differentiated from single-family curbside programs. Multi-family households serviced with curbside recycling are an area not clearly identified.
- All but eight communities are implementing curbside recycling programs.
- Research has demonstrated that volume-based rate incentives in waste disposal and recycling have strong and measurable effects on behavior. Customers that put out more waste for collection pay more than those who put out less. Variable rates provide a recurring economic signal to modify behavior and allow small

disposers to save money compared to those who use more service and impose more costs on the system.

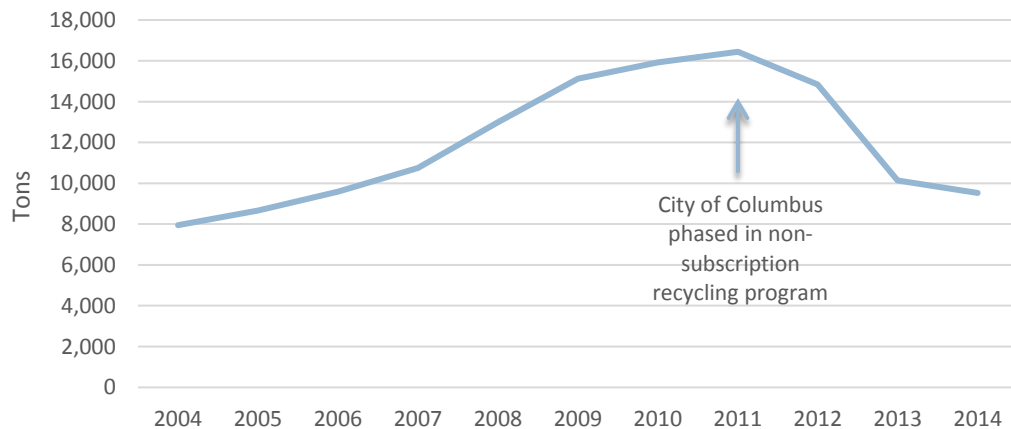
**2. Recycling Drop-off**

SWACO’s Recycling Drop-Off Program is a centralized system of government operations. SWACO provides all drop-off containers and hauling services. At the time the 2011 Plan was approved, subscription and non-subscription curbside recycling programs accounted for 32% of population having access. To meet State Plan goals of providing 90% of District population with access to recycling, an additional 58% of the population needed access. The Plan identified 202 drop-off locations to fill this residential recycling infrastructure gap.

In 2011, the residential recycling infrastructure changed when the largest community, City of Columbus, launched a non-subscription curbside program. About this time, all District communities offering curbside services switched to non-subscription plus a few more communities added curbside service. By 2014, with these infrastructure changes, 96.7% of District population had access to curbside recycling, putting the District over the 90% State Plan access goal. (This does not include drop-off locations. In-depth discussion of the State Plan goal and calculations are found in Appendix J.)

Graphing the historical drop-off tonnages, as shown on Figure H-4, visually depicts the recovery measured through the drop-off program.

**Figure H-4. Drop-off Recycling Tonnages**



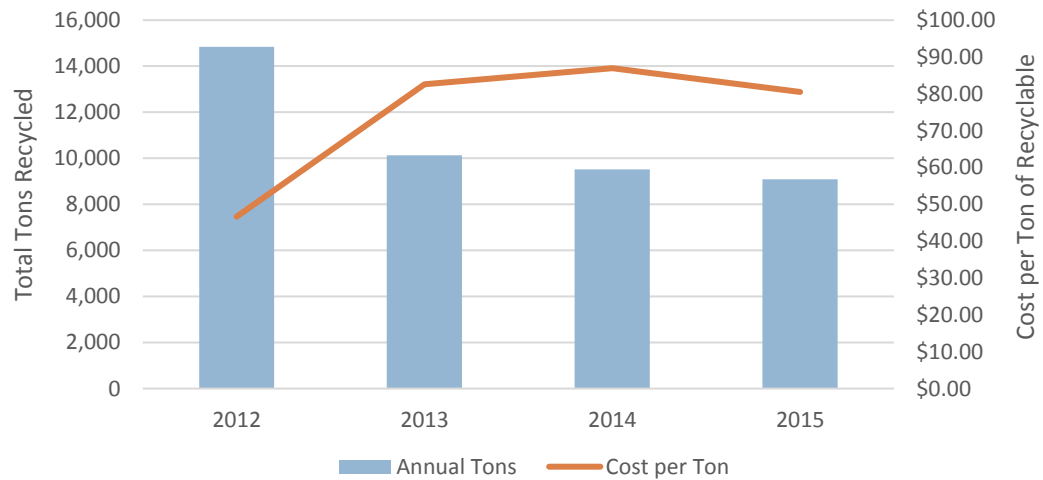
The increasing line from 2004 to 2011 demonstrates the drop-off program filled the service gap for those not participating in the subscription curbside program. The decline in recovered tonnages after 2011 aligns with the City of Columbus rolling out the first phase of the non-subscription curbside program. The drop-off program



decreasing approximately 7,000 tons of recyclables suggests decreased performance especially when compared with earlier program years. Even though tonnages declined, it appears the tonnages were recovered in other programs, specifically the City of Columbus’s curbside program which increased by roughly 29,000 tons.

Diversion of recyclables to another program impacts the operations of the drop-off program. Less recovered tonnages equate to more cost per ton for drop-off operations. As shown below, on Figure H-5, the cost per ton of recyclable was more economical in 2012 than in 2013, 2014 and 2015.

**Figure H-5. Drop-off Program Tons and Costs**



**Notes:**

To calculate cost per ton of recycling, the recycling revenue was subtracted from total program costs then divided by the tons recycled.

Assumption is that 2010 households remain unchanged for 2014; tonnage recovered includes all urban and rural drop-offs.

Estimated recovery pounds per household was calculated by dividing total pounds recovered by total number of households in Franklin County<sup>1</sup>. This calculation is rough and is meant for demonstration purposes. There are assumptions and varying factors for each drop-off location. This estimate demonstrates the drop-off program was recovering approximately 40 pounds per household in 2014.

<sup>1</sup> 2010 United States Census

**Table H-3. Estimated Drop-off Recovery per Household**

2014 Tonnage Recovered	2014 Pounds Recovered	Franklin County Households	Estimated Pounds/Household
9,523	19,047,800	477,235	40

**Notes:**

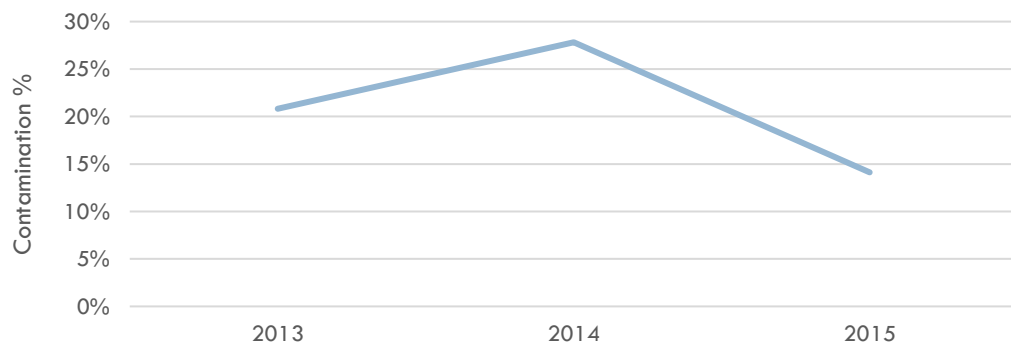
Sample Calculation: 19,047,800 pounds / 477,235 households = 40 pounds/household

Source: Re-TRAC data and 2010 United States Census

Drop-off site location performance was not analyzed, yet challenges around identifying and quantifying data, usage and performance were noticed. The drop-off containers are not equipped with technology to capture the materials recovered from each individual location. SWACO relies on waste audits and service frequency data to make assumptions on better performing locations. As each container is pulled, SWACO drivers complete a form that uses a scale of 1-5 for measuring capacity fullness for each location. Site location and container placement relied on arrangements with property owners and rarely combined demographic data, census data and known recycling service opportunities.

Figure H-6 graphs the contamination levels of the drop-off program as reported by the processor. Processors need clean recyclables (i.e., low levels of contamination), otherwise they may have challenges marketing the materials; this results in a loss of resources and revenue, while generating more landfill waste. Lower contamination rates also help material recovery facilities operate more efficiently, which increase processing capabilities. Please note the sharp reduction of contamination in 2015 was largely due to anomaly when a large amount of source-separated paper was found in the sort. A preliminary audit in 2016 showed a contamination rate of approximately 20%. This information points to a contamination rate that is fairly level over the stated time period.

**Figure H-6. Drop-box Contamination Rates**



Drop-off recycling appears to be less effective than curbside. In rural areas and low population density, areas where curbside is generally cost prohibitive, drop-offs are the most common recycling infrastructure. Most of the District is urban. Now that the highest population density area provides non-subscription curbside recycling the ineffectiveness of the drop-off program in its current (reference year 2014) operational capacity is becoming evident. However, drop-offs do serve those without curbside especially those living in multi-family housing. According to Mid-Ohio Regional Planning Commission (MORPC), 66,200 households live in multi-family units.

Since the drop-off program is unmonitored, the number of households who made a visit to a drop-off location is unknown. Also unknown is the type of users using this recycling service: single-family households, multi-family households, businesses or institutions. The decline of recovery rates substantiates single-family households are preferably using curbside instead of the drop-offs. Since curbside is provided mostly to single-family households the question is whether this program in its current method of operations has the right-size service configuration for the users.

**a. Summary Findings**

- Operation costs per ton of recyclable are rising, recovered tonnages are declining, and revenue from sale of recyclables is declining. This presents long-term sustainability issues.
- Two hundred drop-off locations are serviced throughout Central Ohio and at Columbus City School facilities. Less material recovery through the program, plus increasing program costs per ton, demonstrate the drop-off program, as a whole, is not achieving maximum performance. Tonnages recovered are low.
- Improved curbside recycling access resulted in less recyclables recovered through the drop-offs.
- Drop-offs provide recycling opportunity to single-family households, multi-family households, schools, and businesses. Single-family households are mostly served with curbside.
- Illegal dumping and non-recyclable contamination at the drop-off recycling locations creates additional expenses for operating the program and processing the recyclable materials.
- The drop-off programs at Columbus City Schools provide a convenient opportunity to these institutions. Of the 200 locations, 57% are located at schools. SWACO is working with the Columbus City Schools administration to determine the best options (e.g., School Solid Waste & Recycling Consortium) for sustained alternative recycling services at the schools and ways for improving internal management of the recycling program.

- The quantities of recyclables are not captured at each location but site capacity and performance is rated daily.
- Demographic data and US Census data can identify concentrations of multi-family households in regards to drop-off location placement. Using software such as ArcView GIS maps can show and define functional usage area.
- Of the 200 locations, 88% are located within the City of Columbus. Identified areas to further analyze include: underperforming drop-off locations, modeling for best location placement, users, contamination and illegal dumping, education, and most importantly right sizing the service.

### **3. Multi-Family**

Throughout the District, multi-family households are often differentiated from single-family curbside programs and are lacking convenient recycling opportunities. Currently, there is little data on the current practices, barriers and opportunities to multi-family households. At this time, the multi-family residential recycling infrastructure is not clearly defined other than SWACO's drop-off recycling containers. Seven locations are strategically provided at apartment or condominium complexes purposely targeting multi-family households. It is uncertain how many of these households use the opportunity.

The City of Columbus reported curbside recycling service extends to multi-family housing units of four attached units or less or complexes that utilize 90 or 300-gallon trash containers. In March 2014, expansion to these units increased the households served to 204,000 up from 187,296. SWACO has not yet researched data on multi-family households served in other political entities.

Drop-off locations provide opportunity for residents who live in multi-family households access to recycling. Conversations with service providers indicates that other recycling efforts at multi-family units are being currently being offered. Further analysis of the multi-family sector will help to identify sustainable solutions.

#### **a. Summary Findings**

- Increasing convenient access to recycling at multi-family units could help to increase diversion rates.
- It is not clearly defined how many multi-family households are using the drop-off locations.
- Further analysis is need to understand baseline conditions and identify challenges and opportunities.

## **B. Commercial/Institutional Sector Analysis**

Evaluation of the District's commercial/institutional sector determines if existing programs are adequate to serve the sector or if there are needs that are not being met. The ultimate goal of this analysis is to determine if the commercial/institutional sector is already adequately served or if additional programming is needed.

Commercial/institutional sector consists of the following (non-exhaustive list): commercial businesses, schools and Universities, government agencies, office buildings, stadiums, amusement parks, event venues (stadiums, concert halls), hospitals and non-profit organizations.

### **1. Geographical**

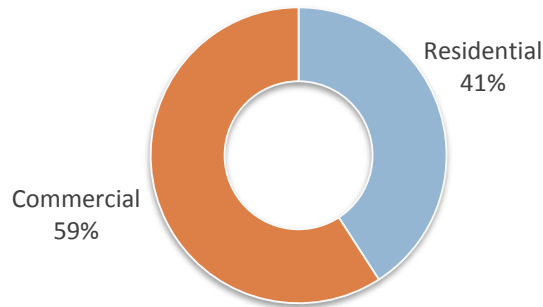
The District is located principally within Franklin County. Geographically, the County offers a metropolitan lifestyle with many major educational, shopping, dining, and cultural attractions. The City of Columbus is the capital of the State of Ohio, and the largest city in the state in both population and area. The County's top employers are government institutions, financial and insurance institutions, and universities. The labor force is mostly government, education and health services, professional and business services, leisure, hospitality and other services. Thus, the County has an abundant and mature commercial/institutional business sector.

### **2. Disposal Statistics**

As discussed in the Residential/Commercial Waste Composition Analysis section of this Appendix, residential and commercial waste disposal is difficult to assess separately because it is not separately identified at the landfill. Re-TRAC Connect, allows communities to provide waste data allowing SWACO to estimate residential waste landfilled (not all communities reported). The residential data was subtracted from the total landfilled data to determine approximate landfilled data for the commercial sector.

Taking total waste landfilled of 977,451 tons, subtracting the residential Re-TRAC Connect data of 399,471 tons calculates an estimated 577,980 tons of commercial waste landfilled. This calculation has flaws some of which include missed data from the communities and unknown characterization of multi-family units as commercial. Even though this is an approximation, the method of calculation has value. Based on this analysis the commercial sector is landfilling 59% of the municipal solid waste as shown in Figure H-7.

**Figure H-7. Estimated Municipal Solid Waste Disposal per Sector**



To better understand waste disposal in the Franklin County Sanitary Landfill, a municipal solid waste composition study was conducted in 2013. Applying three of the higher composition percentage categories (found in the Residential/Commercial Waste Composition Analysis section of this Appendix) to the commercial waste landfilled calculates approximate material quantity estimates being landfilled, shown in Table H-4.

**Table H-4. Estimated Commercial Landfilled Tonnages per Material Category**

Composition Material Categories	% Disposed	Estimated 2014 Tons Landfilled
Food Waste	12.8%	73,692
Fibers	29.2%	168,770
Plastics	17.2%	99,586

**Notes:**

**Sample Calculation:** 577,980 tons of commercial waste x 12.8% food waste composition = 73,692 tons

**Source:** GT Waste Composition Study 2013

Keeping in mind these estimates are rough, the demonstration shows potential diversion of fibers (paper and cardboard), plastic and food quantities from the landfill. Unfortunately, data collection from the sector is very difficult and limited programs have been offered in the past.

Past programs targeted toward the commercial sector include Solid Waste Assessments, Business Outreach and Business Roundtable. These programs have been focused on education and information sharing. While these programs have had an impact on raising awareness, they have fallen short on the potential to capture more recycling from this sector.

### 3. **Diversion Statistics**

Commercial recycling data is collected from buy-backs (scrap yards), processors, and OHIO EPA sourced data from commercial businesses and material recovery facilities (MRFs). While this data is essential, efforts for capturing data from the commercial sector are limited. Data collected from buy-backs (scrap yards) does not separate commercial versus residential streams.

Likewise, a portion of recyclables in the drop-off program is most likely attributable to the commercial sector. Thus, the calculation for obtaining diversion statistics for the commercial sector is imperfect and requires approximating quantities. As shown in Table H-5, a total of 108,691 tons are estimated as commercial sector recycling.

**Table H-5. Estimated Commercial Recycling**

Data Sources	Tons
Processors	57,473
MRFs	11,539
OHIO EPA Retail Data	39,679
<b>Total</b>	<b>108,691</b>
Scrap Yards (mix of residential and commercial)	Possible Additional 33,564

**Notes:**

**Source:** SWACO survey data, 2014 MRF Data dated July 10, 2015 from OHIO EPA's website and Re-TRAC 2014 data.

The breakdown between residential versus commercial is not important for OHIO EPA reporting purposes. Delineating the two, as best as possible, for this Plan helps to ascertain volumes of untapped commercial diversion. This information shows that commercial entities recycle the majority of the material in the District. Fiber materials were identified as approximately 29% of the total material landfilled, and were primarily generated by commercial businesses.

### 4. **Functionality**

Recycling by commercial/institutional sector is scattered among a wide range of services and service providers, with ample service opportunities available. The commercial sector represents a significant opportunity to for expanding existing private service and developing supportive programs.

Further research in the following areas will help to establish impactful strategies for this sector:

- Nature of clusters for this sector
- Services offered
- Limitations to recycling advancement
- Cost barriers and if they may be mitigated through tipping fee savings
- Solid waste services reduction and potential income from diverted material groups
- Whether stakeholder engagement has influenced achievements
- Whether SWACO web-based detail and assistance has influenced achievements
- Architectural barriers
- Storage container placement
- Service constraints

## **5. Commercial Constituents and Opportunities**

### **a. Commercial Businesses, Government Agencies, and Office Buildings**

Businesses and institutions are concentrated within either a Central Business District (CBD) or more local concentrations within business and residential areas. Downtown Columbus has a concentrated business district as do most of the political entities in the County. There are clusters of concentrated commercial businesses/institutions, universities, entertainment areas, etc. SWACO recognizes the benefits in these areas of tenant and landlord education to help insure appropriate service design while building personal relationship(s) within the business/industry sector. Opportunities to evaluate performance, enhance new services or enforcement activities are available. (Also effective for multi-family housing units.)

Education is delivered to the commercial sector and is generally targeted at events. SWACO recognizes the benefits of enhanced education, constant messaging and outreach. Effectiveness of services can always be improved through enhanced education.

Other regions of the country have developed policies to stimulate recycling with regulatory bans for cardboard, newspaper, glass (especially permitted bars/restaurants) etc. Likewise, ordinances and rules/regulation requirements establishing recycling plans or requiring recycling of certain materials provide potential opportunities.

Impactful programs that could be developed for this sector include the following:



- Contract development and assistance; contract templates or consortiums of businesses
- Outreach and assistance through consultation; helping businesses troubleshoot their recycling needs, barriers, and opportunities.
- Incentive programs that help businesses in the commercial sector establish or expand existing programs; by establishing infrastructure such as containers, signage and other start-up recycling program expenses.

**b. Schools and Universities**

Sixteen major public school districts with student enrollments from primary through secondary represent a large segment of educational institutions in the District. Other leading centers, technical, vocational and private schools also exist. Table H-6 identifies the largest public school districts and colleges in the District.

**Table H-6. Largest School Districts and Colleges in SWACO’s Jurisdiction**

School Districts	
Bexley City	Hilliard City
Canal Winchester Local	New Albany-Plain Local
Columbus City	Reynoldsburg City
Dublin City	South-Western City
Gahanna-Jefferson City	Upper Arlington City
Grandview Heights City	Westerville City
Groveport Madison Local	Whitehall City
Hamilton Local	Worthington City
Colleges/Universities	
Capital University	Franklin University
Ohio Dominican University	Columbus State Community College
The Ohio State University	Ohio Christian University
DeVry University	Otterbein University
Pontifical College Josephinum	

**Notes:**

**Source:** [www.publicschoolreview.com](http://www.publicschoolreview.com)

SWACO has three school directed education programs to educate children and teachers about conservation, waste management, recycling, how to recycle, etc. Education is a teaching and curriculum-targeted program with limited focus on minimization, recycling, and sustainability practices/policies in the schools. Practices within schools historically and in 2014, recycled paper. In 2016, E-waste diversion opportunities were expanded to

educational institutions. SWACO recognizes the opportunity for expansion of other material recycling collection.

SWACO initiated the formation of a school district solid waste and recycling consortium in 2012. Forming a consortium provides a joint bid process and purchasing program, which offers an opportunity to provide collection services to the schools. School districts who joined the 5-year consortium on August 1, 2012 include: Bexley City Schools, Groveport Madison Schools, New Albany-Plain Local School District, South-Western City School District, Upper Arlington City Schools, Whitehall City Schools and the Educational Service Center. The standard set of recyclable materials processed by Rumpke include cardboard, mixed paper, plastic bottleneck containers, steel/tin/aluminum cans, and glass. Recycling material tonnages are not tracked for each individual school but are included with recycling tonnages Rumpke reports to the OHIO EPA.

The drop-off recycling program provides and services drop-off recycling dumpsters at 114 Columbus City schools. These were placed to help meet the access goal as well increase recycling by capturing the standard recyclables. Considering declining tonnages and rising operational costs, as demonstrated in the Residential Recycling Infrastructure analysis, SWACO recognizes other opportunities may be available for the schools to help address these challenges while balancing needs of the schools and SWACO costs.

Local university settings contribute significantly to recycling participation and volume while providing incubation to emerging technologies, program techniques and educational efforts. Most of the local universities have their own sustainability goals. For instance, The Ohio State University has a declared goal of 90% diversion of waste from landfills by 2025, plus has a zero waste stadium. SWACO recognizes the benefit of involvement and interaction with local universities in diversion efforts.

One of the larger material categories for potential diversion is food waste. Commercial and institutional generators may be producing larger quantities of food waste. In particular, cafeteria food waste (pre-consumer food preparation scraps and post-consumer leftovers) recovery and diversion in these institutions could be explored in the future.

**c. Event Venues (Stadiums, Concert Halls, Parks), Hospitals, and Hotels**

There is limited information available on commercial and away-from-home source reduction or recycling activities/programs. Cardboard recycling

boxes and ClearStream containers are provided to community events for the collection of plastic bottles, glass bottles and metal cans, as requested.

Collaboration or partnership opportunities for away-from-home recycling are continually being explored. Data identifying volume fluctuations (e.g., season, participants, convenience, etc.) inherent within these sectors, uniqueness of actual recycling activities based upon material groups generated, collection limitations and acceptance by generators has not been studied.

The standard recyclables are targets for the limited recycling provided. As with school and university constituents, these institutions have also not been explored for services and programs to divert food waste. According to “Wasted: How America is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill”, 4-10% of institutional food purchases become waste.

**d. Other Considerations**

SWACO allows emerging technology and service enhancement offerors a platform to contact and provide new program introductions through website links (SWACO Innovation and Program Teams). Engagement towards Local Chamber(s) of Commerce, Economic Development Organizations and other Civic entities has been increasing in recent years. Such efforts will allow opportunities to evaluate changing business demographics, nature of the “evolving ton” of solid waste within the service area while providing larger audience to solicit solid waste reduction involvement, waste audit completion and direct user education of service offerings.

Other members of the solid waste generator community (underserved multi-family, small commercial, dumpster users, high value material generating industries, etc.) may be best served with a concentrated focus on their needs as opposed to focus on unique groups with lower generation values or expensive outreach generating marginal results.

**6. Summary Findings**

- Geographically Franklin County is predominantly urban with a widely developed commercial base. The commercial sector disposes approximately 59% of the waste of the residential/commercial waste stream. The majority of the waste disposed consists of fiber materials which is predominantly produced by commercial entities.

- There is limited data available on the current diversion services that are offered to the commercial sector. Collecting this data poses significant economical and logistical challenges.
- Strategically engagement with the commercial sector to identify successes or challenges with service or service providers is in its early stages.
- Franklin County has a large number of educational institutions contributing to the waste stream. Strategies are being developed to address school waste minimization, recycling, and sustainability education and outreach. Data collection specific to this sector will require development. Capturing additional materials such as batteries, ink cartridges, food waste, etc. will be taken into consideration.
- The 2013, waste composition landfill study identified food waste as one of the larger material categories landfilled. Evaluating large commercial food waste generators is being considered as an opportunity for waste reduction from this sector. While SWACO offers special event recycling containers, away-from-home activities and information is limited. Collaborative and partnership opportunities have not been explored.
- SWACO has limited education and outreach to the commercial sector. Programs were developed more towards connecting businesses together with limited purpose towards source reduction and recycling functionality.
- There are clear opportunities to improve connections with the commercial sector and understanding their needs.

## C. Industrial Sector Analysis

This evaluation of the industrial sector determines if existing programs (offered either through the SWMD or other entities) are adequate to serve that sector or if there are needs that are not being met. The ultimate goal of this analysis is for the Board to determine if there are programs to provide to address the industrial sector or if that sector is already adequately served.

### 1. Industry Base

According to research prepared by Columbus 2020, an economic development organization, the largest industries in Franklin County include the following:

**Table H-7. Largest Industries in District**

COMPANY	OPERATIONS	FTE
Whirlpool Corporation	Appliances	2,344
Abbott Nutrition	Food and Beverage	2,055
Emerson Network Power	Infrastructure Technologies	1,720
TS Tech Co., Ltd.	Automotive	1,536

COMPANY	OPERATIONS	FTE
West-Ward Pharmaceuticals Non-Injectables Manufacturing Facility	Pharmaceuticals	1,370
Worthington Industries	Steel	1,366
Lancaster Colony Corporation	Food and Beverage	877
Mars Petcare	Pet Care	836
Mettler-Toledo International Inc.	Precision Instruments	800
Columbus Castings	Steel	700
Anheuser-Busch	Food and Beverage	650

It is not confirmed whether the largest entities have recycling services, but it is very likely that recycling programs are in place. Many companies on the list publish annual sustainability reports or discuss sustainability initiatives on their websites. Manufacturing industries have not been surveyed to determine existing diversion efforts. A survey of this sector in the future could help to establish a baseline of the existing conditions as well as identify needs and opportunities.

Many industrial parks are located throughout SWACO’s jurisdiction. The top industrial parks include:

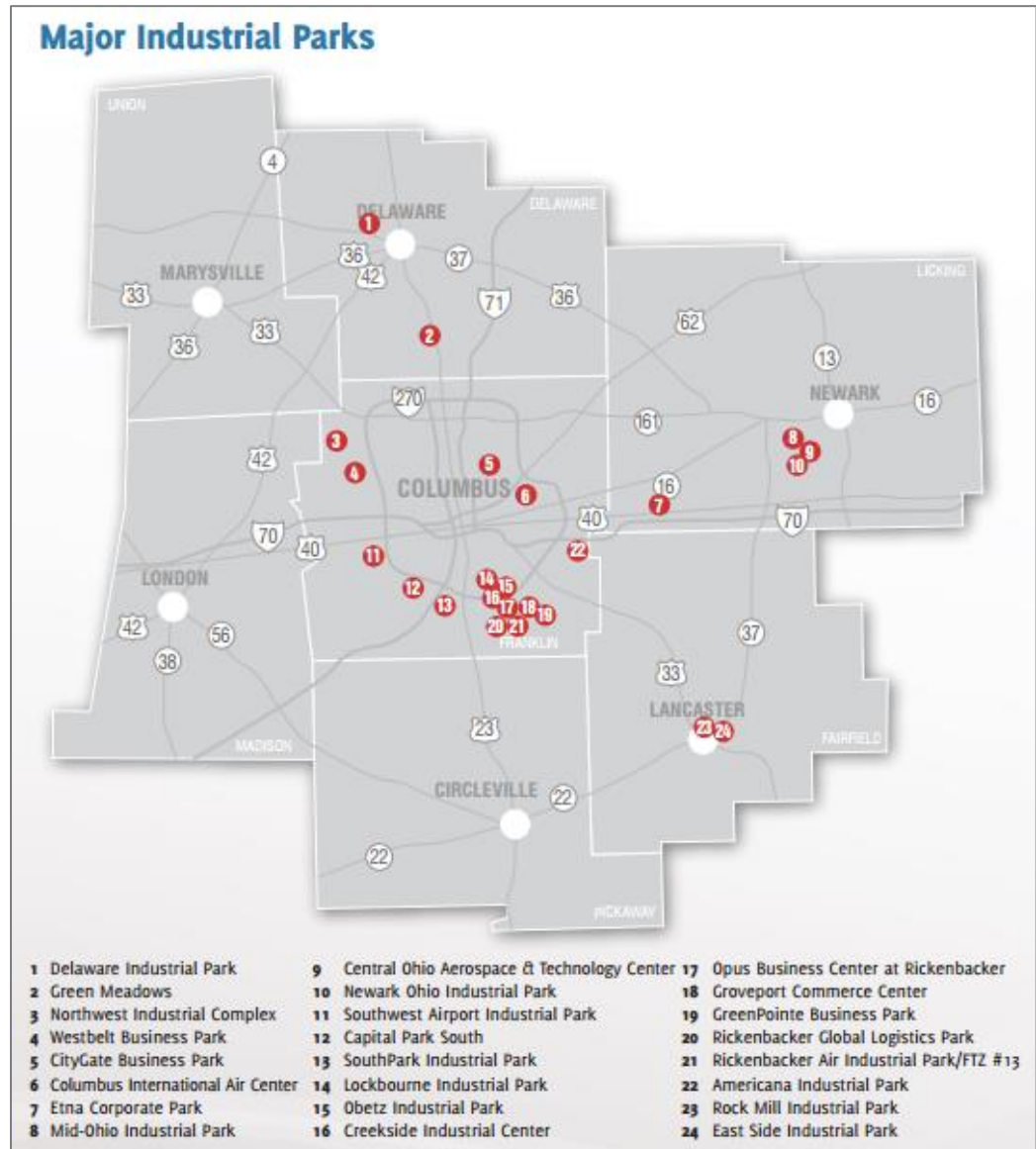
- Rickenbacker Air Industrial Park: 11.6 million square feet of completed space
- Tenants include: CEVA Logistics, FedEx, RCS Logistics
- Creekside Industrial Center: 9 million square feet of completed space
- Tenants include: Whirlpool, Exel
- Groveport Commerce Center: 4.2 million square feet of completed space
- Tenants include: Philips Electronics, Union Supply, Kubota
- Westbelt Business ParkSquare: 4 million square feet of tenant space
- Tenants include: Birchwood Foods, CSX
- SouthPark Industrial Park and Distribution Center: 4 million square feet of tenant space
- Tenants include: Nationwide Insurance, Netflix

**Notes:**

**Source:** Columbus Business First, “Top of the List: Largest industrial parks in Central Ohio.” January 9, 2013.

The following figure provides a map and listing of other major industrial parks located in Franklin County and the surrounding region.

Figure H-8. Industrial Parks in District



**Notes:**

**Source:** City of Columbus Economic Development.

[www.columbus.gov/uploadedfiles%5CBusiness\\_Development%5CIndustrial%20Parks%20%E2%80%93%20MSA.pdf](http://www.columbus.gov/uploadedfiles%5CBusiness_Development%5CIndustrial%20Parks%20%E2%80%93%20MSA.pdf). Accessed April 8, 2016.

Under the 2011 Plan Update, the following programs targeting the industrial (and commercial) sector were to be implemented:

- Business Outreach: Per the 2011 Plan, there were 3-4 waste audits planned per year, which were conducted by external contractors. While this activity was implemented as planned, it was later assessed to be minimally effective based on a cost-benefit analysis.

- Business Roundtables While the Business Roundtables provided benefits by connecting and educating commercial businesses, it was not successful in reaching and engaging the industrial sector.
- News from SWACO: A quarterly publication that updates community leaders, businesses, educators and others on SWACO program offerings and other local waste reduction and recycling opportunities
- Social Media: Program designed to reach audiences using online social networking applications.
- Solid Waste Assessments: Tools to complete a self-assessment of their solid waste; do-it-yourself waste assessment is available at SWACO's website
- Market Development: Enhancement of markets for recyclable materials, including program development and conducting education and awareness programs.

Consultation and technical expertise was provided to several companies in an effort to expand recycling opportunities.

## **2. Summary Findings**

- Industrial generators present an opportunity for future diversion programming.
- Minimal data is available to determine to determine current diversion efforts although most entities that have been engaged claim the success of internal programming.
- The impact of past programs targeted towards this sector is difficult to determine. Thoughtful measurement of future programs will be important.
- Best practices and benchmarking should be identified when considering future programming options.
- Based on data for the reference year this sector diverted 79%. Showing that the sector, with limited support, has continued to seek out viable solutions for reducing waste and diverting material resources.

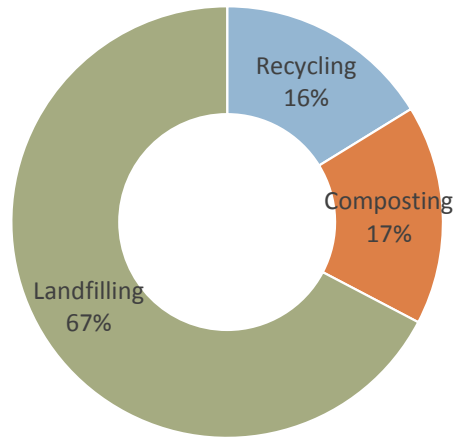
### **D. Residential/Commercial Waste Composition Analysis**

This evaluation of residential/commercial composition is to describe and evaluate the solid wastes that make up the largest portions of the R/C waste stream. The evaluation outlines what programs are in place to address these waste streams and what programs should be evaluated to further address those wastes.

**1. Generation**

The District generated 1,452,016 tons of municipal solid waste (MSW) from the residential and commercial sectors. As shown in Figure H-9, SWACO managed the generated waste by, landfilling 67% (977,451 tons), recycling 17% (235,603 tons), and composting 16% (232,815 tons of yard waste + 6,148 tons of food waste).

**Figure H-9. Managed Municipal Solid Waste 2014**



**Notes:**

Waste Generation = Wastes Disposed + Wastes Recycled + Wastes Composted 1,452,016 tons = 977,451 tons (disposed) + 235,603 tons (recycled) + 238,962 tons (composted)

Comparing District waste streams to national waste streams shows similar landfill, recycling and organic breakdowns of municipal solid waste managed. Nationally, in 2013, the US EPA reported 66% (166,930,000 tons) landfilled, 25% (64,740,000) recycled and 9% (22,440,000) composted of the total 254,110,000 tons of municipal solid waste generated.

**2. Disposal by Community**

Communities currently report through an online tool called Re-TRAC Connect to allow each residential political jurisdiction to report their landfilling, recycling, and composting data in one centralized program. Table H-8 identifies the tons of municipal solid waste landfilled from the 2014 reporting political jurisdictions. The District’s largest municipality, City of Columbus, was responsible for 74% (295,731 tons) of the residential municipal solid waste sent to the landfill.



**Table H-8. Political Jurisdiction Reported Data**

<b>Community</b>	<b>Tons of MSW Landfilled</b>
Columbus	295,731
Grove City and Jackson Township	14,129
Dublin	10,912
Westerville	10,007
Reynoldsburg	9,511
Gahanna	9,278
Hilliard	8,456
Upper Arlington	6,459
Whitehall	5,884
Madison Township	4,120
Bexley	4,009
Groveport	3,686
Franklin Township	3,046
Jefferson Township	2,871
New Albany	2,818
Grandview Heights	2,218
Pleasant Township	2,194
Norwich Township	1,394
Clinton	1,306
Truro Township	465
Valleyview	229
Riverlea Village	207
Perry Township	206
Urbancrest	173
Minerva Park	126
Brice	34
Blendon Township	unreported
Hamilton Township	unreported
Plain Township	unreported
Sharon Township	unreported
Washington Township	unreported
Worthington	unreported
<b>TOTAL</b>	<b>399,471</b>

**Notes:**

Source: Re-TRAC 2014 data

**3. Disposal by Sector**

Municipal solid waste consists of residential and commercial garbage making it difficult to assess the two sectors separately. Through the use of Re-TRAC Connect,

we can roughly estimate residential waste and commercial waste separately. In 2014, 26 of the 41 political jurisdictions reported disposing 41% (399,471 tons) of the municipal solid waste stream. The majority of political jurisdictions reported, but not all.

The residential percentage is an estimate as is the calculated commercial. Using this estimate, it is assumed the remaining 59% (577,980 tons) of municipal solid waste landfilled is commercial waste. This is not a perfect calculation or estimate. One flaw is the unknown quantity of commercial waste being generated from multi-family housing, institutions and/or industries. Based on this analysis, the commercial sector is landfilling the majority of waste.

**4. Waste Composition**

In 2013, SWACO contracted with GT Environmental, Inc. (GT) to perform a Waste Characterization Study on the waste classified as municipal solid waste at the landfill. The study determined percentages of each material in the disposed waste stream.

As identified in Figure H-10, the top four material categories landfilled in the Franklin County Sanitary Landfill include fiber, plastics, other and food waste. The ‘other’ category was made up of the following waste materials: small sorting residue, diapers, feminine products, bio-hazard materials/sharps, dirt, rock, electronics, household hazardous waste and unrecyclable paper coated with foil or plastic.

**Figure H-10. Franklin County Sanitary Landfill MSW Composition 2013**



Applying these composition percentages to the landfilled amount of 977,451 tons gives an approximate estimate of quantities being landfilled per material category. The tonnages estimated for each material category are shown in Table H-9.

**Table H-9. Estimated Disposal per Material Category**

Composition Material Categories	% Disposed	Estimated 2014 Tons
Food Waste	12.8%	124,625
Container Glass	2.8%	26,880
Metals	4.2%	41,053
Fibers	29.2%	285,416
Plastics	17.2%	168,415
Textiles	8.0%	78,196
Wood	5.4%	52,782
Yard Waste	5.9%	57,670
Other	14.6%	142,415
<b>Total</b>	<b>100.0%</b>	<b>977,451</b>

**Notes:**

Total Disposed excludes 10 tons of waste sent to incinerator.

**Source:** GT Waste Composition Study, 2013

Much of the material categories identified in Table H-10 as landfilled are recyclable.

The estimated disposal tons per material category were added to the tons of recycled materials to determine an estimated tons of generation per material, as shown in Table H-11.

**Table H-10. Estimated Waste Composition**

Landfill Composition Categories	2014 Tons Recycled	2014 Estimated Tons Landfilled	2014 Estimated Tons Generation
White Goods	840	0	840
HHW	165	0	165
Electronics	990	0	990
Scrap Tires	18,833	0	18,833
Dry Cell Batteries	5	0	5
Lead-Acid Batteries	102	0	102
Food Waste	6,148	124,625	130,773
Container Glass	13,848	26,880	40,728
Metals	35,710	41,053	76,763
Fibers	143,549	285,416	428,965
Plastics	5,805	168,415	174,220
Textiles	2,349	78,196	80,545
Wood	8,941	52,782	61,723

Landfill Composition Categories	2014 Tons Recycled	2014 Estimated Tons Landfilled	2014 Estimated Tons Generation
Commingled	2626	0	2,626
Yard Waste	232,814	57,670	290,484
Other	1,840	142,415	144,255
<b>TOTAL</b>	<b>474,565</b>	<b>977,451</b>	<b>1,452,016</b>

**Notes:**

These are estimates. This demonstration does not assume all materials showing "0" landfilled recycled 100% of that material. Some materials are restricted from the landfill thus would not be identified in the composition study. Some materials are aggregated in the "other" composition category.

**5. Fiber Waste Stream**

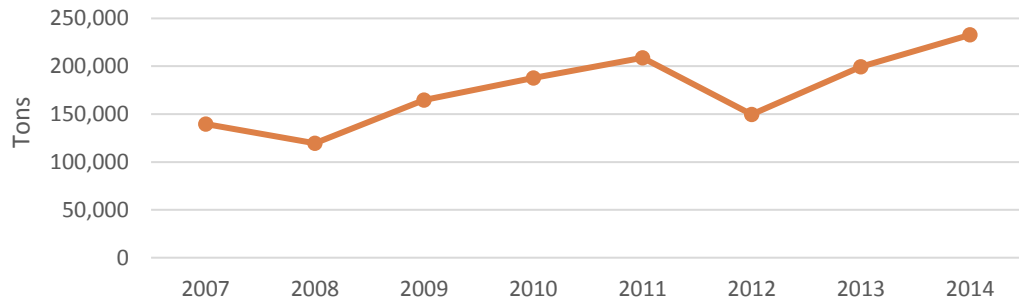
Based on the waste composition study, fiber materials are the largest material category landfilled. Approximately 29.2%, or 285,416 tons of this waste stream is landfilled. The 2014 ADR reported a total of 143,549 tons of fibers diverted. At this time, approximately 33% of the fiber waste stream is being diverted from the landfill.

Fibers have a significant recovery potential. Fibers are accepted from the residential sector through curbside and drop-off programs. Recovery programs and opportunities of fibers in the commercial sector are largely unknown. Education institutions participating in the school consortiums or that are provided service through the drop-off recycling program have opportunity to recycle fibers. Unfortunately, assumptions and calculations suggest a large portion of fiber materials is generated and disposed from the commercial sector.

**6. Yard Waste Stream**

Based on the waste composition study minimal yard waste, 5.9%, is landfilled. The yard waste management program is successful in diverting large tonnages of yard waste. In 2014, reports indicated over 80% of yard waste was diverted. Figure H-11 shows an increasing trend in yard waste composting. There have been some noted changes to infrastructure over time which include: two less registered Class IV compost facilities in 2014 than in 2008; change to subscription based City of Columbus' curbside yard waste in 2009; and in 2012 a non-subscription curbside yard waste program in the City of Columbus with bi-weekly collection waste. (Interestingly, there were no measured impacts on the tonnage of yard waste composted with infrastructure changes.) All three Kurtz Brothers compost facilities have scales. Only 1 Ohio Mulch location has scales.

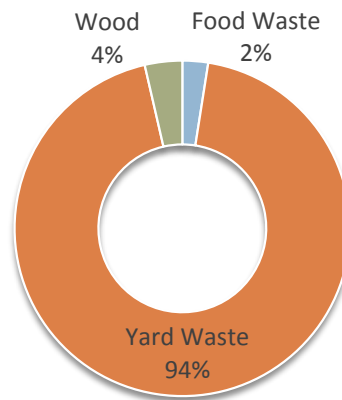
**Figure H-11. Yard Waste Composted**



The historical trend for yard waste diverted through curbside collection is relatively consistent. For this analysis, the effectiveness of the curbside yard waste programs was not evaluated, but should be considered for future program changes. (Additional analysis and discussion is included in Restricted and Difficult to Manage Waste Streams Analysis.)

Yard waste is a component of the organics stream. In 2014, shown in Figure H-12, 94% (232,814 tons) of the organics collected for diversion were comprised of yard wastes. The remaining 6% of the organics collected for diversion were comprised of 4% (8,941 tons) wood waste and 2% (6,148 tons) food waste.

**Figure H-12. Organics Diversion**



**7. Food Waste Stream**

Based on the waste composition study, approximately 12.8% of waste landfilled is food waste and as demonstrated earlier in Figure H-10, an estimated 124,625 tons of food waste is being landfilled. Food waste is a diversion opportunity.

Adequate infrastructure for collecting and processing food waste is the main barrier for increased diversion efforts. It's assumed that the economic feasibility for

operating a facility has had a large influence on limiting infrastructure. An anaerobic digester is located within the District; the digester does accept small amounts of food waste but is limited in what they provide based on their material specification requirements.

Food waste rescue and food waste minimization efforts are underway within the District. Mid-Ohio Food Bank and Community Plates are two non-profit organizations that actively reduce food waste and feed people at the same time. SWACO has been working with both of these organizations to better understand and support their activities.

Compost is a key sustainability strategy. There is a non-active permitted food composting facility in the District. Food waste composting in 2014 was directed to out-of-district facilities. More discussion on food waste is provided in the Restricted and Difficult to Manage Waste Streams Analysis.

## **8. Summary Findings**

- The majority of waste managed is landfilled, 67%. Based on estimated calculations the commercial sector is landfilling the majority of waste.
- City of Columbus was responsible for 74% of residential municipal solid waste landfilled.
- Thirty-three percent of fibers are being diverted, yet it is still the largest material stream landfilled.
- According to the waste composition study, 29.2% of material landfilled is fibers. Estimated calculations demonstrate the commercial sector is landfilling the majority.
- The waste composition study reports 5.9% of material landfilled is yard waste. The yard waste program successfully diverts 80% of yard waste from the landfill through composting. While SWACO has participated in small scale pilot programs, food waste is a diversion opportunity SWACO has not yet fully explored.

## **E. Economic Incentive Analysis**

In accordance with Goal 6 of the *2009 State Plan*, SWACO is required to explore how to incorporate economic incentives into waste reduction and recycling programs. This analysis evaluates existing economic incentives and evaluates the feasibility of implementing incentives.

Incentive-based programs that either tie the amount recycled to some sort of financial compensation or reduce the cost of recycling have the potential to significantly increase participation in an available recycling program. They can also increase the tonnage of recyclables collected.

### **1. Community Consortiums**

SWACO encourages communities to join a community solid waste and recycling consortium. Consortiums increase negotiating power to reduce costs for solid waste, recycling and yard waste collection services. Communities joining have experienced cost savings. Eastman & Smith LTD created a memorandum to SWACO detailing community cost savings over \$3.3 million since 2010 for communities. The consortiums increased the number of communities providing non-subscription curbside service as well as contributed to the annual increase in curbside tonnages. Of 33 communities with non-subscription curbside, 20 participate in a consortium.

### **2. Pay-As-You-Throw**

Pay-As-You-Throw (PAYT), also referred to as volume-based pricing, unit pricing, variable rate pricing or user-pay, is an economic incentive for curbside residents to pay for only the amount of municipal solid waste disposed per household. PAYT can be effective in reducing waste and increasing recycling while seeing significant savings in tipping fees depending on the community.

Non-PAYT communities often charge a flat-rate based on their waste consumption; similar to other household utilities (electricity, water, gas). The household waste generation can be calculated through by variable billing based on container weight, size or service frequency using Radio Frequency Identification (RFID).

Three communities in the District currently participate in volume based disposal: Mifflin Township, Washington Township, and the City of Upper Arlington. These communities are currently reporting some of the highest diversion rates in the District<sup>2</sup>. SWACO actively promotes volume based disposal programs through the community consortium process.

### **3. Other Incentives**

Cities around the country have seen success with the use of automated carts with RFID readers for curbside collection. Once the garbage cart is serviced customers are charged only for the number of cart tips, this method can also provide varying cart sizes. Larger recycling containers and a custom-built recycling rewards program, called “mygrcitypoints”, incentivizes recycling participation, resulting in increased recycling rates and tonnages. Rather than accounting for individual household performance, the points are based on per route recycling weight. Each recycling truck has an assigned neighborhood route, and throughout its route, it is scanning RFID tags on carts and collecting material. At the end of the route, the

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<sup>2</sup> 51.02%, 45.78% and 46.24% respectively, according to Re-TRAC Connect data

weight of recyclable material in the truck is divided by the number of RFID tags scanned on the route, the average weight per cart is determined, and each participating household on that neighborhood route receives 10 points per pound based on the determined average. This method encourages neighbors to increase recycling frequency as the more individual households serviced will increase the neighborhood average and result in more points earned. In addition, residents earn points by recycling, community service and volunteering. Points can be redeemed at small local businesses, services and restaurants. Residents can also choose to donate their points to a community project like upgrades to a local park.

As consumers, we have been trained to expect points, rebates and other similar rewards for our purchases or other behaviors desired by advertisers and marketers. A recent trend in the waste industry is to reward residents that participate in recycling programs in a similar fashion. RecycleBank is the most widely known system; however, other forms of this rewards program are now available from local contractors. The premise of the system is that people receive points for the tons of recyclables collected. The points are redeemable discount coupons for retail purchases.

#### **4. Feasibility**

Incentives play an important role in establishing recycling behaviors and for growing diversion initiatives. Incentive programs can range widely and making incentives sustainable needs to be deeply considered before they are launched. Recently, SWACO has been evaluating a variety of incentive programs that may help to address the needs of Central Ohio but further analysis to determine their applicability and feasibility to still need. SWACO will continue to promote incentive programs that are known to work within the District, such as volume based disposal for single-family residential households.

#### **5. Summary Findings**

- Twenty of the 41 communities participate in a community consortium.
- Communities in the consortium get the benefit of aggregated costs for collection services which provides lowest cost and best service contracts.
- Volume based disposal has been effective in reducing waste by 50% and increasing recycling while seeing significant savings in tipping fees.
- Three communities currently use volume based disposal and other communities are considering it.
- SWACO supports incentivized recycling programs in several ways, contract assistance, economic grants, and education support. There are opportunities for SWACO to improve and enhance each of these components.



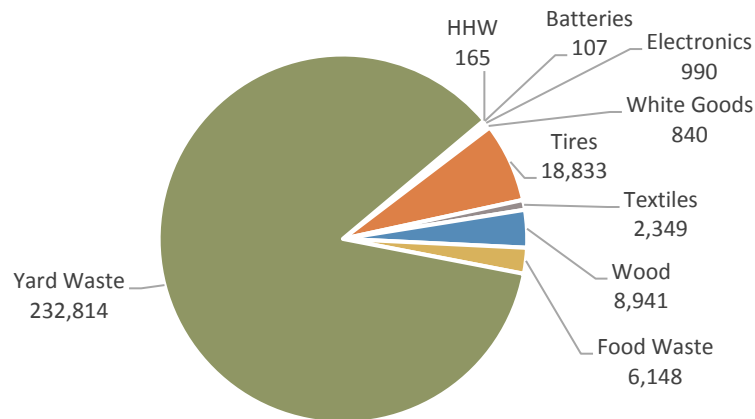
**F. Restricted and Difficult to Manage Waste Streams Analysis**

SWACO is required to provide strategies for waste materials that are restricted from disposal<sup>3</sup>. These materials are scrap tires, yard waste and lead-acid batteries. Even though household hazardous waste (HHW) and electronics (end-of-life/obsolete) are not restricted, SWACO is required to address these waste streams with strategies. Household hazardous waste includes such materials as household batteries, gasoline, turpentine, spray paint, fertilizer, pool chemicals, household cleaners, antifreeze, etc.

Although not required by the state to collect all of these materials, SWACO considers these materials an important part of their commitment to responsibly managing the waste stream. SWACO has strategies in place to manage these waste streams that are handled through a combination of retailer take-back, product stewardship, and SWACO developed and funded programs. In all of the management opportunities the onus is on the residents and the producer of the waste stream to be responsible and properly manage these wastes.

In 2014, a total of 256,098 tons of restricted and difficult to manage wastes were diverted. (Excludes 1,614 tons of ash. Recycled ash tonnages less than 10% of total waste disposed in that year are excluded per the plan Format 4.0 from recycled calculations.) The largest category of diverted materials is yard waste.

**Figure H-13. Restricted and Difficult to Manage Waste Recycled in 2014 (tons)**

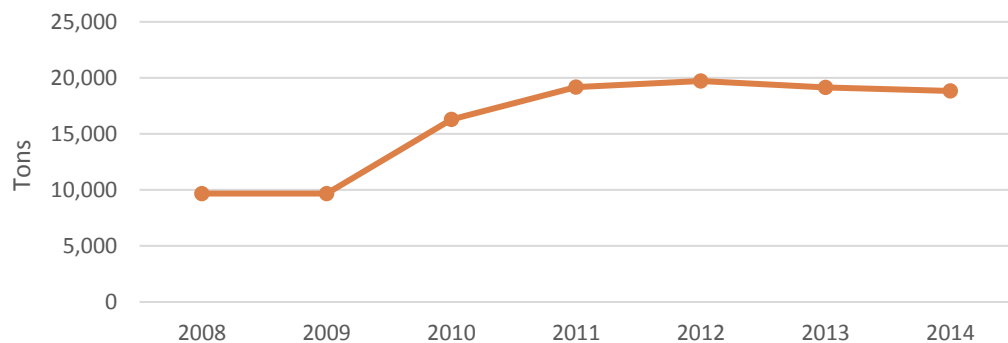


<sup>3</sup> OHIO EPA 2009 State Solid Waste Management Plan establishes nine SWMD goals that are designed to further waste reduction and recycling in Ohio to comply with ORC 3734.50(B).

## 1. Scrap Tires

According to U.S. EPA's "Advancing Sustainable Materials Management: Facts and Figures 2013" approximately 40.5% of generated tires are recovered (does not include tires retreaded or energy recovery from tires.) Recovery scrap tire data obtained from OHIO EPA's scrap tire transporter data reported 18,833 tons. The recovery percentage applied to the tonnage recovered estimates a generation of 46,501 tons. Figure H-14 shows an upsurge of tire recycling in 2010, before flattening.

**Figure H-14. Scrap Tire Recycling**



SWACO's program, Scrap Tire Collection, has three strategies for managing scrap tires.

### a. Retailer Take-Back Programs

Tire retailers provide a valuable service by accepting tires for a fee. Limited information is provided on retailer take-back programs. SWACO's website is a resource that directs users to tire outlets.

### b. Drop-Off at FCSL or Transfer Facilities

SWACO accepts tires at each of the transfer stations and the landfill in order to deter the illegal disposal of scrap tires across the County. There is a per tire fee for auto tires and large tires. SWACO also removes tires from incoming solid waste loads at each of its facilities. SWACO records data on tires collected at the landfill and transfer facilities reporting 79.26 tons of tires in 2014. Operation costs to provide and transport a roll-off to a tire processor and handling the tires at the landfill and transfer facilities are not included under the generation fee program costs.

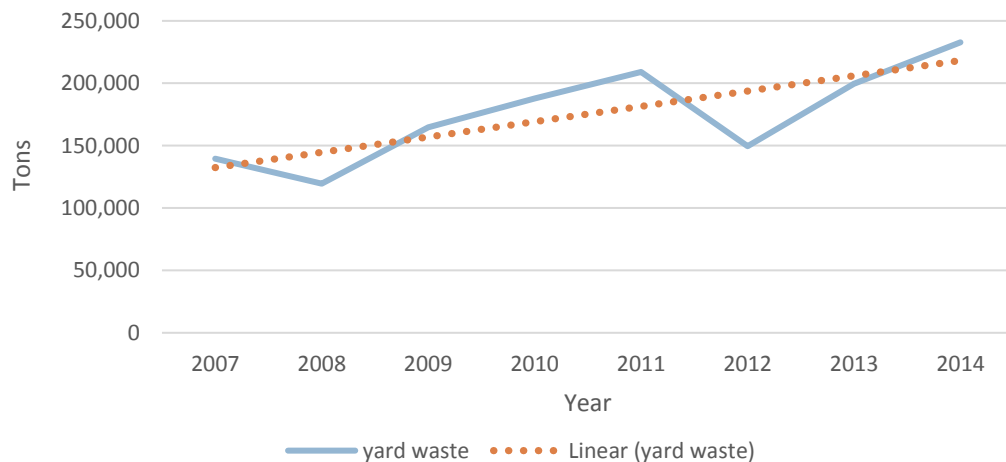
**c. Community Collection**

Communities willing to host used tire collection drives can receive reimbursement funding for their efforts. This program, funded in part through the Community Clean-up Fund Committee, a committee hosted by Franklin County Public Health, reimburses communities for tire collection events, at a maximum of \$500 per event two times per calendar year. Reimbursement funding is contingent upon the approved annual budget for the program. Funds for this program are generated by restitution fees from environmental crimes in the District. Six tire drives were hosted in 2014. Tonnage and number of tires collected are not directly reported to SWACO but are captured by tire recyclers and reported to OHIO EPA. If all communities hosted a tire collection drive, potential costs for this program would be \$41,000 (41 political jurisdictions at \$500 maximum per event, two times a year).

**2. Yard Waste**

Based on the analyses conducted in the Residential/Commercial Waste Composition Analysis over 80% of yard waste is diverted. As shown in Figure H-15, composting tonnages demonstrate a linear increase. The higher tonnages reported in 2011 and 2014 are considered anomalies.

**Figure H-15. Yard Waste Recycling**



SWACO’s program, Yard Waste Management, relies on two strategies for managing yard waste.

**a. Education**

Backyard composting is promoted on the website. SWACO also supports and promotes Franklin County Soil and Water’s backyard composting programs. Opportunities to develop more partnership relationships with other similar interest groups possibly in conjunction with existing university and nature park programs are being considered.

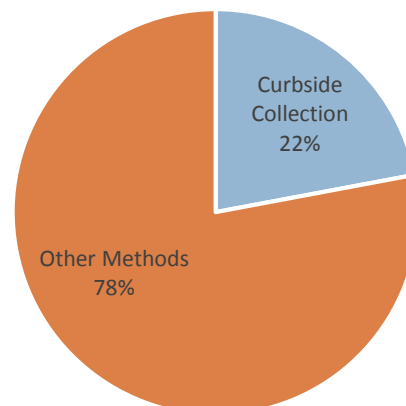
Further education efforts on ways that residents can divert more yard waste through existing curbside collection and at available drop-off sites is an area of opportunity for diverting more yard waste. Similarly, more educational to help reduce contaminants in the yard waste is also of interest. SWACO has been exploring options for working with communities and contractors to address these educational opportunities.

**b. Compost Processor Contracts**

SWACO contracts with county registered compost processors to accept materials at no charge to the residential customer. Several outlets are available and convenient for residents. In addition, the majority of political jurisdictions (municipalities, villages, and townships) offer some type of curbside yard waste collection services.

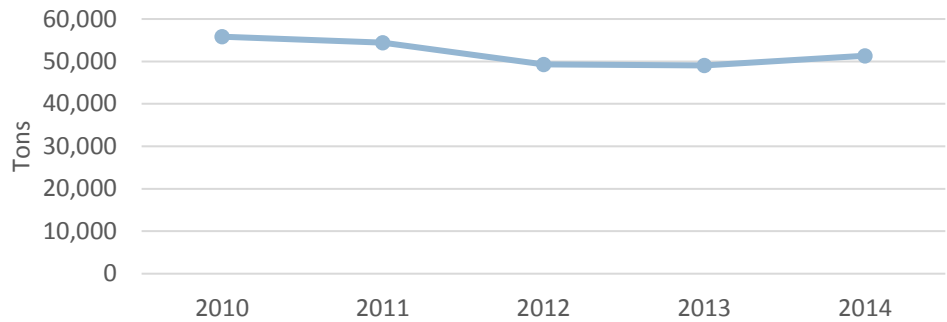
Political jurisdictions are surveyed to capture the yard waste data collected at the curb. Of those reporting, approximately 22% (51,340 tons) of all residential materials generated is attributed to curbside yard waste collection programs. Over three-fourths of the communities’ yard waste programs contribute less than one-fourth of the diverted yard waste. The other 78% (181,474 tons) is diverted from other infrastructure services such as commercial hauling or direct residential hauling as shown in Figure H-16.

**Figure H-16. Yard Waste Collection Methods**



Historically curbside yard waste diversion has remained at roughly one-fourth of the total yard waste diversion. As shown in Figure H-17, curbside yard waste has dropped slightly since 2010. The effectiveness of the curbside yard waste programs is not evaluated in this analysis.

**Figure H-17. Curbside Yard Waste Diversion**



Yard waste is managed at facilities located in district and out-of-district. In-district facilities handled the majority (97%) of yard waste composted. Of the in-district facilities two processors hold contracts with SWACO to provide yard waste composting. One contractor has restrictions on the size of the material they will accept for no charge, while the other contract will accept all materials at no charge to the customer. These contracts were developed at different times in the past with different terms and agreements. One contract expires in 2022 and the other contract in 2025. SWACO will be evaluating these contracts for the next Plan Update.

Reported tons of yard waste accepted by these processors is listed in Table H-11. This table also lists the cost of the contract and calculates the cost per ton to manage the yard waste. The contract costs are firm but tonnages fluctuate yearly so cost per ton also fluctuates yearly. Contract costs do not include transportation or hauling.

**Table H-11. In-District Yard Waste Contracted Processor Data for 2014**

In District Contracted Processor	Tons	Authority Contract Costs	Cost/Ton
Processor 1 (3 permitted locations)	95,342	\$1,200,000.00	\$12.59
Processor 2 (1 permitted location)	130,568	\$285,000.00	\$2.18

There is a large amount of money being spent and a large amount of material being collected. This program is uniquely structured relative to

peer communities. Compost processor contracts require limited data collection regarding source generation.

In addition, there are best practice considerations around reduction strategies, donation programs, composting (backyard, curbside, drop-off) technologies and policy which could be explored in the future.

### **3. *Lead-Acid Batteries***

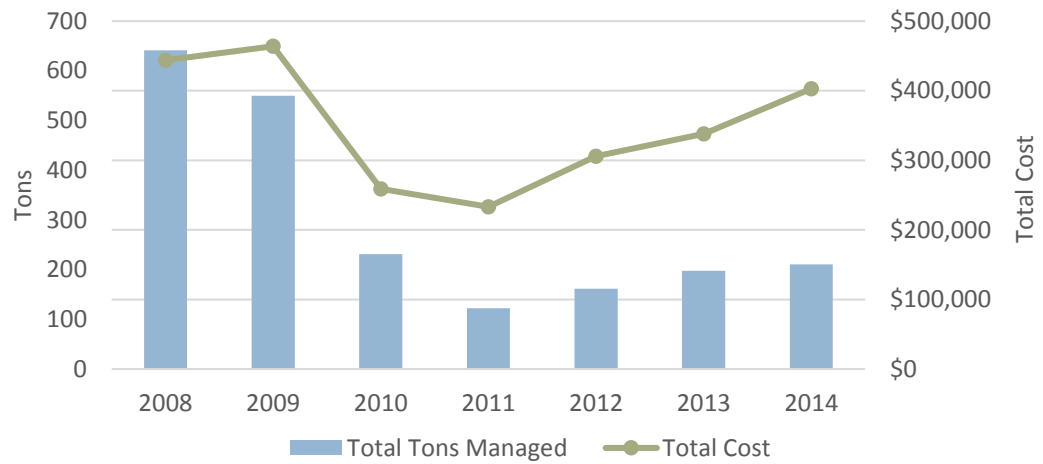
U.S. EPA gathers and analyzes data from generators and recyclers and reports in “Advancing Sustainable Materials Management: Facts and Figures 2013” a high recovery rate of 99% for lead acid batteries. This is because, lead-acid batteries have a high recycling value and the majority of the states (39, Ohio included) have laws requiring retailer take-back. Lead-acid batteries have a strong recycling infrastructure in the District even though data collected is lacking.

A total of 102 tons of lead-acid batteries were reported recycled: 97 tons from scrap yards reported and 5 tons from HHW activities (collection events and permanent facility). Recycling data from commercial businesses is not captured. Even though lead-acid batteries are banned from landfills, there is not a formal or informal arrangement between OHIO EPA and the commercial businesses to collect battery recycling data.

### **4. *Household Hazardous Waste***

Since the early 1990’s, SWACO has assisted residents to properly manage HHW by offering opportunities to divert these materials from the landfill. Figure H-18 below shows the total tons managed and the total costs of managing the materials from 2008 to 2014.

**Figure H-18. Household Hazardous Waste Managed Tons and Cost**



**Notes:**

Tonnages shown include all materials accepted, even lead-acid batteries.

In 2014, \$326,284 was spent to manage HHW at the permanent site, and approximately \$69,430 was spent on the four mobile sites (costs only include lease and contract costs). On a per pound basis this is close to the median costs (\$0.78/lb.) for HHW collection nationwide at \$0.79/lb. collected<sup>4</sup>. The median in metro areas is typically \$0.85/lb. SWACO’s program costs measure up nationally demonstrating well contracted costs for the program.

Year 2010 was a transition year to exclude latex paint from the collection events. In this year, latex paint was excluded but the material was not turned away if brought to events. In 2011, latex paint was turned away. Even though latex paint was excluded at collection events residents could utilize the permanent facility to manage the paint. Starting in 2012, the contractor assessed a user fee of one dollar per can of paint. This fee and service was managed by the contractor and provided separately from SWACO contract. Since the paint collection service was offered separate from the existing contract with the service provider no data was collected on the amount of paint diverted for a period of years.

These program changes are reflected in the significant decrease in tonnage in Figure H-18, although alternative paint diversion/recycling services existed and materials were captured this data was not provided to SWACO during those years. Latex and oil based paint quantities collected annually from 2008 to 2014 are shown in Table H-12. Since 2011, the tons of materials are following a steady rise. Specific material data shows annual increases in oil-based paint.

<sup>4</sup> “A Comparison of Household Hazardous Waste Programs”, Cascadia Consulting Group, 2005

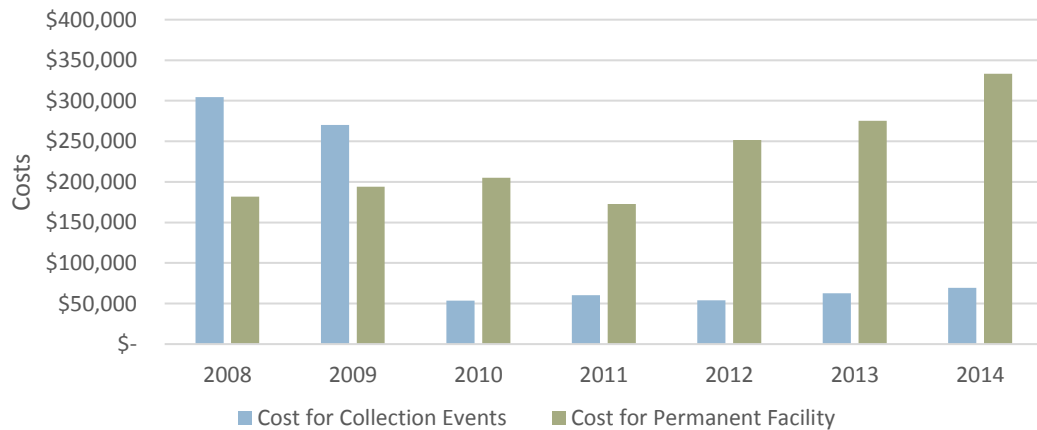
**Table H-12. Tons of Latex and Oil Paint Collected at HHW Opportunities**

Material	2008	2009	2010	2011	2012	2013	2014
Latex and Oil Paint	451	375	109	21	20	32	38

Even through the amount of materials collected by the contractor through SWACO’s program has leveled out in recent years the costs have continued to increase. Based on analysis this has been attributed to the types of materials that have been collected through the program and their varying costs. Primarily the cost increase is due to the increased amount of flammable materials disposed of through the programs which is also one of the costlier materials to dispose of.

Mobile and permanent collection opportunities have pros and cons. Logistically arranging the mobile collection events are very time intensive. During 2008, 13 mobile collection events were offered. In 2014, 4 mobile collection events were offered. Figure H-19 shows the difference in costs between the mobile collection and permanent facility collection since 2008.

**Figure H-19. Household Hazardous Waste Collection and Permanent Facility Costs**



SWACO relies on three management methods to divert household hazardous waste (HHW) from the waste stream.

**a. Education**

Collection events are advertised and promoted through social media, paid advertising, newsletters, and the website. Product stewardship and purchasing non-hazardous materials is a strategy that is being considered. Some information regarding take-back options for certain materials is available on the website.



## b. HHW Collection Events

The number of events was lowered to four in 2010 to decrease program costs and for management purposes. While the costs declined significantly, the number of cars decreased as well as the tonnage of materials collected. (Note: Communities hosting collection events may receive reimbursement costs. These costs are not included in this analysis.) Table H-13 shows the number of cars recorded each year.

**Table H-13. Household Hazardous Waste Program Changes**

Year	Program Change	Collection Event Number of Cars	Permanent Facility Number of Cars
2008	13 mobile collection events plus permanent facility	8,807	5,182
2009	13 mobile collection events plus permanent facility	7,967	5,006
2010	4 mobile collection events plus permanent facility, no latex paint (transition year – still accepted paint if brought to an event)	1,761	4,228
2011	4 mobile collection events plus permanent facility, no latex paint	2,472	2,144
2012	4 mobile collection events plus permanent facility, latex paint accepted for a user fee	1,985	4,289
2013	4 mobile collection events plus permanent facility, latex paint accepted for a user fee	2,396	6,295
2014	4 mobile collection events plus permanent facility, latex paint accepted for a user fee	2,334	4,689

This analysis shows the participation (number of cars) declined when the program limited the number of collection events to four. Less convenience had a direct impact even though the permanent facility was available.

## c. Permanent Facility

Permanent facility hours of operation are available during weekdays and typical work hours. Usage data tracking cars demonstrates a decline of cars but it seems to be rebounding. Studies have not been conducted to determine reasons for the decline. It is possible if the opportunity were more convenient the program might measure increases in tonnage and cars. A study could help determine if the public would like to see opportunities such as curbside collection, At Your Door Service, additional user fees,

advance disposal fees, outsourcing collection events to communities, and/or expanded permanent facility services.

## **5. *Electronics***

Electronic waste (e-waste) is one of the fastest growing waste sectors as technology continues to advance. Cell phones, computers, TVs, tablets and other electronic devices are being discarded at an alarming rate as technology continues to improve and people want the best technology devices. SWACO provides an inventory of e-waste outlets. Some retailers offer take-back programs. SWACO has recently established a contract for the collection and processing of e-waste. All 41 political subdivisions, schools within the County, and Franklin County agencies have the ability to use this program to divert e-waste by hosting mobile collections and/or using permanent drop-off facilities.

## **6. *Other Difficult to Manage Wastes***

There is a lengthy list (e.g., food waste, textiles, durable plastics, plastic bags, etc.) of difficult to manage materials generated and difficult to divert from the landfill. As a solid waste management district, SWACO is in the position to look for opportunities to manage these discard streams responsibly and then inform/educate the public.

There is currently a list of collection options available on the website where residence and businesses can recycle and dispose of various difficult to manage waste stream items. Recently, additional research as begun to identify similar new services offered in the District. Making this information more accessible is a near term goal.

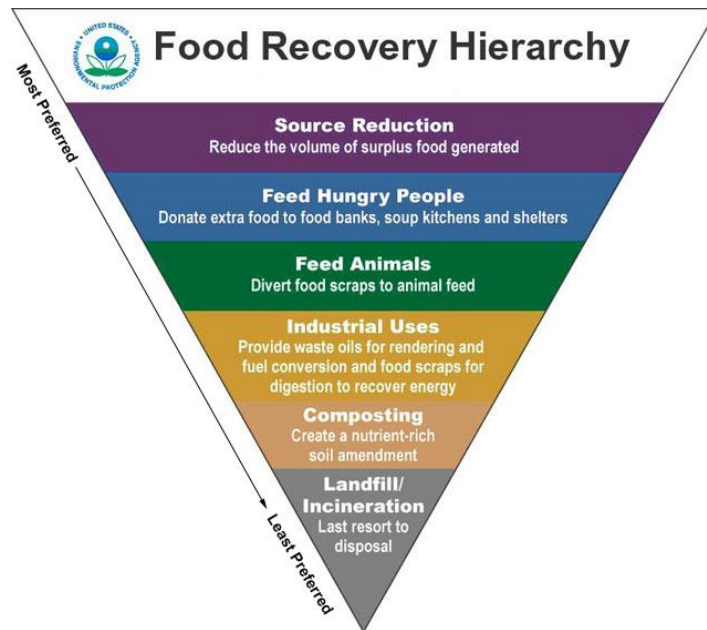
### **a. *Food Waste***

Within the organics stream, a small percentage (3%), or approximately 6,148 tons, is attributed to food waste diversion as reported to Ohio EPA by compost processors and haulers. The reported diverted tonnage does not give great understanding to the food waste handling throughout Franklin County. For example, food waste hauler data is reported as one value. Neither the haulers nor the destination of the materials is reported. There are no large-scale permitted facilities processing food waste in the District. Processors diverting District food waste are located out-of-district. One in-district facility is permitted to handle food waste but does not accept food waste.

The 2013 waste composition study approximates 12.8% of waste landfilled is food waste which equates to the District landfilling 124,625 tons of food waste. Food waste is a diversion opportunity that is largely untapped.

The U.S. EPA food recovery hierarchy, shown in Figure H-20, moves from preferred to least preferred food recovery methods reinforcing the highest and best use of food waste.

**Figure H-20. US EPA Food Recovery Hierarchy**



Within SWACO’s boundaries, there are grassroots and non-profits offering collection and/or accepting food to feed hungry people. The extent of the network within the District is unknown. Some of these groups, which SWACO has recently been collaborating with, includes the Mid-Ohio Food Bank and Community Plates. Both groups are just beginning to share information with SWACO and work together to expand existing efforts.

Through conversations with the largest hauler of food waste, it is understood that a significant portion of the diverted food waste is diverted by feeding animals at farms in neighboring counties.

Adequate infrastructure for collecting and processing food waste is the main barrier for increased diversion efforts. Research shows that it is unlikely for a food waste program to be profitable at the system level (accounting for the cost of collection as well as the facility capital payments and operational costs) unless waste tip fees are above \$60 per ton. As the Franklin County Sanitary Landfill charges \$42.75 per incoming ton, subsidies or new policy

will likely be necessary to keep the system profitable. It's assumed that the economic feasibility for operating a facility has had a large influence on limiting infrastructure

Compost at any scale produces high quality compost; which opens the door to a wide range of markets and end uses. Decentralized approaches reduce private and public sector costs for managing waste and develop programs that include schools, universities, pedal-powered collection systems, worker-owned cooperatives, community gardens, and farms. A diversely developed system reinforces sustainability and environmental stewardship. These opportunities are unexplored.

There is an anaerobic digester is located within the District. While the digester does accept small amounts of food waste, it is limited in what services they provide based on their material specification requirements.

Over the past year SWACO has been participating in numerous conversations, discussions and committees to address the food waste issue in Central Ohio. Some of these efforts include the Franklin County Food Action plan, which one of the four main goals is to reduce food waste in the county, the MORPC food waste working group, which developed a list of options food waste diversion options to explore, and collaborating with the OSU academic research and assistance, as well as meeting with entrepreneurs and small start-up businesses.

SWACO understands the value in reducing and diverting food waste in the District. As part of an effort to address issue SWACO plans to lead and facilitate discussions with community stakeholders and residence to identify feasible solutions that address common goals. Developing this road map will be an important component to effectively managing the waste in Central Ohio.

**b. Construction and Demolition (C&D)**

U.S. EPA's "Advancing Sustainable Materials Management: Facts and Figures 2013" estimates 530 million tons of C&D debris were generated. The report further indicates that demolition represents over 90 percent of the total C&D debris generation as opposed to construction which represents under 10 percent.

In Ohio, C&D waste does not fall under the definition of municipal solid waste. Thus, this is not a waste SWACO is responsible to manage. However, when C&D waste is disposed in the Franklin County landfill it takes up space and reduces the life of the landfill. Franklin County landfill reports zero

tonnages of C&D waste. There are two C&D landfills in Franklin County. Very little is known about C&D management in Franklin County. SWACO hopes to better understand this topic in the future and promote available recovery and diversion options that benefit Central Ohio.

**c. Pharmaceuticals**

SWACO is a partner in the National Prescription Drug Take-Back Day. More than a dozen locations to safely dispose of prescription drugs are available. SWACO has been tracking recent participation and diversion through this program and has seen a sharp increase in recent years. Nine communities offer permanent collection options at local law enforcement locations. Some retailers are also beginning to offer take-back programs. SWACO's website inventories all pharmaceutical diversion options available in the District.

**7. Summary Findings**

- Education on retailer take-back programs and available outlets has increased over the past year.
- Residents have user-fee outlets promoted by SWACO and retailer take-back programs.
- SWACO collaborates with the Franklin County Community Clean-up Fund Committee to assist communities with tire collection drives; however, cost to provide community assistance would increase if all communities would participate. Communities do not report tire data collected to SWACO. Further opportunities to improve scrap tire collection could be explored.
- Education and outreach on yard waste management has been limited in the past. Increased education to promote more yard waste diversion is of high interest.
- Residents can deliver yard waste to several composting and drop-off locations throughout the District at no charge. The majority of yard waste delivered for composting is from residential direct haul or commercial haul.
- Compost processor contracts do not require recording of source (i.e. whom delivers the yard waste) data or monitoring of drop-off materials.
- Education on reduction of HHW and product stewardship is an opportunity that SWACO is working towards improving.
- Residents generating HHW have opportunities of a permanent collection and four mobile collection locations provided by SWACO to properly manage HHW. Diverted tons increased 6% from 2013 and program costs rose 16%.

- Mobile and permanent collection methods are the only methods explored for HHW diversion. Further evaluation of this program is needed to in order to increase its impacts, efficiency, and ability to keep cost as low as possible.
- Electronic waste programs are now being offered.
- Approximately 12.8% of landfilled waste is food waste. Reduction and recovery efforts within the District exist but are limited. Infrastructure and opportunities for food waste diversion need further exploration. SWACO, along with the City of Columbus and others, has provided leadership in convening and participating in stakeholder meetings to assess food waste diversion needs and opportunities. Some of the findings of these meetings identified education and infrastructure development as priorities for food waste reduction and recovery needs and resulted in the “Local Food Action Plan” which provides a framework of common goals and actions that unifies residents, schools, community organizations, businesses and local government in supporting a strong local food system and included issues around food waste.

**G. Diversion Analysis**

Waste diversion, or activities which prevent resources from entering the landfill/becoming waste, includes reuse, recycling and composting. Waste diversion generates a host of environmental, economic and social benefits, including conserving energy, reducing disposal costs, creating jobs and reducing the burden on landfills and other waste disposal methods. The diversion analysis takes a look at the waste reduction and diversion programs, infrastructure, rates, trends and materials.

**1. Diversion Programs and Infrastructure**

Table H-14 provides an abbreviated list of the diversion programs and infrastructure within the District for year 2014.

**Table H-14. Diversion Programs and Infrastructure**

	Waste Minimization	Reuse	Recycle	Compost
<i>Generating Sector</i>	Residential, Commercial (Businesses, Institutions, Multi-family, etc.), and Industries	Residential, Commercial (Businesses, Institutions, Multi-family, etc.), and Industries	Residential, Commercial (Businesses, Institutions, Multi-family, etc.), and Industries	Residential, Commercial (Businesses, Institutions, Multi-family, etc.)

	Waste Minimization	Reuse	Recycle	Compost
<i>Collection</i>	Not applicable	Self-haul, Not-For-Profit hauling, Charity hauling, or Not applicable because in-house reuse	Decentralized: Public, Private, and Self-haul	Decentralized: Public and Self-haul
<i>Diversion Programs</i>	Limited Education	Limited Education	Curbside Drop-off Scrap Recyclers Private hauler collection routes Education	YW Management Community collection (21 programs)
<i>Outlet Opportunity/Facilities</i>	Not applicable	Various reuse centers and thrift stores throughout Franklin County	2 MRF's private owned/operated Contracted HHW outlets Various scrap yards	5 registered Class IV for yard debris private owned/operated publicly available; 1 registered Class II for yard debris, animal waste, and food scraps private owned/operated publicly available 1 registered Class III private owned/operated - not publicly available

As shown in Table H-14, SWACO has limited programs to address waste minimization and reuse. The top management hierarchy of waste is the most preferred method of reducing reliance on landfills since, unlike reuse or recycling, waste minimization eliminates the generation of waste material. A list of available reuse services is being developed as part of a comprehensive database of services available to residence and businesses in the District.

Reuse infrastructure heavily falls on non-profits and their development of reuse centers. Reuse centers give materials a second life through reuse thereby diverting the material from landfills. Reuse infrastructure is scattered throughout the District and operates independently. Programs with proven success that could be explored include waste minimization and reuse are volume-based incentive-fee collection

systems, education and outreach approaches, creation and promotion of a reuse and repair network.

SWACO has a number of programs and opportunities/facilities to manage recycling. Recycling infrastructure is extensive with 33 non-subscription curbside programs and over 200 drop-off locations. Recovered tonnages from the curbside program are good but there is opportunity to recover more. Recovered tonnages from the drop-off program have been decreasing. Best practice areas such as cart-based automated curbside collection programs, volume-based billing collection programs, multi-family curbside, and policy have proven success to increase collected material tonnages.

The compost infrastructure consists of 21 collection programs and 5 publicly available privately owned compost facilities, one of which is a Class II that can accept food waste and animal waste. (Note: The Class II facility is permitted but is not active in processing or accepting food waste.) The facilities are conveniently located to those living within the City of Columbus and its suburbs. In addition, several drop-off locations are available. SWACO contracts with two compost processors to take an unlimited quantity of yard waste from District customers, at no cost, and process it.

Table H-15, identifies the infrastructure outlet/facility available to manage/recycle the listed materials.

**Table H-15. Material recycling at available infrastructure outlets within the District:**

Material	Curbside	Drop-Off	ReUse Centers and Thrift Stores	Retailer Take Back	Scrap Recyclers	MRF	HHW Facility and Events	Compost Facilities	Landfill	Transfer Facilities	C&D Landfill	Other <sup>1</sup>
White Goods (appliances)				X	X							
Batteries (household)				X			X					
Batteries (lead-acid)				X	X		X					
Glass	X	X			X	X						
Tins Cans	X	X			X	X						
Aluminum Cans	X	X			X	X						
Cardboard	X	X			X	X						
Other Paper (magazines, mixed paper, newsprint, etc.)	X	X			X	X						
Plastic #1-7	X	X			X	X						



Material	Curbside	Drop-Off	ReUse Centers and Thrift Stores	Retailer Take Back	Scrap Recyclers	MRF	HHW Facility and Events	Compost Facilities	Landfill	Transfer Facilities	C&D Landfill	Other <sup>1</sup>
Tires				X					X	X		X
Textiles			X									
Used oil				X			X					
Wood				X	X							
Electronics			X	X	X							
Paint							X					
HHW <sup>2</sup>							X					
Ferrous Metals					X	X						
Non-Ferrous Metals					X	X						
Food Waste												X
Yard Debris	X							X				
C&D			X								X	
Other Hard to Recycle Materials							X					X
Pharmaceuticals					X							X

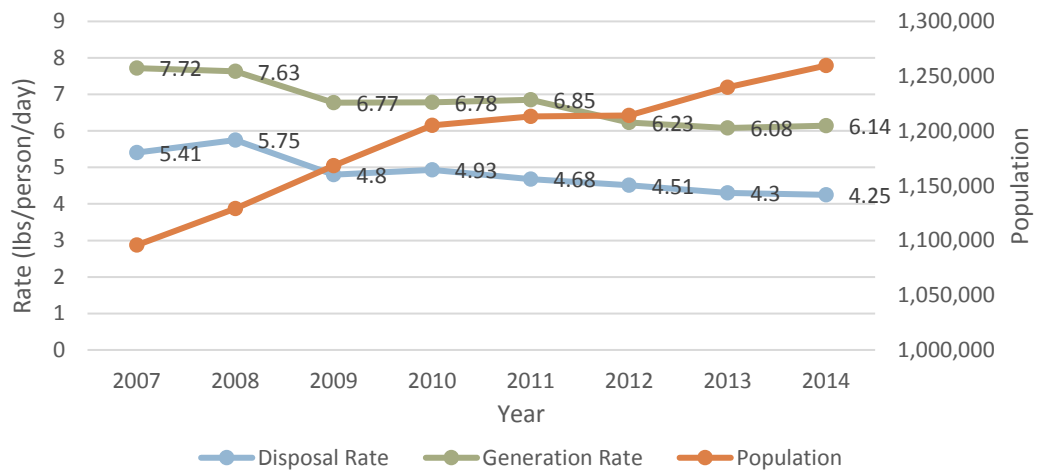
**Notes:**

<sup>1</sup>Other: Tires accepted at Community Clean-up Events; food waste is diverted through recovery practices; pharmaceuticals collected at partner locations.  
<sup>2</sup>See SWACO website for active list of materials accepted.

**2. Disposal Rate and Trends**

Population is increasing and the per capita waste generation and disposal rate are decreasing as shown in Figure H-21.

**Figure H-21. Historical Residential/Commercial Generation Rate, Disposal Rate, and Population**



The greatest contributing factor of the decreasing per capita generation rate is decreased disposal, which has decreased over the past seven years by 9.7%. Waste diversion has increased but at a slower 2.6% rate. No correlations for decreasing waste disposal were revealed in this analysis. Statewide municipal solid waste disposal also decreased at about the same rate (9% from 2010-2014). This is not surprising since out of the 52 solid waste district's, SWACO ranked third highest for landfilling the most (waste disposal landfilled from power plants was excluded).

Figure H-22 depicts the historical waste diversion, disposal and generation rates.

**Figure H-22. Residential/Commercial Generation, Disposal, and Diversion Tonnage**

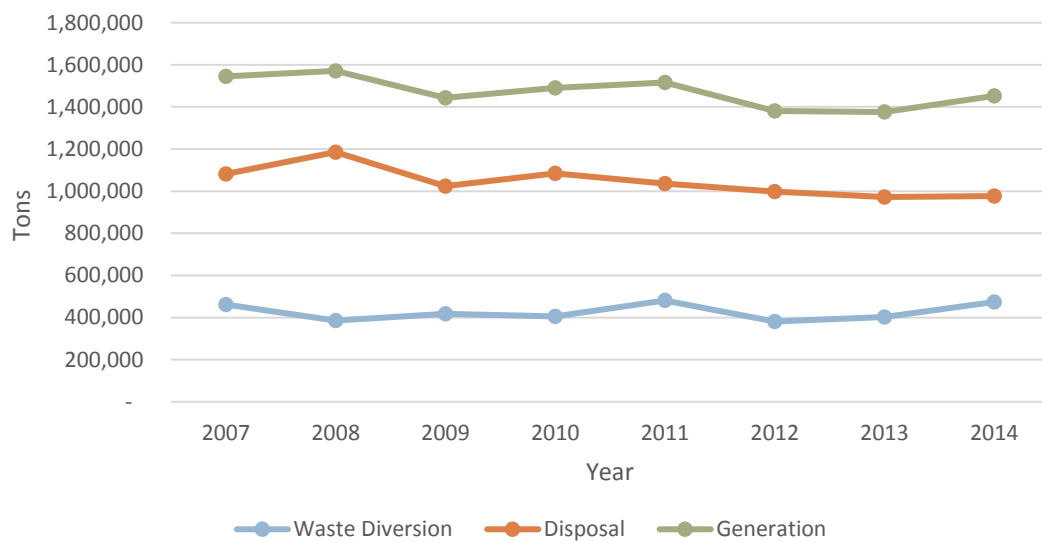
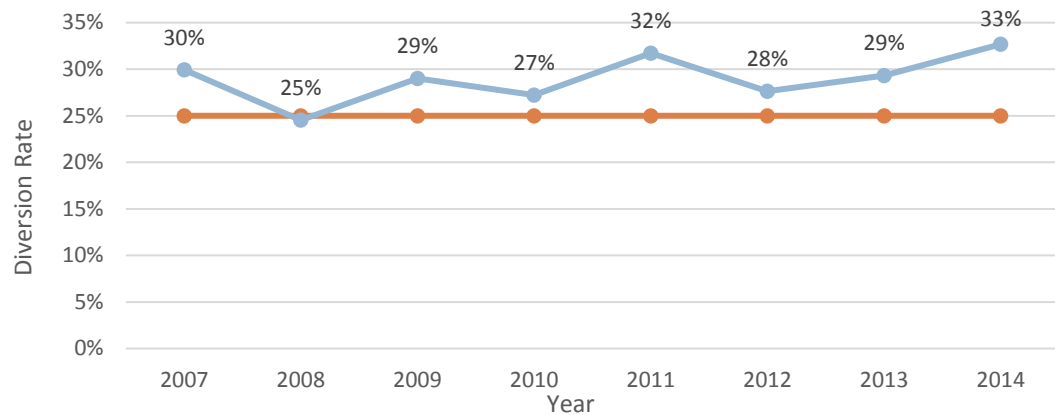


Figure H-23 shows the diversion achieved over the past seven years in comparison to the State residential/commercial waste diversion goal, represented by the red line. The higher peaks in 2011 and 2014 are attributed to increased volumes of yard waste diversion. SWACO has consistently demonstrated a residential/commercial diversion rate at or above the state goal.

**Figure H-23. Residential/Commercial Diversion Rate**



One factor of a flat diversion may be a result of the changing waste stream. Evolving materials such as aseptics/cartons, bulky ridge HDPE plastics, tubs and lids (Nos. 2, 4 and 5 plastics) are becoming more prevalent. These lighter feedstocks are taking the place of denser printed materials and consumer packaging. Additionally, as manufacturers seek to use less energy and materials for greater savings along the production and distribution chains, the weight of the lighter feedstock is also decreasing. More tons resulting from lighter packaging is light-weighting.

Another factor that may contribute to a flat diversion rate may be data collection. SWACO has consistently recorded diversion data from programs, communities, scrap yards, and processors and relied on OHIO EPA sourced data from compost facilities, commercial businesses, and material recovery facilities (MRFs). The data sourced and recorded is essential, but efforts for capturing the commercial sector are limited to Ohio EPA sourced data and the few buybacks, processors, and MRFs reporting. Efforts to enhance data collection are underway and will show clear improvements in the 2015 Annual District Report.

Some programs have achieved more diversion and some have not as shown in Table H-16. Additional program analysis is provided in various sections of this Appendix

**Table H-16. Historical Program Recycling**

Program	2010	2011	2012	2013	2014
Curbside Recycling	46,299	32,486	42,175	64,005	64,937
Drop-offs	15,924	16,444	14,843	10,136	9,523
HHW Collection Events	122	107	162	197	170
HHW Permanent Facility	included with HHW Collection Events				
Electronics Recycling	1	344	4,339	880	990
Scrap Tire Collection	19,581	19,167	19,722	19,154	18,833

Program	2010	2011	2012	2013	2014
Yard Waste Management	189,685	211,491	153,585	201,511	238,847
Surveys (OHIO EPA DATA + Processors)	134,198	200,985	146,651	107,455	141,265
<b>Total Tons</b>	<b>405,810</b>	<b>481,024</b>	<b>381,477</b>	<b>403,338</b>	<b>474,565</b>

**Notes:**

HHW tonnages do not include lead-acid batteries.

**3. Diverted Materials**

Figure H-24 shows the residential/commercial diversion achieved by material in the reference year. The greatest diverted material is yard waste.

**Figure H-24. Residential/Commercial Diversion by Material**

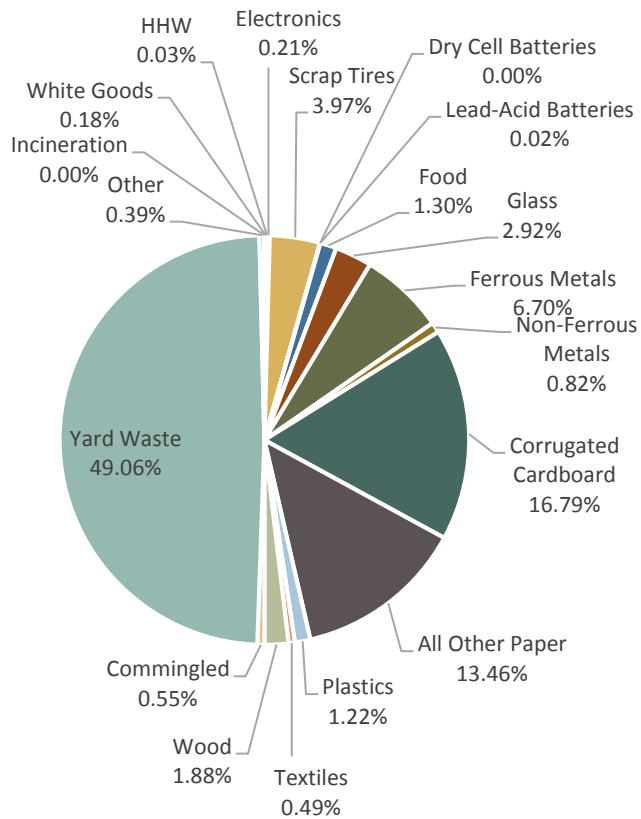


Table H-17 shows the historical residential/commercial diversion rates.

Table H-17. Historical Waste Diversion

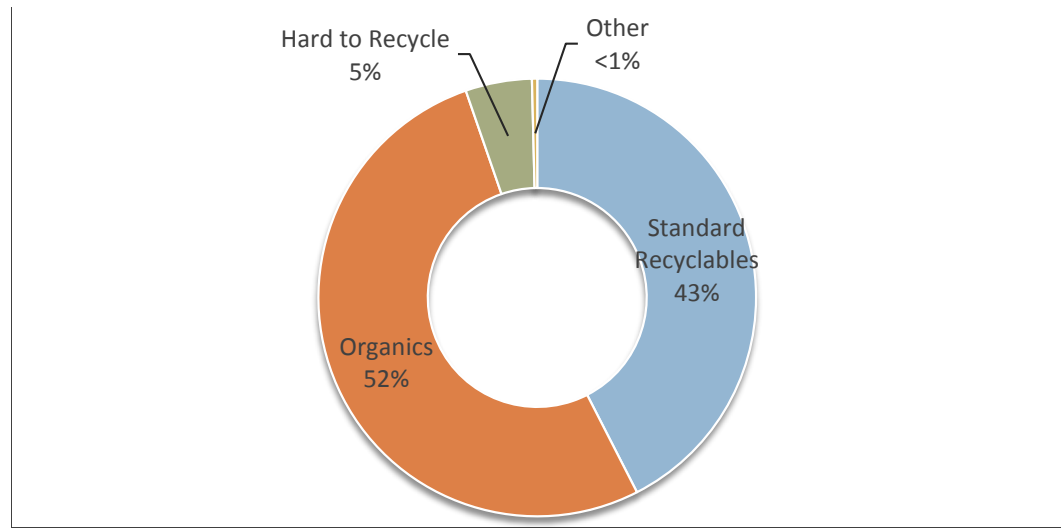
Material	2007	2008	2009	2010	2011	2012	2013	2014
<b>Standard Recyclables</b>								
Ferrous metals	12,872	131,713	54,232	58,362	56,150	38,208	11,736	31,816
Non-ferrous metals	6,876	11,980	6,282	7,877	16,742	8,556	7,369	3,894
Cardboard	98,819	19,372	48,007	40,594	58,789	65,682	51,030	79,659
Other paper	40,043	21,543	57,629	72,071	76,692	53,027	64,322	63,890
Plastic	5,063	2,928	3,012	5,000	7,471	5,597	5,648	5,805
Glass	33	7	290	8,961	14,611	12,582	29,076	13,848
Commingled	107,906	59,629	68,816	3,216	4,376	5,423	5,732	2,626
<i>Subtotal</i>	<i>271,612</i>	<i>247,172</i>	<i>238,268</i>	<i>196,081</i>	<i>234,830</i>	<i>189,075</i>	<i>174,913</i>	<i>201,538</i>
<b>Organics</b>								
Yard waste	139,501	119,552	164,767	187,748	209,007	149,693	199,628	232,814
Food	0	654	0	1,937	2,484	3,814	1,883	6,148
Wood	0	45	149	251	9,364	9,466	1,055	8,941
<i>Subtotal</i>	<i>139,501</i>	<i>120,251</i>	<i>164,916</i>	<i>189,936</i>	<i>220,855</i>	<i>162,973</i>	<i>202,566</i>	<i>247,903</i>
<b>Hard To Recycle Materials</b>								
White goods	5,600	7,452	1,488	2,335	3,220	1,980	1,300	840
Batteries	0	261	28	38	153	165	175	107
HHW	571	641	231	122	107	162	197	165
Rubber	0	0	0	0	0	0	0	0
Tires	45,305	9,679	9,679	16,290	19,167	19,722	19,154	18,833
Textiles	0	0	0	0	17	1,769	2,205	2,349
Used oil	0	0	0	0	0	0	0	-
Electronics	0	26	0	1	344	4,339	880	990
<i>Subtotal</i>	<i>51,476</i>	<i>18,059</i>	<i>11,836</i>	<i>18,895</i>	<i>23,024</i>	<i>28,137</i>	<i>23,911</i>	<i>23,284</i>
Other	0	0	3,319	900	2,315	1,291	1,950	1,840
<b>TOTAL TONS</b>	<b>462,589</b>	<b>385,482</b>	<b>417,929</b>	<b>405,702</b>	<b>481,009</b>	<b>381,476</b>	<b>403,340</b>	<b>474,565</b>

**Notes:**

HHW tonnages do not include lead-batteries.

Waste diversion materials can be categorized into the following categories: standard recyclables, organics, hard-to-recycle materials and other. As shown in Figure H-25, standard recyclables make up 43% (201,538 tons), organics make up 52% (247,903 tons), hard-to-recycle make up 5% (23,284 tons) and other make-up less than 1% (1,840 tons) of the waste diverted from the landfill.

**Figure H-25. Waste Diversion 2014**



Of the standard recyclable materials collected, corrugated cardboard is the material that is the most diverted followed by mixed paper and ferrous metals. The largest organic material diverted is yard waste. Of the hard to recycle materials, scrap tires are the material that is the most diverted.

**4. Potential Diversion**

The 2013 Waste Characterization Study, provides an indication of what materials are being landfilled. Within each of the categories, a certain portion of the waste materials could be pulled out for recycling and recovery while others are not as easily recoverable. Table H-18 calculates potential opportunities for recovery by applying these waste composition percentages to the 2014 landfilled (977,451 tons).

**Table H-18. Opportunities for Diversion**

Material	Landfill Composition - Percentage of Waste Materials	Tons Potentially Recoverable
OCC	11.4%	111,625
Newspaper	1.9%	18,572
Office Paper	2.8%	27,369
Other Mixed Paper	13.1%	128,046
PET #1	2.8%	27,662
HDPE #2 - Natural	0.5%	4,887
HDPE #2 - Colored	1.5%	14,662
PVC #3	0.3%	2,932
LDPE #4	4.0%	38,609
Other Plastics	8.2%	79,662

Material	Landfill Composition - Percentage of Waste Materials	Tons Potentially Recoverable
Aluminum Cans	0.8%	7,331
Steel/Tin Cans	1.2%	11,729
Other Ferrous Metals	1.6%	15,639
Other Non-Ferrous Metals	0.7%	6,353
Container Glass	2.8%	26,880
Yard and Pet Waste	5.9%	57,670
Textiles	8.0%	78,196
Food Waste	12.8%	124,625
Wood	5.4%	52,782
Other	14.2%	138,309
Unsorted Loss	0.4%	3,910
<b>TOTAL</b>	<b>49.4%</b>	<b>977,451</b>

The column labeled “Tons Potentially Recoverable” demonstrates potentially available material for diversion. Since the materials are disposed there is room for program improvement to capitalize on the diversion. Table H-18 is a rough estimate exercise demonstrating diversion opportunity. Some if not most of the infrastructure is already in place to handle the materials. Thus, higher diversion rates are possible. Some of these streams are more difficult to manage and would require infrastructure changes or development.

## 5. *Summary Findings*

- Education and outreach related to address waste minimization and reuse are limited.
- R/C waste diversion has been stagnant through the reference year; data collection efforts are likely contributing to the stagnant diversion rates.
- R/C programs recovering higher tonnages include: yard waste management, curbside and scrap tire collection; overall, curbside diversion programs are improving.
- Yard waste and fibers are greatest quantity of materials recovered from the R/C sector.
- Based on the waste characterization study, opportunity is available to recover and/or divert more materials.

## H. **Special Program Needs Analysis**

Ohio Revised Code 3734.57(G) gives SWMDs the authority to fund special pragmatic needs and activities. SWACO does fund and provide activities and programs that fall into this category. Activities and programs SWACO provided in 2014 include: Environmental Crimes Task Force, Adopt-A-Roadway, Litter Hot-line, Litter Crew, Litter Management, Litter Marshall, Health Department, Waiver Program, Grants, and Environmental Steward Office.

This analysis evaluates the performance and status of these activities and programs and the value to the District.

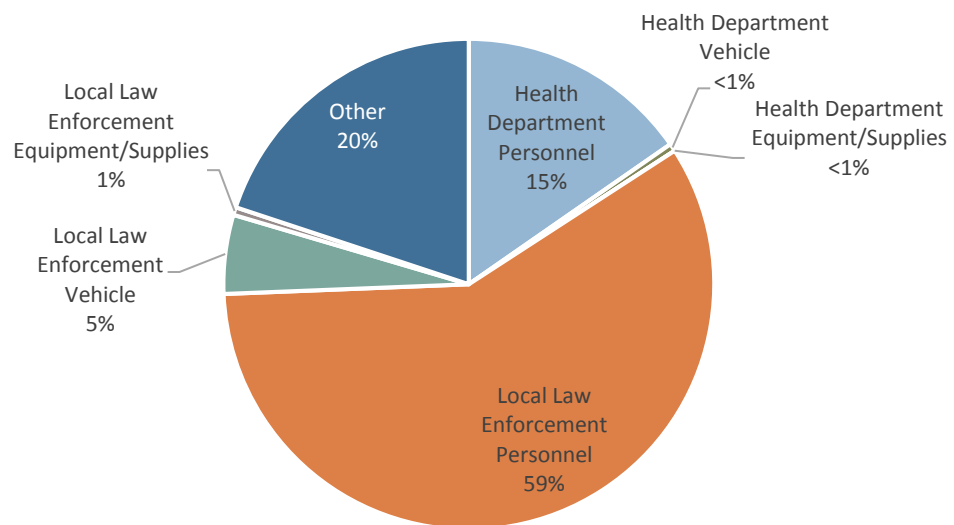
**1. Environmental Crimes Task Force**

SWACO designed the Adopt-A-Roadway, Litter Hotline, Litter Management, and Litter Marshall to mutually work to minimize the negative aesthetic, economic, safety and health impacts of litter and illegal dumping by involving citizens in reporting and to clean littered areas and illegal dump sites. To strengthen enforcement and prosecution of those caught littering SWACO expanded efforts to fund Franklin County Board of Health to investigate and prosecute those who litter, illegally dump waste or violate SWACO Rules. This partnership between SWACO and the Franklin County Board of Health provided comprehensive, multi-agency, anti-dumping enforcement services to Franklin County officials to educate law enforcement personnel, health department sanitarians and zoning officials about the laws, ordinances and regulations that prohibit illegal disposal of solid waste.

Over time what evolved is the Environmental Crimes Task Force (ECTF). The Environmental Crimes Task Force consists of the Franklin County Board of Health, Franklin County Prosecuting Attorney’s Office, Franklin County Sheriff’s Office and the City of Columbus Division of Refuse. These team partners administer the program.

In 2014, SWACO provided \$403,903 to the ECTF. Figure H-26 shows the distribution of expenses within the program.

**Figure H-26. Environmental Crimes Task Force Expenses**





In 2014, there were 38 convictions, 400 community service hours ordered and \$79,129.74 ordered in restitution/fines. Restitution/fines are allocated to the Community Clean-up Fund. The Community Clean-up Fund Committee is comprised of five members representing Municipalities, Franklin County and a member of a regional environmental group. The committee was created as a result of the ECTF but operates separately to manage and disburse funds for clean-up activities. Franklin County Public Health oversees the Community Clean-up Fund Committee activities. SWACO attends committee meetings.

Enforcement of litter crimes is a challenging task for many SWMDs. SWACO's program is structured, organized, coordinated, and highly regarded throughout Ohio. This program has been around since 1992 providing cooperative and mutual benefits to agencies involved. It has resulted in numerous convictions, logged many hours of community service, and collected restitution fines. This is achievable because the government is 100% committed, as are task force staff. All involved parties diligently follow through on their duties and responsibilities with regard to the program.

The longevity speaks to its success, however, could it operate better or more efficiently and at lower costs? An outside consulting agency was hired in 2015 to perform an internal review of the task force to review management procedures. The report identified some areas to improve such as recording of data and invoicing which the task force and SWACO are collectively addressing.

Adopt-A-Roadway and the Sheriff's highway program (litter crew cleanup) are both managed by the ECTF. In addition, throughout Franklin County, Ohio Department of Transportation and various organizations participate and/or organize roadway cleanup activities.

A preliminary evaluation of the program determined that since the program's inception it has brought value towards addressing and preventing illegal dumping problems, most significantly addressing larger dump sites in the District. Through the preliminary evaluation and engagement with ECTF members, it was also identified that there are many opportunities for enhancing the program through improved outreach activities, collaboration, law enforcement training, and data collection, analysis and reporting. To address these opportunities a multi-year action plan was formed. The action plan kicked off in 2016 and will continue into 2017.

SWACO currently provides full funding of all ECTF member personnel. Starting in 2017, to help improve the long-term sustainability of the program, SWACO plans to work closely with the ECTF partner agencies to better understand the value of the program as it relates to their independent missions. The goal of this engagement is

to identify cost sharing opportunities to fund portions of the program through the financial support of partner agencies.

## **2. Health Department**

The Health Department receives funding for its role in the ECTF as well as for testing of public and private wells adjacent to the landfill to verify that the landfill is secure and not leaching anything into the water table. In 2014, SWACO spent \$3,442 for well testing. All task force expenses and discussions are included under Environmental Crimes Task Force program.

Well testing monitoring is performed at landowner requests. Monitoring performed is invoiced to SWACO.

Environmental public health addresses the interrelationships between human health and the environment. The environment does not only include natural environment and natural hazards but also the human-built environment and the unintended human contribution to illness and harm on human health.

SWACO values the relationship with Franklin County Public Health and hopes to continue collaborating in meaningful ways and to explore new opportunities to improve public health related to solid waste in the County.

## **3. Community Trash-Pass Waiver Program**

The waiver program permits the delivery of municipal solid waste to the Franklin County Sanitary Landfill without requiring disposal fees for activities related to community clean-up efforts. Municipalities, villages, or townships with SWACO's jurisdiction are eligible to receive waivers for litter clean-up activities. This is beneficial in helping some communities to combat blight and litter in communities during their cleanup events. In recent years, it appears this program has become an opportunity for trash removal in communities rather than blight and litter cleanup. The program has been stretched beyond the original intent. SWACO is currently evaluating this program to ensure its original intention of litter prevention/clean-up, blight, and illegal dumping is being met.

## **4. Grants**

In 2014, SWACO spent \$118,000 on grant disbursements. Grants help divert materials from the landfill while addressing opportunities to leverage our waste stream by investing in sustainable and innovative initiatives. The grant programs have recently gone through an overhaul to improve its performance, impacts, measurement, and criteria for eligible participation. These changes included a new cash match requirement so applicants are more invested in the process. SWACO

rolled out the revised program in the spring of 2016. Applications awarded through the revised grant program include nonprofits, community organizations and government agencies. Funded projects covered a range of waste reduction, reuse and recycling initiatives. Assistance with market development has not been a focus in past years. Developing funding mechanisms to assist and grow private sector recycling services through a grant program is a strategy SWACO is exploring.

## **5. *Environmental Steward Office***

In 2014, SWACO spent \$118,612 as a grant agreement to the City of Columbus for purposes of assisting the Office of Environmental Stewardship in their duties to work closely with SWACO to: reduce the reliance on the landfill; plan for environmentally responsible solid waste disposal; and support waste reduction and reuse programs and technologies that will be both environmentally and economically sustainable. The grant has been provided annually and identifies a scope of work. SWACO funding was used for staff within the Environmental Stewards Office. Projects implemented by these staff focused on partnering through initiatives related to SWACO's diversion programming such as residential outreach and education and business assistance. The Office provides an annual report detailing the impacts of funding. The types of projects supported include GreenSpot (a green certification program for residents and businesses), the Green Purge (a community reuse and recycling collection event), ReCollect (an online recycling reminder service that saw over 200,000 addresses searched, over 37,000 calendars downloaded, and 31,956 households sign up for active reminders) and Waste Wizard (a recycling directors where over 22,000 items were searched). SWACO continues to work with the Office to work ensure there is programmatic alignment.

## **6. *Summary Findings***

- Environmental Crimes Task Force is a long-standing program that has provided value to the District.
- There are opportunities to improve the performance of the ECTF. A qualitative measure of program performance and value is being evaluated. It appears some of the task force efforts are duplicated by other efforts.
- Expanding upon the relationship with Franklin County Public Health to evaluate and address other solid waste public health issues is an opportunity that SWACO is pursuing.
- The waiver program (community trash pass program) needs further evaluation. Revising this program to ensure it is addressing its original focus may be necessary.
- Environmental Steward Office annually receives a grant but the benefits, successes and intent for assisting SWACO's mission could be improved.

SWACO has been working more closely with the Environmental Steward Office over the past year.

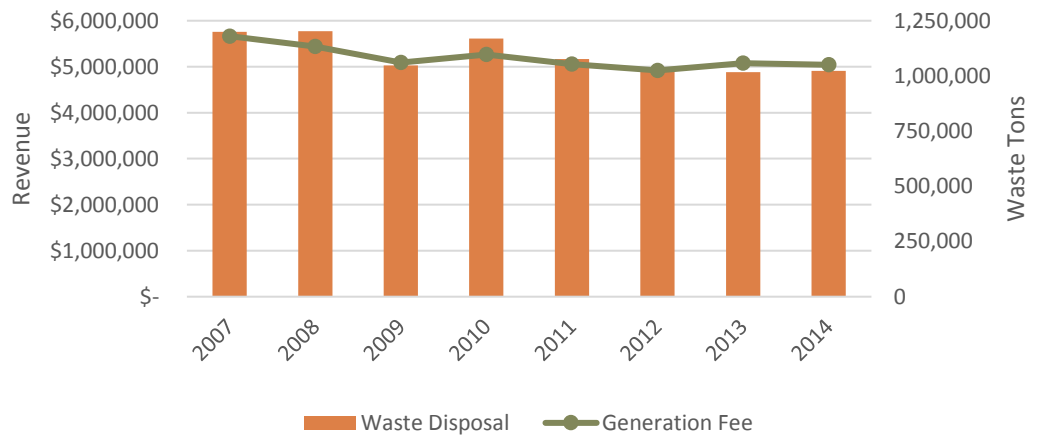
**I. Financial Analysis**

**1. Revenues**

In accordance with ORC 3734.573, a solid waste management policy committee may levy fees on the generation of solid wastes within the district. Levying a generation fee means any landfill or transfer facility receiving district waste, regardless of where in Ohio the waste is disposed, remits the generation fee. In 1992, SWACO adopted, ratified, and implemented a \$5.00 per ton generation fee. To evaluate SWACO’s financial position currently and during the planning period the historic revenues were analyzed.

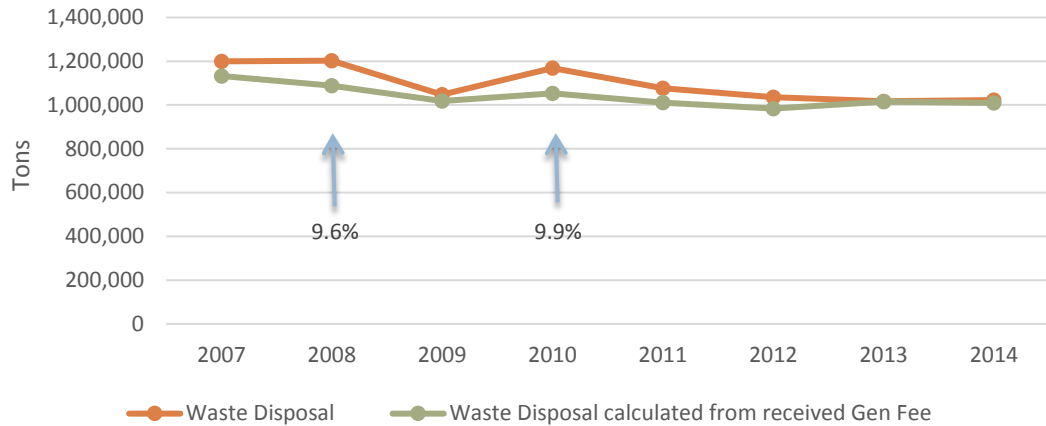
The first historic financial piece analyzed compares generation fees to the waste disposed. As shown in Figure H-27, the revenues have fluctuated in pattern with the waste disposal tonnages. Except for a few years where waste disposal tonnages were greater than the revenues received.

**Figure H-27. Historic Generation Fees and Waste Disposal**



SWACO operates on a cash accounting basis, and, as a result, tonnages for fee tracking purposes are not recorded until fee revenue is actually received from a landfill facility. These accounting procedures could result in higher tonnages and lower revenues; however, it would be expected to level out the next year or at least remain consistent. Since that doesn’t show on this graph a further look into the tonnages was taken. In Figure H-28, the tonnages calculated from received revenues were plotted against the reported disposal tonnages. [Note: Landfills and transfer facilities are required to file facility annual reports with Ohio EPA detailing waste disposed and from the originating district.]

**Figure H-28. Reported Disposal versus Actual Revenue Disposal**



As shown, two years depict an almost 10% difference between the tonnage reported and the tonnage fees were collected on. In these years SWACO received less generation fees. After 2011, the gap between the tonnage reported and the tonnage fees were collected on closed significantly depicting a 2% variance. SWACO uses flow control laws to direct District waste to the Franklin County Landfill. This strategy has been a strength for tracking District waste disposal.

Historically, generation fees have provided approximately 95% or more of annual funding, shown in Table H-19. This is stable revenue for SWACO.

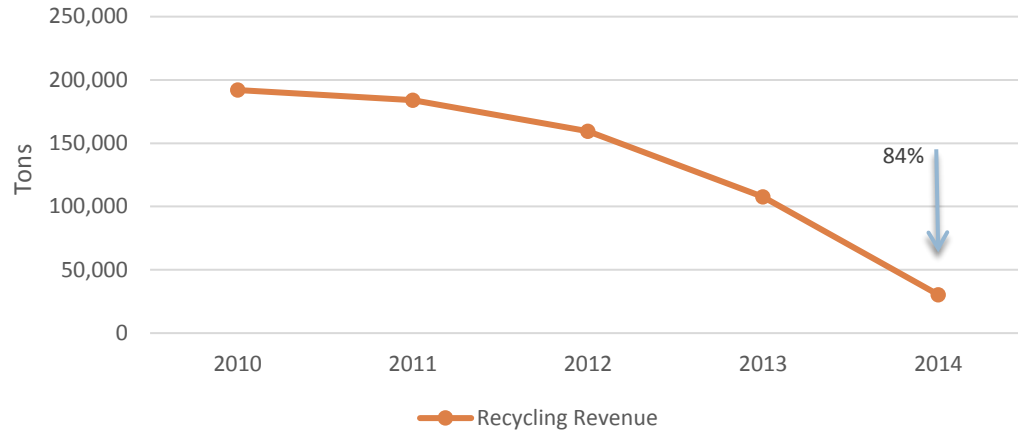
**Table H-19. Historic Revenue Streams**

Revenue Stream	2010	2011	2012	2013	2014
Generation Fee	\$5,264,995	\$5,053,809	\$4,918,851	\$5,074,001	\$5,044,910
Recycling Revenue	\$192,020	\$184,030	\$159,621	\$107,708	\$30,436
Other	\$5,000	\$46,591	\$49,660	\$204	\$14,060
Grants	\$270,629	\$0	\$0	\$27,200	\$0
Reimbursements	\$1,969	\$0	\$250	\$0	\$0
<b>Total Revenues</b>	<b>\$5,734,614</b>	<b>\$5,284,430</b>	<b>\$5,128,382</b>	<b>\$5,209,113</b>	<b>\$5,089,406</b>
% Generation Fee Sourced	92%	96%	96%	97%	99%
Cost/person/year	\$4.93	\$4.51	\$4.36	\$4.40	\$3.99

The remaining revenues contributing 5% or less, constitute grant moneys, recycling revenue, reimbursements, and miscellaneous other. Of that 5%, the majority of revenue received is from recycling revenue. Ultimately, market conditions determine the revenue received. The 2014 recycling revenues are over 80 percent lower than 2010 revenues. The decline is a result of a couple of factors. First the drop in commodity pricing and short-term market agreements has been substantial. Second the revenue sharing contract is based on quantities and composition from

the drop-box program; a program that has been steadily measuring declining tonnages. See Residential Recycling Infrastructure Analysis for further explanation.

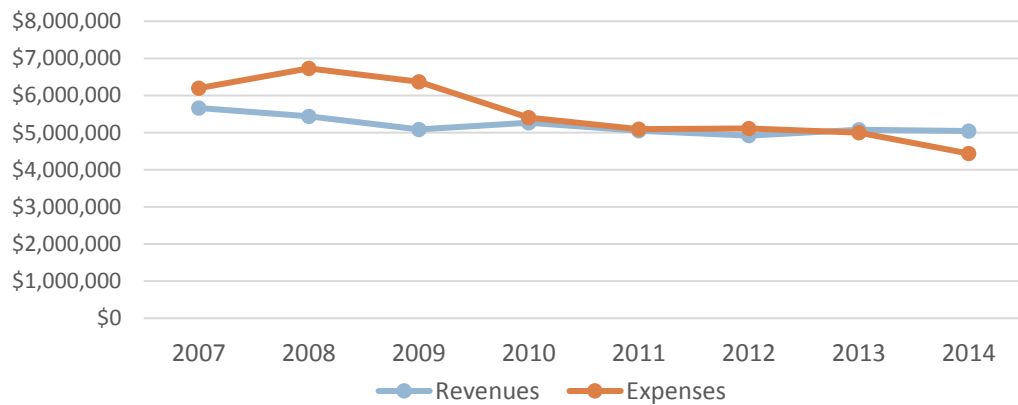
**Figure H-29. Recycling Revenue**



**2. Expenditures**

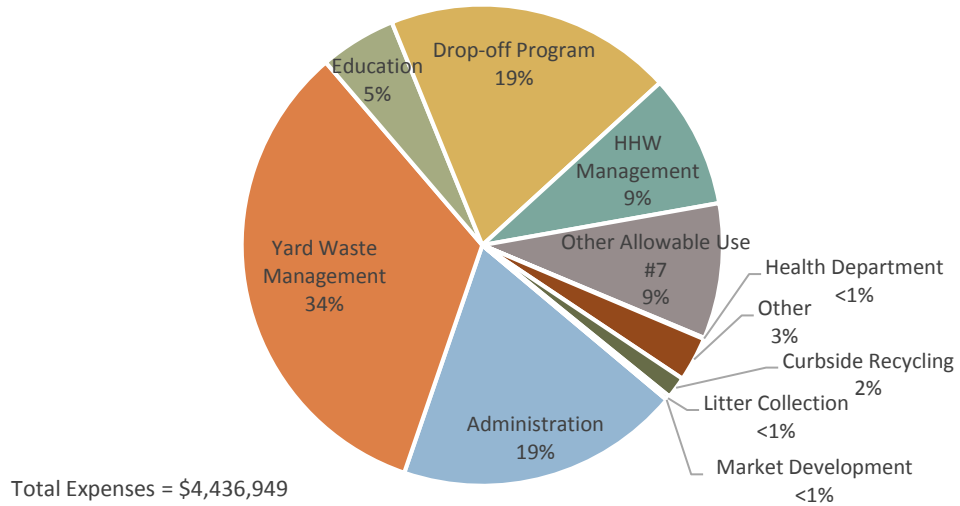
Prior to 2011, the District was extracting from the carryover balance to cover the deficit. Over the past five years, expenses have declined, largely as a result of administration restructuring. Figure H-30 shows revenues in comparison to expenses.

**Figure H-30. Historical Revenues and Expenses**



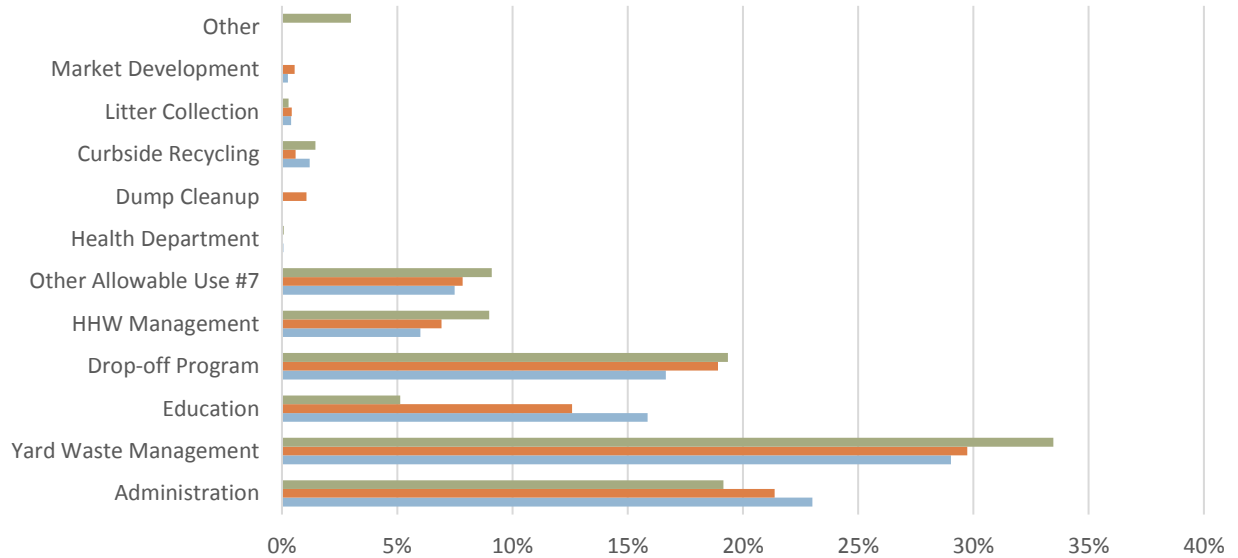
SWACO’s generation fee funds solid waste reduction, reuse, recycling and composting programs operated by SWACO in support of the solid waste management plan. Management of these programs includes fulfilling obligations to organize and/or provide programs, funding, enforcement, and education. In 2014, SWACO’s expenses fell into the following distribution categories as shown in Figure H-31.

Figure H-31. Expense Distribution 2014



For the past three years, this distribution has remained relatively consistent, as shown in Figure H-32.

Figure H-32. Historical Expense Distribution 2014



	Administration	YardWaste Management	Education	Dropoff Program	HHW Management	Other Allowable Use #7	Health Department	Dump Cleanup	Curbside Recycling	LitterCollection	Market Development	Other
2014	19%	33%	5%	19%	9%	9%	0%	0%	1%	0%	0%	3%
2013	21%	30%	13%	19%	7%	8%	0%	1%	1%	0%	1%	0%
2012	23%	29%	16%	17%	6%	7%	0%	0%	1%	0%	0%	0%

■ 2014 ■ 2013 ■ 2012

SWACO’s role instituting this network of programs varies. In 2014, SWACO’s programs can be categorized into a variety of roles which are detailed in Table H-20.

**Table H-20. SWACO’s Roles**

SWACO Role	Program
SWACO funds and operates	Administration Drop-off Program Education Market Development Other
SWACO provides contracting assistance	Curbside Collection
SWACO funds through contracts to private partners to operate	Yard Waste Management HHW Management Other Allowable Use #7 Dump Cleanup Litter Collection

Approximately a third of SWACO’s budget is historically spent on the yard waste management program. The next largest expenses are administration and drop-off program. Table H-21 presents SWACO’s expenses showing program costs, tons recovered, and program costs per ton. To help understand what services are included in the expenses this table also briefly describes the services each program is tasked.

**Table H-21. District Program Costs**

Program	2014 Costs	2014 Tons Recovered	Cost/Ton (all staff time allocated to admin. costs)	2014 Program Services
Yard Waste Management	\$1,485,000	238,847	\$6.22	Contract cost with 2 service providers to process (compost) all District yard waste materials.
Drop-offs	\$858,636	9,523	\$90.16	Operational (staff members and fringes, gas, and miscellaneous) and capital (fleet) costs to provide and service drop-off recycling containers.



Program	2014 Costs	2014 Tons Recovered	Cost/Ton (all staff time allocated to admin. costs)	2014 Program Services
Administration	\$898,232	n/a	n/a	Costs for 6 staff members and fringes, rent, utilities, supplies, equipment, travel and overhead. Also includes plan monitoring.
ECTF	\$341,449	n/a	n/a	Costs include Adopt-A-Roadway, Litter Hot Line/Litter Crew, Community Clean-up Fund
HHW Management	\$398,685	170	\$2,345.21	Costs include contracts (private processor to hold 4 collection events and operate a permanent facility), building lease, and a per pound price for residential HHW.
Electronics Recycling	\$146,506	990	\$0.00	Education provided.
Scrap Tire Collection	\$0	18,833	\$0.00	Program costs are not included under generation fee program costs.
Education	\$227,680	n/a	n/a	Costs include website, social media, Environmental Steward Office, Business Roundtable expenses, Business Outreach expenses, Community Outreach, News from SWACO, School District Recycling, Teacher Technical Assistance, Teacher Workshops, Classroom Presentations, and Landfill Tours.

Program	2014 Costs	2014 Tons Recovered	Cost/Ton (all staff time allocated to admin. costs)	2014 Program Services
Curbside Recycling	\$64,706	64,937	\$1.00	Technical assistance costs to facilitate community consortiums.
Litter Collection	\$12,611	n/a	n/a	Education and waiver program.
Health Department	\$3,442	n/a	n/a	Costs to health dept. for well testing.
Market Development	\$0	n/a	n/a	n/a
Data Collection (Ohio EPA Data + Processors)	Included in admin. costs	141,265	n/a	ReTRAC and data collection.
<b>TOTAL</b>	<b>\$4,436,949</b>	<b>474,565</b>		

**3. Summary Findings**

- Historically generation fees provide 95% or more of annual funding and are stable revenues.
- The two largest program expenses include yard waste management and drop-offs.
- Programs with the highest cost per ton include HHW (collection events and permanent facility) and drop-offs.
- Program with the greatest recovery and lowest expense is curbside recycling.

**J. Regional Analysis**

Collaboration is a process where people or organizations come together to solve problems with a common goal. Through the process of sharing differing perspectives, experiences and resources we can expand opportunity and improve performance. Collaboration enables decision makers to realize several benefits, including mutual respect for agency/jurisdictional authority, unified efforts, collective support with mutually beneficial financial outcomes. Geographically differing economic challenges, program performance, constituent demands and emerging technologies, issues faced by all Ohio’s SWMDs, dictate that regional concepts be explored.

Jurisdictional collaboration is not new. Medical, public safety, utilities, water and sewer, entertainment entities have all capitalized upon the beneficial dynamics of regionalization. Local regionalization efforts have been broadly explored between (hospitals, emergency

services, local venue funding) as civic leaders have also been politically hopeful to garner savings from multi-jurisdictional overlap and inefficiencies. Urban, rural plus small and large communities have benefited as costs and volume responsibilities are spread over a larger population of participants while educational, management and purchasing power are shared.

Solid waste managers are similarly familiar as RCRA's Sub-Title D lined landfill mandates (late 1980's) and subsequent waste reduction and diversion goals were all catalyst for the formation of Ohio's SWMD (HB 592) and similar governing agencies across the US. As such, by joining forces and economies of scale, communities have been able to explore best available technologies while implementing projects that individually would have been too expensive to develop for a single entity

Since Ohio's Comprehensive Solid Waste Management Law in 1988, Ohio SMWDs, comprised of single- or multi-county entities, have been faced with the need to provide an ever-increasing number of services for their member communities and citizens, while forecasting the future, comply with regulatory obligations, implement policy into actions, and achieve mandated goals while competing with similar entities (public and private) for material and financial resources. Complicating this landscape are waste sheds which rarely align with political and jurisdictional boundaries. Boundaries additionally fluid due to population growth, exodus or business and industry expansion or contraction, solid waste site closure, new technologies plus impacts from regulatory changes (flow control, policy, legislation, etc.). SWACO service area comprises 10% of Ohio's population and nearly one-half of surrounding SWMDs population. SWACO's central location, waste stream resources and populace will trigger regional opportunities for collaboration, partnerships and new jurisdictional consideration.

### **1. Regional Waste Shed**

The implementation of Designated Facilities for solid wastes generated within SWACO provides a stable and reliable source of funding for SWACO, waste for the Franklin County Sanitary Landfill, and ensures safe and responsible disposal of waste. However, emerging trends within the waste and recycling industry favor larger regional facilities, often fed by regional and extra regional sources, which support the ongoing capital and operational demands of these high performing and technically sophisticated operations. Developing inter-regional relations and accompanying import/export designations along with market sustainable pricing and contracts are essential to developing sustainable funding models.

To fully meet SWACO's desires for greater waste diversion, additional capacity for recyclables and organics processing may be required. If successful, this will reduce the stable flows of waste and funding currently enjoyed by the landfill from its flow controlled area, which will need to be replaced at some level for SWACO to continue to meet its facility operations and obligations. The dual need for greater investment

and continuing waste flows makes the opportunity for regional cooperation even more of a necessity if SWACO expects to meet its ambitious performance objectives.

Table H-22 outlines the 2014 fee structures of the regional solid waste management districts.

**Table H-22. District Fee Structures 2014**

District	Type of Fee	Fee
Delaware, Knox, Marion, and Morrow	Contract Fee for designated facilities	\$6.00 per ton
North Central	Generation Fee	\$5.00 per ton
Fayette, Highland, Pickaway, and Ross	Generation Fee	\$3.00 per ton
Coshocton, Fairfield, Licking, and Perry	Disposal Fee Generation Fee	\$1.25/\$3.50/\$1.25 \$2.00 per ton
SWACO	Generation	\$5.00 per ton

Disposal fees are levied on any waste disposed within a solid waste landfill located within that District and generation fees are levied on any solid waste generated within its borders, regardless of where in Ohio the waste is disposed. Generation fees and contract fees are levied in addition to the tipping fee or gate fee charged at landfills or transfer facilities. Table H-23 outlines the 2014 fee structure of the landfill and transfer facilities in Franklin County.

**Table H-23. Disposal Facility Rates 2014**

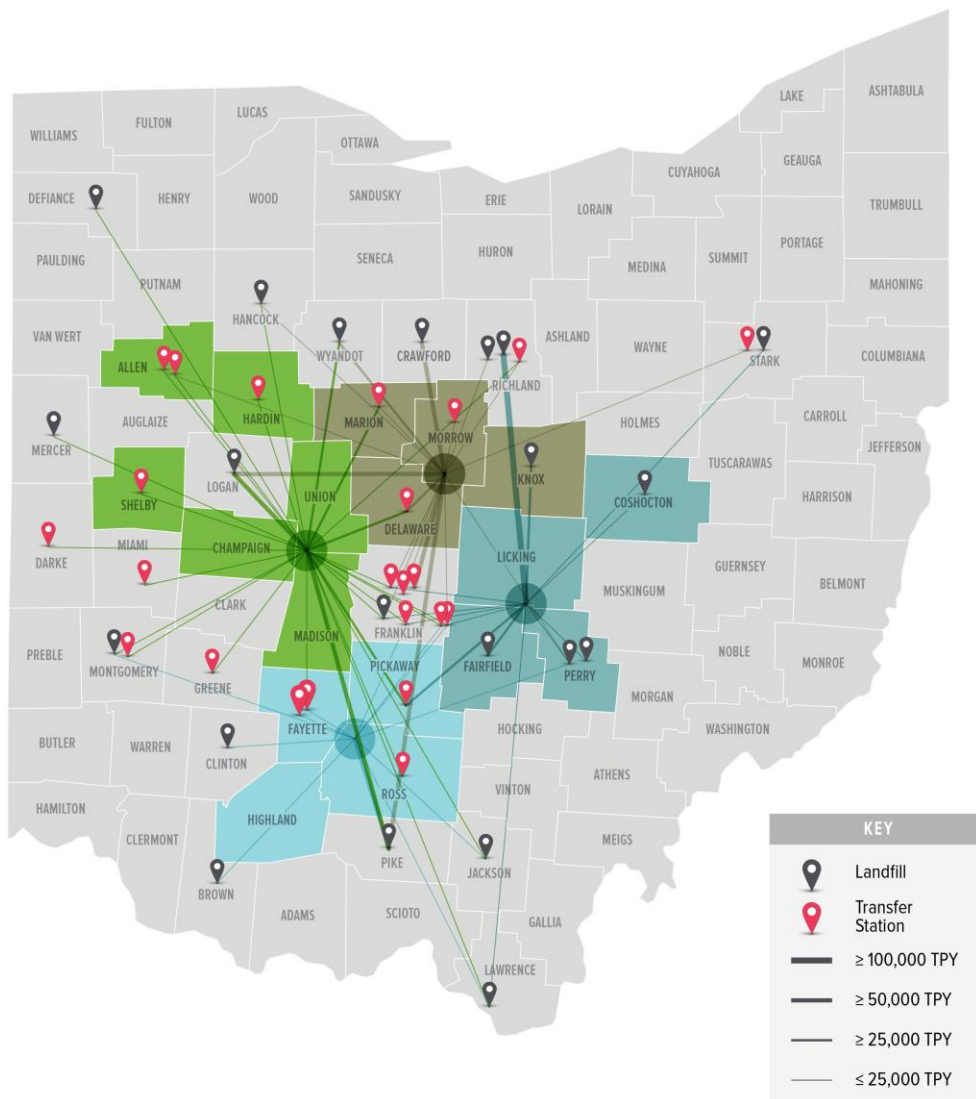
District	Tipping Fee
Columbus Transfer and Recycling	\$42.75 per ton
Reynolds Avenue Transfer Station	\$48.59 per ton
Georgesville Road Transfer Station	NA
Local Waste Services	unpublished
Waste Management of Ohio Transfer & Recycling	\$54.50
Jackson Pike Transfer Station	\$54.75 per ton on in-district waste \$55.75 per ton on out-of-district waste
Morse Road Eco-Station	\$55.75 per ton on in-district waste \$56.75 per ton on out-of-district waste
Franklin County Sanitary Landfill	\$42.75 per ton on in-district waste \$43.75 per ton on out-of-district waste

Figure H-33 is a representation of waste flows in 2014. The lines on the figure represent waste inbound to landfills or transfer facilities. As shown, more waste is

directed to other out-of-district landfills and transfer facilities than incoming to facilities in Franklin County. Waste flowing into SWACO is mostly routed through transfer facilities; very little is direct hauled to the Franklin County Sanitary Landfill from out-of-district. In fact, most of the waste incoming to transfer facilities located in Franklin County is being transferred to out-of-district landfills. The Franklin County Sanitary Landfill reported a little less than 5,500 tons disposed waste came from out-of-district. While the receiving transfer facilities reported transferring over 184,000 to out-of-district landfills.

This is not surprising considering the Franklin County Sanitary Landfill has higher regional tipping fees. Additionally, waste incoming would be charged the generation fee from any exporting solid waste district in addition to the slightly higher tipping fees.

**Figure H-33. Regional Solid Waste Disposal 2014**



## **2. Identified Stakeholders and Partnership Opportunities**

Commonality between institutions, businesses and community organizations exist within the new integrations of solid waste, waste reduction, reuse, recycling and future infrastructure development needs. Solid waste management plus diversionary activities to reduce and divert portions of the waste stream exist within the District and the region. Considerations to perform a regional analysis and develop relevant stakeholder forums is of principle importance for SWACO.

Although SWMDs are all working towards common goals, methods to achieve goals differ. Franklin County and SWACO provide a stable and reliable base of leadership, experience, funding and material volume with which to lead a larger geographical campaign within surrounding SWMDs and a larger, non-adjacent, service area. Identified regional stakeholders include the coordinators of the four neighboring solid waste management districts, representatives of neighboring district community-based nonprofit organizations, and out-of-district processors such as compost processors accepting food waste and other hard to recycle material processors.

SWACO has a number of programs that are high performing or provide a framework that is readily exportable beyond the SWACO boundaries. The community consortiums have provided great value to its members and could be expanded beyond SWACO's borders to leverage existing and evolving development patterns. SWACO's landfill and its natural affiliation around other public service needs, particularly specialties such as waste water treatment plant sludge and cake management, special waste and management of catastrophic wastes provide opportunities for regional leadership. Existing and future facilitation such as the business roundtables and efforts with the public schools, institutions, public venues or other specialty organizations would likely perform best if not bound by simple SWACO borders.

Data consistency and rule enforcement are two areas notorious for their failures to effectively cross borders, and yet program performance and public service is greatly enhanced when managed effectively across jurisdictions. As an example, the Environmental Crimes Task Force has found success in curbing illegal dumping in the District, but it is unclear whether the offenders have come into line and begun following the law or if they have simply moved their illegal dumping elsewhere. Data sharing with peers in the region could help to identify potential 'spillage' and could be supported with mutual aid enforcement agreements. Many economic development organizations have developed regional structures, capturing the full economic development benefit of the waste resource management system and accommodating its impacts are also best served when considered in the context of the entire region.

Intra-regional effort as small as neighborhood gardens and composting, or multi-county efforts designed to entice significant infrastructure investment, supporting regional collaborations can provide significant returns. Regional efforts could be successful for processing infrastructure of food waste. Efforts to catalog the infrastructure, explore markets, enhance markets, and develop pilot collection systems. Food waste can be transformed into a number of assets from biogas as an energy source and animal feed to compost.

Planning efforts to create sustaining programs will need successful signature partnerships. SWACO is creating partnerships among decision makers, policy makers, community groups, advocacy groups, and other organizations to create opportunities. Potential partnership opportunities may include:

- Chamber of Commerce
- Ohio Grocers Association
- Ohio Council of Retail Merchants
- The Ohio State University
- Global Organic Alliance
- Mid-Ohio Regional Planning Commission
- Keep America Beautiful Affiliates
- Franklin Soil and Water Conservation District
- Solid Waste Management Districts

This expanded network of stakeholders will promote, at a minimum, improved understanding of each entities issues, improved data collection, collaborative planning efforts, shared human plus asset resources. Meaningful collaboration will depend upon strong leadership, trust, clear objectives and knowledgeable participants. As local, county and state budgets have tightened, solid waste service and achievement expectations have expanded. Collaboration, merger or the sharing of multi-jurisdictional resources will become an increasing focus of interested elected officials, policy makers, solid waste managers and interested constituents. Pooling of resources, of some form, can always help to achieve results whether planned or a derivative of exploratory efforts.

Using benchmarks both from within the region provides better insight on the volume and overall management options that will have the most significant impact on future solutions.

### **3. Summary Findings**

- In 2014, SWACO's facilities had higher tipping fees than regional facilities.
- The majority of out-of-district waste hauled into the District is transferred out-of-district for disposal.

- Community consortiums have a framework that could be expanded regionally.
- Regional opportunities exist for partnerships, infrastructure investment, data collection and sharing, rule enforcement and education and outreach messages.

## K. Population Analysis

### 1. Population

Population is projected to increase through the planning period, however, in spite of an increasing population the per capita waste generation is decreasing.

Population does affect waste generation rates but take into account the contributing factors of population growth: household income, people per household, and economic activity. Economic activity and population growth affect household income and household income impacts per capita waste generation; and higher income households tend to produce higher amounts of waste. But, it is believed that higher income households tend to achieve higher participation rates of recycling. Not to mention the demographic make-up of households in today's society. These complex factors are all simultaneously involved and affect each other because they dynamically occur over time.

SWACO's generation has historically fluctuated but within 200,000 tons. This relative consistency explains why the increasing population continually calculates lower. Examine the equation for calculating waste generation rates:

$$\frac{\text{Waste Generation (lbs/day)}}{\text{Population (persons)}} = \text{Waste Generation Rate (lbs/person/day)}$$

Looking at the equation the numerator is staying constant while the denominator is increasing resulting in a lower calculated rate.

Population increases are not expected to have incremental increases on program volumes. An analysis of the District's increasing population is provided in Chapter 2.

### 2. Summary Findings

- Contributing factors of population growth: household income, people per household and economic activity affect waste generation rates.
- SWACO has not analyzed the outreach of the programs and their effectiveness in different economic income areas or different household demographic areas.



## L. Data Collection Analysis

Waste is generated by three sectors: residential, commercial and industrial. Waste that is source reduced, recycled, composted, incinerated, and disposed are measured to establish a baseline and determine waste generation, and measure recycling rates. Collecting data is challenging due to a variety of factors and takes considerable time and effort to gather and analyze. Regardless, the primary objective of SWACO is to divert materials from landfills, therefore an accurate measurement of diversion from landfills is needed. The data collection process from beginning to end for each sector is described below.

Data availability has not prevented SWACO from achieving Goal #2 of the State Plan, which requires a waste reduction and recycling rate of at least 25% for residential/commercial waste and a recycling rate of at least 66% for industrial waste. In the 2014 reference year, SWACO's residential/commercial sector achieved a 32.6% waste reduction and recycling rate; the industrial sector achieved a 79.8% recycling rate.

SWACO actively seeks and welcomes collaboration with the assigned OHIO EPA planner on a variety of planning initiatives. Specifically, in terms of data collection, SWACO has only collaborated with the OHIO EPA planner to prepare forms for the Ohio Recycles Survey and to obtain more detailed information about data presented in OHIO EPA's reports. Moving forward, SWACO will make a more concerted effort to reach out to the OHIO EPA planner to touch base throughout the data collection process to identify areas where OHIO EPA may be able to assist SWACO or provide suggestions for improving data collection strategies.

SWACO devotes staff time to overseeing and participating in a comprehensive data collection effort, as well as hiring a consultant.

### 1. Residential Sector

SWACO gathers data from four sources using a variety of methods to capture data from the residential sector as described below.

- a. SWACO receives tonnage statistics for programs it funds directly from the contractors operating each program. Data is received for the drop-off recycling program, the permanent HHW collection center, mobile HHW collection events, and yard waste composting activities completed by the two contracted processors.
- b. SWACO uses an online waste and recycling reporting system, Re-TRAC Connect, to collect curbside recycling and community recycling program information from the residential sector. SWACO maintains a list containing contacts for each city, village, and township located within its jurisdiction. The contacts for each community are typically fiscal officers.

When SWACO began using Re-TRAC Connect in 2012, contacts were notified and invited to participate in training webinars designed to familiarize reporting users with the system and surveys. User accounts were created for each contact and account information was distributed via e-mail with instructions for participating in SWACO's surveys.

SWACO designed two surveys to capture information about the residential sector. The Material Entry survey requests the total tons of commingled recycling, solid waste, electronic waste, yard waste, and other organic materials. The survey also requests information about how yard waste was managed (i.e., delivered to a registered composting facility or land applied). The Community Form survey requests detailed information about each community's contracts for solid waste, recycling, and yard waste collection. The surveys have flexible reporting periods, so users can submit surveys monthly, quarterly, annually, or as needed.

Residential sector contacts are e-mailed a request to submit their calendar year recycling, solid waste, yard waste, and contract information each year beginning in February or March. The request explains why SWACO is collecting information and how the information will be used. The request includes a link to the reporting system, the reporter's user name and password, and an informational graphic showing how to complete the surveys in three simple steps. Approximately two to three follow up requests are sent via e-mail to residential sector contacts every two to three weeks. Follow up phone calls are placed to communities if data has not been submitted after receiving the final follow-up request via e-mail. During the follow up phone calls, SWACO identifies whether the contact person has changed, whether the community is dealing with any challenges associated with completing the surveys, and if SWACO can provide assistance so the community can complete the surveys.

Copies of community surveying instruments are located in Appendix V.

- c. Haulers, processors, and other facilities are surveyed to identify residential sector recycling that occurred outside of curbside or community recycling programs. These businesses surveyed electronically through Re-TRAC Connect are e-mailed the initial request to submit their calendar year recycling data. Approximately two to three follow up requests are sent via e-mail to contacts every two to three weeks. Follow-up phone calls are placed to entities if data has not been submitted after receiving the final follow-up request via e-mail. The quantity of follow-up phone calls made to each survey recipient varies on a case-by-case basis. Non-responders are prioritized. Priority has been placed on obtaining responses from entities that have not provided data within the last two surveys. If no new data has

been obtained, recycling volume will not be reflected in the Annual District Report (ADR). Obtaining responses from survey recipients that are assumed to be managing significant volumes of materials are also main priorities. At least one follow-up phone call is made to non-respondents. High-priority non-respondents are contacted more frequently, averaging five to ten attempts.

Businesses that have not provided SWACO with an e-mail contact because they have not responded to a previous survey are mailed a cover letter, survey, and postage-paid return envelope. Survey recipients are also given the option to submit their completed surveys via e-mail or fax. SWACO follows up with survey recipients that are solicited through the mail. Similar to the strategy used to follow up with Re-TRAC Connect survey recipients, the list of non-respondents is prioritized. Depending on the volume of entities on the list which changes annually and availability of staffing resources, approximately one to five calls are placed. Following up with non-respondents that were mailed a survey is more challenging than following up with electronically surveyed recipients because a specific contact person is not known.

A variety of resources are used to compile the hauler, processors, and other facilities survey recipient list, which is updated annually and on an ongoing basis to reflect when new companies open, close, relocate, or merge. SWACO's existing contact list that has been fine-tuned and regularly updated over the course of many years serves as the foundation of the list. It is supplemented using listings selected based on location and SIC/NAICS codes from the ReferenceUSA database. ReferenceUSA is a leading provider in business and consumer research. The database listings are typically quality checked and verified by phone approximately every six months by ReferenceUSA. SWACO's public and private partners that provide recycling opportunities are also surveyed. Survey recipients are identified through first-hand observation. For example, when SWACO or SWACO's consultants observe new residential recycling opportunities in the community, such as a new plastic bag recycling program at Macy's at the Tuttle Crossing Mall, the entity providing the recycling opportunity is added to the survey list. Survey recipients are also identified through local media (such as Columbus Business First's April 21, 2015 article "Top of the List: Central Ohio's biggest recycling firms"), participant lists for the City of Columbus' *GreenSpot* program and other available resources.

Copies of instruments used to survey haulers, processors, and other facilities are located in Appendix V.

- d. SWACO uses the following OHIO EPA annually published data: Material Recovery Facility and Commercial Recycling Data Report, Compost Facility Report Data Report, and Scrap Tire Data Report. This data is obtained from OHIO EPA's website:  
<http://www.epa.ohio.gov/dmwm/Home/SWMgmtPlanning2.aspx>

## **2. Residential Sector Data Gaps**

Although extensive effort is invested in contacting and following up with communities, haulers, processors, and recyclers, gaps in recycling data remain an issue. The most common cause for the gaps in data is lack of response to SWACO's multiple surveying attempts.

SWACO has noticed gaps in data collected from compost processors. The compost processors do not report the generator source of yard waste. This is a data piece that if provided would help track performance of programs but is not required under the contracts

Gaps in data exist from programs that are managed by out-of-state organizations, such as Better World Books, TerraCycle, and other mail-back programs. Often, contact information for these organizations is difficult to obtain, or connects to a general customer service call center where inquiries are answered by a third-party telecommunications company. A strategy to fill gaps in data from companies in this category may include committing more resources to reaching out to these companies. The strategy should be employed as early as possible before the Annual District Report deadline. The process to connect with the appropriate party may typically involve navigating through the corporate structure or out-of-state organization where the caller is usually transferred to multiple departments and voicemail systems. Persistence and using multiple methods of contact (email, fax, phone, and postal mail) will be necessary to make this strategy successful.

As a result of SWACO's focus on haulers, processors, and recyclers versus commercial and industrial generators, some recycling activities in these sectors have not been captured in the past. In 2016, SWACO identified that recycling data from automotive service stations that accept used oil and antifreeze from residents have not been included in previous ADRs. SWACO's consultant compiled a list of automotive service stations in Franklin County and surveyed individual locations as well as corporate offices for chains of service centers via telephone. SWACO was able to capture a significant quantity of used oil and used antifreeze that was generated by residents and recycled.

### 3. Commercial Sector

SWACO gathers data from three sources using a variety of methods to capture data from the commercial sector as described below:

- a. SWACO uses the following OHIO EPA annually published data: Material Recovery Facility and Commercial Recycling Data Report, Compost Facility Report Data Report, and Scrap Tire Data Report. This data is obtained from OHIO EPA's website:

<http://www.epa.ohio.gov/dmwm/Home/SWMgmtPlanning2.aspx>

- b. Brokers, processors and haulers that are surveyed electronically through Re-TRAC Connect to identify commercial sector recycling. Contacts are e-mailed the initial request to submit their calendar year recycling data. Approximately two to three follow up requests are sent via e-mail to contacts every two to three weeks. Follow-up phone calls are placed to entities if data has not been submitted after receiving the final follow-up request via e-mail. The quantity of follow-up phone calls made to each survey recipient varies on a case-by-case basis. Non-responders are prioritized. Priority has been placed on obtaining responses from entities that have not provided data within the last two surveys. If no new data has been obtained, recycling volume will not be reflected in the ADR which creates inaccuracies in data. Obtaining responses from survey recipients that are assumed to be managing significant volumes of materials are also main priorities. At least one follow-up phone call is made to non-respondents. High-priority non-respondents are contacted more frequently, averaging five to ten attempts.

Businesses that have not provided SWACO with an e-mail contact because they have not responded to a previous survey are mailed a cover letter, survey, and postage-paid return envelope. Survey recipients are also given the option to submit their completed surveys via e-mail or fax. SWACO follows up with survey recipients that are solicited through the mail. Similar to the strategy used to follow up with Re-TRAC Connect survey recipients, the list of non-respondents is prioritized. Depending on the volume of entities on the list which changes annually and availability of staffing resources, approximately one to five calls are placed. Following up with non-respondents that were mailed a survey is more challenging than following up with electronically surveyed recipients because a specific contact person is not known.

- c. SWACO also supports the Ohio Recycles Survey, a collaborative statewide recycling survey effort promoted by Ohio's solid waste management districts, the Ohio Council of Retail Merchants, the Ohio Chamber of

Commerce, the Ohio Manufacturers' Association, and OHIO EPA. Businesses also have the opportunity to complete the Ohio Recycles Survey found on OHIO EPA's website:

<http://epa.ohio.gov/dmwm/Home/OhioRecyclesSurvey.aspx>

Response rates vary by survey method. The first year for the Ohio Recycles Survey initiative was 2015. No responses were received from entities that obtained the survey from the Ohio Recycles Survey website or from any of the supporting organizations. The first year SWACO mailed surveys since implementing Re-TRAC Connect was also 2015. Out of 45 surveys mailed, two were undeliverable and three responses were received. Mailed surveys had a response rate of approximately 7%. In 2014, 14 out of 46 entities responded to the electronic survey on Re-TRAC Connect. Electronic surveying had a response rate of approximately 30%. The previous year, 24 out of 51 businesses responded to the electronic survey, which was a 47% response rate.

Issues encountered when surveying include:

- Participation rates.
- Varying but sometimes significant amount of time required to solicit survey responses.
- Staffing changes at surveyed establishments; losing a contact person.
- Lack of knowledge from survey respondents when follow-up questions are made; for example, businesses that accept paper for shredding may not know or share where shredded materials are managed, so if SWACO has data from a paper mill, it cannot use data from the shredding company because of the risk of double counting. This may lead to understating recycling rates.
- Errors in reported values; responses from previous years are compared to current reported values (when possible) to identify significant increases or decreases in tonnage or the materials reported.

#### **4. Commercial Sector Data Gaps**

Some data gaps identified in the Residential Sector also apply to the Commercial Sector.

SWACO diligently works to improve data collection efforts each year by thoughtfully compiling a list of all known recycling activities. SWACO has focused on surveying brokers, processors, businesses that provide the public with recycling opportunities, material recovery facilities (MRFs), haulers, and other similar entities rather than

the actual generators of recyclables. This strategy was selected because of SWACO's demographics. Franklin County is urban and includes the largest city in Ohio (Columbus). A significantly large volume of surveys would be needed to survey generators, which would detract from the available resources used to communicate and follow up with brokers and processors. Additionally, issues with double counting data arise when data from brokers, processors, and haulers are blended with data from generators. Generator data also tends to include reported values with a higher degree of errors and estimated quantities. By focusing on brokers, processors, haulers, and other recyclers, SWACO has been able to employ detailed quality control measures and invest time into obtaining a more complete dataset.

Although extensive effort is invested in contacting and following up with haulers, processors, and recyclers, gaps in recycling data remain an issue. The most common cause for the data gaps is lack of response from businesses to SWACO's multiple surveying attempts. Most businesses do not give a reason for declining to participate in the survey. A small portion of businesses have expressed concerns that by completing the survey competing entities will obtain sensitive information about their operations. Despite attempts to fully disclose that survey responses are summarized and individual companies' responses will not be released. Some companies explain that tonnage information is either not tracked, or is tracked in a way that is not usable to SWACO. For example, some entities track the totals tons recycled but are not able to break down tonnage by which county the materials originated.

A plan to close the gaps in recycling data can be developed. To address known recyclers of materials generated within SWACO's jurisdiction that do not respond to survey requests via e-mail, mail, or phone calls, a site visit may be necessary to develop a relationship between SWACO and the recycler. During site visits, staff can introduce recyclers to the goals and purpose of SWACO. SWACO can provide the recycler with information about programs and opportunities that may benefit their establishment. SWACO can use the visit to identify a contact person at the establishment, explain the purpose of SWACO's annual survey, and the importance of their participation data reporting. SWACO may also be able to develop incentives for participating in the annual survey, such as a free listing in the Franklin County recycling guide or on SWACO's website. Site visits can be used as a strategy to address concerns that recyclers may have about participating in the survey; this strategy can also be used to discuss opportunities for data collection improvements with companies that track tonnage in a manner that is currently not usable to SWACO.

Discrepancies between Ohio EPA's published data and data reported from other SWACO survey methods has been identified on occasion. The Ohio EPA published data is cross-referenced with data reported through surveys and by SWACO's

program contractors when possible. When issues are identified, they are addressed with Ohio EPA and resolved.

Examples of issues with Ohio EPA data that has been identified, generally, not specific to SWACO include:

- Haulers have provided detailed records showing the date, tonnage, type of waste, tipping fees paid, facility where organic materials were collected, and the registered composting facility where materials were delivered. In Ohio EPA's Compost report, no tonnage or a lower quantity of tonnage was reported for the SWMD in question.
- Compost facilities have submitted copies of reports that were submitted to Ohio EPA showing tons. In the Ohio EPA Compost report, only one-third of the tonnage was reported because it was entered as cubic yards.
- Compost facilities have responded to District surveys and quantities reported by the same facilities differ from values in Ohio EPA's Compost report. Issues are typically caused by facilities including wood waste data on SWMD surveys, which is not required on facility reports to Ohio EPA, or the compost facilities use a different volume to weight ratio than Ohio EPA.
- Facilities missing from registered facility lists and data reports (i.e., Noble Correctional Institute in 2015)

Other issues associated with using Ohio EPA data are caused by a limited amount of information available about the data. While the data provided by Ohio EPA is valuable to SWACO and Ohio EPA's efforts to obtain and compile the data are appreciated, sometimes the tonnage information is not enough to provide SWACO with a great understanding of the material flow throughout Franklin County. For example, food waste hauler data is reported as one value. Neither the haulers nor the destination of the materials are reported. An anaerobic digester is located within SWACO's jurisdiction; the digester, which accepts food waste, is not required to submit tonnage information for Ohio EPA's Compost report. SWACO must annually contact OHIO EPA to identify which haulers are included in the Compost report, then find out the food waste tonnage delivered to the digester, broken down by hauler, in order to use tonnage managed at the digester facility without double-counting.

SWACO also has concerns about double counting when using Ohio EPA's data for commercial establishments. SWACO obtains data from brokers, processors, and haulers; some of which are known to have national contracts with the commercial businesses included in Ohio EPA's Material Recovery Facility and Commercial Recycling Data Report. SWACO takes precautions to avoid double counting; however, it would be most advantageous to SWACO if more information about the tonnage reported for commercial businesses was available, such as the recycling



facility where materials are managed or the full-service recycler who collected and processed materials collected.

SWACO makes an effort to understand how materials are obtained and managed by entities that submit recycling information. While there are exceptions, the following figure outlines the flow of recyclable materials:



By focusing on the last three stages of the material flow diagram for surveying, SWACO tries to identify if there are any materials that might be reported by more than one entity. For example, SWACO investigates whether metals reported by Goodwill are sent to a scrap yard that also reports metals to SWACO. Furthermore, SWACO follows up with businesses that report to inquire whether they have purchased or sold materials to another reporting entity. SWACO currently does not distribute a commercial or industrial survey.

As a dynamic organization, SWACO regularly evaluates whether the data received from surveying efforts is adequate for SWACO's planning purposes. As SWACO's needs change, it may be beneficial to expand or modify the current surveying strategy.

## **5. Industrial Sector**

SWACO employs the same sources and methods used for commercial sector surveying to survey the industrial sector.

## **6. Summary Findings**

- SWACO focuses efforts to survey communities, haulers, processors and recyclers. These efforts are beneficial to avoid double counting and save time and staff resources. Lack of surveying commercial and industrial generators results in gaps of unreported data.
- SWACO employs an extensive survey effort using email solicitation and follow-up phone calls. At times contact information changes from surveyed entity staffing changes and requires additional time to find current contact.
- Low survey responses from surveyed entities.
- Re-TRAC Connect is the online data reporting software tool SWACO uses for surveyed entities to voluntarily report recycling data.
- Non-responding entities results in gaps of unreported data.

## **M. Recyclable Material Processing Capacity Analysis**

This section outlines the current evaluation for processing facilities within the District to meet the need for implementing initiatives to recover more material through existing or new services.

### **1. Processing Capacity**

Both residential collection and drop-off materials are processed at the Rumpke Fields Avenue Facility which is located in central Franklin County, just north of City of Columbus city center.

Rumpke Waste and Recycling is headquartered in Ohio, and the Rumpke Fields Avenue Facility is located within a 15-mile radius of the District. In addition to the local facility, Rumpke also processes materials at a larger facility in Cincinnati. Rumpke's Columbus facility has an annual capacity of 98,000 tons, and materials brought to this facility are collected from residential and commercial sites. Rumpke processes a large range of materials including glass bottles and jars, aluminum and steel cans, plastic bottles and jugs, mixed paper, and cartons. A large majority of the materials processed at the Rumpke facility are collected from SWACO's drop-off sites, approximately 9,100 tons in 2015.

In addition to Rumpke's services, there are many other local recycling facilities that focus on various commodity materials. Waste Management also processes fibers it collects through its commercial recycling accounts. Local Waste Services is another hauler that has recently begun to process cardboard at its transfer facility. Additional processors such as Carastar, WestRock, and Royal Paper Stock, are also operating facilities within the District which process a large amount of commercial generated materials.

Quantifying the recycling capacity of the District is hard to determine but based on the conversation with these facilities it appears that there is ample capacity for recycling and diversion in the District. That being said SWACO is always looking to encourage sustainable expansion of recycling infrastructure within Central Ohio. More research is being planned for upcoming years to better understand the capacity, network, and opportunity for collaboration with the recycling facilities in and round the district. These types of conversations and relationships have help to improve data collection and enhanced management of the Central Ohio waste stream.

### **2. Summary Findings**

- Processing capacity of standard recyclables is sufficiently provided by the private sector.

- Rumpke has a recyclable processing facility in Columbus that is capable of processing 98,000 tons annually and provide the majority processing needs of comingled recyclable materials.
- There are numerous other recycling facilities operating with the District. SWACO is just beginning to reach out to these facilities to understand their role, needs, and opportunities for collaboration.



**APPENDIX I**

**CONCLUSIONS, PRIORITIES, AND PROGRAM DESCRIPTIONS**



## APPENDIX I CONCLUSIONS, PRIORITIES, AND PROGRAM DESCRIPTIONS

### A. Conclusions, Actions, Priorities

Making decisions about SWACO's programs offered during the planning period required valuable input derived from extensive Board engagement, specifically the planning advisory sub-committee of the Board. The sub-committee used the program evaluations detailed in Appendix H to draw conclusions. These conclusions represent what was learned about SWACO's structure, abilities, strengths and weaknesses, operations, existing programs, outstanding needs, and available resources. From these conclusions, a list of action items was developed that were further refined into priorities to be addressed during the planning period.

#### 1. *Conclusions*

During the reference year (2014), Central Ohio has diverted 33%% of the R/C waste stream. While the diversion rate is on par with national averages, these sectors have not achieved their full potential. It is estimated that 41% of the R/C waste landfilled is residential and 59% is commercial. Based on the waste stream composition, the bulk of materials landfilled are highly amenable to recycling, thus, there are opportunities in both sectors. Such opportunities will require enhancing existing programs and developing new programs to achieve maximum diversion.

#### **Residential Recycling Infrastructure: Curbside Recycling Services**

Ninety-six percent of single-family households have access to a curbside recycling program. This level of participation has created a solid foundation for further enhancing curbside recycling programs. Currently, only 7 of the 33 political subdivisions with curbside recycling have a cart collection system, or bin size larger than 18 gallons. Assisting and encouraging communities to transition to larger recycling cart collection systems is a best practice that has proven to help increase recycling, and presents a significant opportunity for SWACO to advance diversion within the District. Additionally, all but 8 political subdivisions have curbside recycling. Facilitating curbside collection to the remaining subdivisions is another opportunity to increase diversion. SWACO's contract assistance, through its Community Solid Waste and Recycling Consortium Program, has helped to catalyze many of the top performing curbside programs in the District, but the program can be strengthened through additional participation. Educating and advocating for communities to adopt best practices, such as rolling carts and volume-based disposal, within the consortium will be encouraged.

### **Residential Recycling Infrastructure: Recycling Drop-off**

The Recycling Drop-off Program is one of SWACO's largest and oldest programs. It also presents consistent challenges with identifying and quantifying data, usage, contamination and performance. Program costs continue to increase while recovered tonnages decrease. Although the program has provided a valuable service in past years, its performance has decreased due to the improved access and use of curbside recycling services throughout the District. Data analysis of this program shows that evaluating and right-sizing the program is needed in order for the service to continue in a financially viable way.

### **Multi-Family Diversion Assistance**

Throughout the District, multi-family units are often differentiated from single-family curbside programs and are lacking convenient recycling opportunities. Currently, little data is available on the existing practices, barriers, and opportunities for multi-family units within the District. Exploring ways to expand recycling at multi-family units presents additional access opportunities for residents of the District and can result in a greater amount of materials diverted.

### **Commercial/Institutional Sector Technical and Diversion Assistance**

The commercial and institutional sector contributes to the majority of the recycling activities taking place in the District but also offers some of the greatest potential for continued improvement. This sector is responsible for generating approximately 59% of the landfilled municipal solid waste in the District. Fibers, which include paper and cardboard, represent 29% of materials being landfilled which are also primarily generated from this sector and are highly recyclable. Although implementing waste reduction and recycling efforts in this sector poses significant challenges, in the past only minimal programming has been aimed at addressing the needs of this sector. Establishing new programs that help to alleviate current barriers may have the greatest impact on increasing overall diversion.

### **Industrial Sector Technical Assistance**

Most manufacturing industries in the District have self-initiated waste reduction and recycling programs to achieve financial savings or to meet environmental policies or regulations. The minimal data available estimates the diversion rate around 80% for the industrial sector during 2014. In the past, a small number of programs have been offered to assist this sector and correspondingly, nominal data and information has been gathered on the existing needs and opportunities for improvement. While this sector appears to have implemented effective

diversion activities, further analysis and program development should be explored in future years.

### **Special Waste Streams**

Special waste streams include “hard-to-recycle” materials and restricted or regulated waste such as Household Hazardous Waste (HHW), organic materials, electronics, durable goods and other items. These materials typically require special collection services or locations, more effort on behalf of the consumer to participate, and generally have higher programmatic costs but are vital to the success of properly managing the waste stream. The special waste diversion programs currently in place include:

#### **a. Yard Waste**

SWACO’s Yard Waste Management Program has been in place for over two decades and has resulted in successfully diverting large tonnages of yard waste. The most recent characterization of landfilled materials showed that very little yard waste, only 5.9%, is landfilled. Continued education about the program and how to reduce yard waste contamination will help to ensure the programs continued success.

#### **b. Household Hazardous Waste (HHW)**

The HHW program is one of the most requested services by residents and communities. This program is also the highest costs per ton out of the programs offered by SWACO. Data shows the amount of material being collected has leveled off while the cost continue to increase. Further evaluation of this program will be needed in order to address the community’s interests, increase diversion impacts and convenience, and to financially sustain the program. Currently, a permanent facility is open for limited hours on weekdays, and four mobile collection events are offered annually. Alternative management approaches such as consumer awareness regarding prevention and reduction of HHW materials, and promotion of existing ‘take-back’ retail options will be explored.

#### **c. Electronic Waste (E-Waste)**

E-Waste is one of the fastest growing waste sectors as technology continues to advance and devices rapidly become obsolete. Many E-waste recycling businesses and services are available throughout the District and a variety of retailers offer take-back programs. SWACO has recently rolled out an E-waste Collection Program which is now available to municipalities, government agencies and institutions throughout the

District. Municipalities can offer collection options to their residents through this program.

**d. Food Waste**

Food waste is one of the largest segments of the residential and commercial waste streams. It is estimated that approximately 12.8% of landfilled material is food waste. Limited outlets for processing and handling food waste currently exist within the District, although services to manage this material stream are growing. Large food waste generators contract for services to divert food waste. Small start-up businesses offer specialized services, and non-profit organizations are rescuing and delivering edible salvageable food to those in need. SWACO believes that more can be done to assess and develop solutions for managing and reducing food waste in the District and this will be addressed in future years.

**e. Pharmaceuticals**

SWACO also plays a vital role in helping identify and coordinate special diversion needs that arise within the District. One such example is the promotion of the National Prescription Drug Take-Back Day, where SWACO works with community partners to provide proper disposal of pharmaceutical drugs. Currently, there are nine permanent locations to safely dispose of prescription drugs within the District.

**Special Program Needs**

SWACO's Environmental Crimes Task Force program supports a collaboration of the Franklin County Sheriff's Office, Office of the Franklin County Prosecuting Attorney, City of Columbus, and Franklin County Public Health. The mission of the Task Force is to address illegal dumping, littering, and related environmental crimes throughout the District. The program has been in place for over two decades but has lacked detailed performance measurements and the long-term funding model necessary to sustain the program.

**Diversion Analysis**

Information and data collection is central to SWACO's success for understanding and managing the waste stream. SWACO has been making efforts to improve its data collection efforts but additional work is required to build a comprehensive data collection system that can be managed as a resource. Improving existing data collection methods and implementing new programs to capture commercial and



industrial data, along with regular waste composition studies, will help keep SWACO programs and planning on track in the future

### **Financial Analysis**

All generation fees received by SWACO are dedicated to supporting the programs and services provided for the District. Should additional monies be necessary to fund such programming, grant monies, recycling revenues, reimbursements, and other miscellaneous contributions have been used to supplement the programming budget. Prior to 2011, SWACO was extracting from the carryover balance of the operating budget to support any deficits in programming spending. Over the past five years, expenses have declined, largely as a result of the discontinuation of outdated programs and the reevaluation of program expenses. Approximately one-third of SWACO's programs budget has historically been spent on the yard waste management program. The next largest expenses are administration and the recycling drop-off program. SWACO is in a position to leverage an internal funding program to offer grants and encourage a variety of activities such as: testing pilot programs, start-up contributions, program expansion, etc.

### **Economic Incentive**

Economic incentives are a proven method to increase participation in waste reduction and diversion activities. However, economic incentives must be well designed in order to create and maintain sustainable programs and not solely subsidize dependencies. Incorporating well thought-out economic incentives into SWACO's programs could play a major role to increase diversion and establish new programs, and could be used to address new areas of opportunity related to commercial and institutional waste streams. The promotion of incentives for the residential sector, such as volume-based disposal, will also be prioritized

### **Recyclable Material Processing**

The processing capacity for traditional recyclables and yard waste in the District appears to be sufficient. Private sector development and competition for recycling services has helped to create a robust recycling industry in Central Ohio, but appropriate expansion of processing infrastructure and services should be encouraged. Research and relationship building with the recycling industry will help identify processing needs and opportunities and potentially enhance diversion capacity.

## Data Collection

Information and data collection is central to SWACO's success for understanding and managing the waste stream. SWACO has been making efforts to improve its data collection efforts but additional work is required to build a comprehensive data collection system that can be managed as a resource. Improving existing data collection methods and considering new programs to capture commercial and industrial data, along with regular waste composition studies, could help keep SWACO programs and planning on track in the future.

## 2. Actions

Based on the evaluation of SWACO's current infrastructure and program capabilities, the Board made a list of various program possibilities, including refining current programs, implementing new services, or other options to address the goal of stimulating additional diversion opportunities. After evaluating this list of options, the Board identified the top priorities for implementation during this planning period, as described below:

- Assist non-subscription curbside programs to implement best practices.
- Encourage District-wide curbside recycling education campaign.
- Continue contract assistance and enhance consortiums.
- Perform a comprehensive study of recycling drop-off program.
- Develop a robust education and outreach campaign for SWACO programs.
- Perform a comprehensive study to understand the landscape of multi-family housing and recycling services.
- Expand recycling to multi-family units.
- Develop a recognition program for the commercial sector.
- Identify commercial sector recycling activities.
- Encourage commercial recycling activities with outreach and technical assistance.
- Actively assist commercial sector with recycling contracts.
- Foster relationships with planning and zoning departments to advocate for policies to facilitate recycling.
- Become a visible resource for the industrial sector.
- Address the needs of the industrial sector.
- Provide educational resources and technical assistance to industrial sector.
- Develop incentive programs to encourage recycling for both residential and commercial sectors.
- Explore and research best and sustainable practices for managing HHW in the District.
- Advocate for product stewardship.
- Continue to negotiate electronics management contracts.

- Expand electronics management to commercial sector.
- Evaluate community scrap tire collection programs to develop a robust and sufficient long-term program.
- Promote yard waste diversion, negotiate contracts, and explore options to improve data collection and reduce contract costs.
- Develop a food waste management program focused on reduction and recovery.
- Evaluate composting/other technologies for managing food waste.
- Conduct a market study to understand economics of reuse, remanufacturing and recycling within the District.
- Conduct multi-year, multi-season waste characterization studies.
- Expand data collection efforts to capture data from commercial and industrial sectors.
- Collaborate to address common areas of interest regarding solid waste management issues in the District.
- Evaluate the expenses and management of the Environmental Crimes Task Force.
- Assist communities to define recycling goals, collect data, create flexible programs, communicate with the public, improve programs, manage litter, and implement best practices.
- Dedicate website space for waste minimization.
- Dedicate website space for reuse and develop a reuse network resource guide.

### **3. *Priorities***

After evaluating this list of options, the Board identified the top priorities for implementation during this planning period, as described below:

- Perform an evaluation of the recycling drop-off program and make modifications to improve efficiency, cost effectiveness, performance, and ensure best practices and benchmarking are being addressed.
- Perform a study of HHW collection programs to identify best and most sustainable practices for managing HHW in the District.
- Promote yard waste diversion, and explore options to improve data collection and reduce contract costs.
- Evaluate the expenses and management of the Environmental Crimes Task Force.
- Identify commercial sector recycling activities, expand data collection efforts, and establish commercial waste reduction and diversion programs based on best practices and benchmarking future activities.
- Identify the landscape of multi-family housing recycling services and expand recycling options to multi-family units evaluating and implementing best

practices and engaging in continuous improvement based on benchmarking progress.

- Assist communities defining their waste reduction and diversion goals, and work to collect additional data, create flexible programs, enhance communications with the stakeholders, improve effectiveness of programs, manage litter, and implement best practices.
- Develop a robust education and outreach campaign for SWACO programs.
- Explore options for developing a food waste management program focused on reduction, reuse and recovery.
- Update website to expand waste reduction, reuse and recycling information.

Priorities are items SWACO commits to address during the planning period. In developing priorities, SWACO’s mission, “to improve the community’s solid waste stream through effective reduction, reuse, recycling, and disposal” provided the framework. The Board set forth a vision for sustainability and the need to establish higher diversion goals. Through this process, what ensued is a priority to develop diverse programs directed towards leadership, management, facilitation, and education/outreach with the continued support to encourage innovation.

In doing so, the Board identified three main priorities as the focus of SWACO’s programming:

- Continue to evaluate and modify existing programs to improve efficiency, use of best practices, and cost optimization.
- Conduct research and establish new initiatives to address current community waste reduction and diversion needs
- Develop a robust education and outreach campaign to represent and promote all programs.

While these priorities are broad in the sense of not identifying specific programs as priorities, SWACO is committed to the programs described in Section B of this Appendix. The programs are all priorities.

**B. Programs**

**Residential Recycling Infrastructure: Curbside Recycling Services**

ID	Name	Start Date	End Date	Goal(s)
NSC 1 - 33	Non-Subscription Curbside Recycling	Existing	Ongoing	Goals 1 and 2

All non-subscription curbside recycling services available in the reference year are expected to continue.

Non-subscription service means all residents have access to curbside recycling; either political subdivisions or individual households arrange for non-subscription curbside recycling programs in an open market system. In Franklin County, the focus of curbside recycling is on single-family households. In 2014, 96% of single-family households had access to curbside recycling.

Materials are collected in a single stream (i.e., fibers, plastics, metals and glass containers commingled together), and the market guides the type of materials collected. In 2014, standard recyclables collected at the curb were: paper, plastic bottleneck containers (#1-#7), metal containers, and glass containers. Other recyclables collected at the curb include: phone books, aseptic containers and cardboard. Collection methods vary for the communities from bin to cart using either manual, semi-automated, or automated methods. Of the 33 townships and municipal corporations (includes City of Columbus) implementing non-subscription curbside recycling, all communities were serviced by weekly collection except for two, City of Columbus and Mifflin Township. These two political entities offer bi-weekly collection. All political entities utilize private hauler collection services except for one. Only the City of Grandview Heights publicly operates curbside collection services for their community.

SWACO provides technical assistance to district communities helping to develop non-subscription curbside programs. SWACO also monitors and evaluates curbside programs, including collections, operations, promotions, contracts, program successes and challenges, and Re-TRAC Connect community data collection. One element of the technical assistance services includes the coordination of community consortiums. More information about the community consortium program strategy is described later in this Appendix.

The largest municipality, the City of Columbus, rolled out a non-subscription program in five phases and was fully operational in 2014. The City contracts with a private hauler for bi-weekly collection to provide service to single family homes, buildings of four attached units or less, and condominium or apartment complexes using 90 or 300-gallon trash containers that are serviced by the City. Residents meeting these requirements are provided 64-gallon carts. A total of 201,326 households were serviced in 2014. More information regarding this program can be found on the City website:

*<https://www.columbus.gov/Templates/Detail.aspx?id=68864>*

Total 2014 tonnage recycled by curbside recycling programs was 64,937 tons.

There were no program costs, as SWACO does not expend program operational costs for the provision of curbside recycling programs.

ID	Name	Start Date	End Date	Goal(s)
FTU 1 - 87	Full-Time Drop-offs	2016	Ongoing	Goals 1 and 2

## Operations

SWACO provides and services full-time recycling drop-off containers. Full-time, drop-off containers are available to the public 24 hours, 7 days a week. All containers are the property of SWACO and are serviced by SWACO personnel with SWACO equipment. Per contractual agreement, all recyclables collected are delivered to the Rumpke Material Recovery Facility located on Fields Avenue. Each recycling location is provided with 8-cubic yard containers for commingled recyclables. The number of containers and frequency of service is based on the locations participation.

Residents must deliver their recyclables to the drop-off containers to be recycled. Materials are collected in a single stream, and the market guides the type of materials collected. In 2014, standard recyclables collected at the drop-off containers were: paper, plastic bottleneck containers (#1-#7), metal containers and glass containers. Other recyclables collected in the containers include: phone books, aseptic containers and cardboard.

Locations have two targeted users: the general public and Columbus City Schools. In 2014, drop-off containers were provided at 82 urban community locations, 6 rural community locations, and 114 Columbus City school locations. [Note: Initially 87 urban community locations were provided drop-off containers however during 2014, 5 were removed by private property owners request.] Container fullness, contamination and frequency of collection are monitored (by the driver) each time the location is serviced. In 2014, approximately 9,523 tons were collected through the drop-off program (includes urban, rural and school locations). The amount collected in 2015 decreased to 9,087 tons.

This is a very resource-intensive program to implement that includes capital, logistics, operations and maintenance and labor. Although the program is managed and operated by SWACO's Operations Department, it is funded and supported by the Innovation and Programs Department. Program costs in 2014 were \$858,635.96 and include capital and operational (labor and maintenance) expenses.

## Strengths and Weaknesses

Drop-off locations provide recycling opportunities that otherwise may not exist. Appendix H analysis has identified tonnages collected in this program demonstrate annual decreases since 2011. Less recovered tonnages equate to more cost per ton for drop-off operations. Maintenance and equipment costs also continue to rise as the existing infrastructure ages. New fees for processing the recycles will also be an added cost to the programs starting in 2016 and could be as high as \$135,000 per year. SWACO has also noticed a surge in the amount of trash and contamination being placed in some of the drop-off locations.

**Program Strategy Goals**

The Recycling Drop-off Program needs to be adjusted to address decreasing performance and increasing costs. SWACO will evaluate the program in order to determine the best approach to financially operate the program and improve its overall performance. The evaluation will focus on the program use by the general public and the use by Columbus City Schools (CCS).

The general public use evaluation will focus on site locations, performance, contamination and illegal dumping issues. The goal of the evaluation is to determine appropriate locations, number of containers needed at locations, educational needs and methods for addressing illegal dumping. Consolidation of publicly available sites is expected as a result of the evaluation. SWACO will work closely with communities, property owners and users of the program during the evaluation process.

SWACO is working closely with the CCS Administration to determine the most viable, long-term solution to sustaining recycling programs at the CCS facilities. SWACO will consider all possible options so that CCS gets the best services at the best available cost. This includes contract assistance, evaluating short-term financial support to transition the program, potentially donating existing containers and/or joining the existing School Consortium. The transition to a private hauler through one of these options is expected to take place July 2017. SWACO will continue to work with CCS to ensure that recycling is supported and implemented.

SWACO will work with consultants to assess the financial and operational viability of privately contracted services to operate the Drop-Off Program as compared to the currently publicly owned and operated service. The evaluation will be completed by 2018.

**Commercial/Institutional Source Reduction, Reuse and Recycling Programs**

Name	Start Date	End Date	Goal(s)
Commercial/Institutional Sector Technical and Diversion Assistance	March 2017	Ongoing	Goals 2, 3, 4, and 6

Commercial sector entities are defined as: commercial businesses, schools and Universities, government agencies, office buildings, amusement parks, event venues (stadiums, concert halls), hospitals and non-profit organizations. Forms of assistance offered by SWACO include consultation, contract assistance (includes consortiums), hosting business forums, a recognition program and economic incentives. The following programs will be new for SWACO. Program development will begin in the spring of 2017 with piloting and implementation taking place during the summer and fall of 2017.

- **Consultation** – These waste stream reviews help commercial entities determine the composition of their waste stream and gain a better understanding of their

existing solid waste system. In addition to self-assessment forms available on SWACO's website, SWACO staff will be available to conduct in-person waste assessments and consultation and refer businesses to available waste reduction, reuse and recycling services and resources.

- **Contract Assistance** – This includes direct assistance with commercial entities, including contract review and formation of consortiums. Commercial entities can require policies in their contracts to include reporting, incentive based programs, and embedded recycling rates. Consortiums participants agree to contract together to increase negotiating power to reduce costs when contracting for solid waste, recycling and yard waste collection services.
- **Business Forums** – These specialized events help improve commercial sector diversion by bringing together stakeholders who have the willingness and influence to make positive change. The structure will include meetings, webinars, conferences and facilitated discussions. SWACO will take the lead to organize the forums as well as conduct on-site data gathering and observations SWACO may work with outside assistance to conduct data gathering and observations.
- **Business Recognition** – Rewarding commercial businesses for diversion efforts and the achievements of waste-related environmental goals by providing certificates of excellence, press releases and acknowledgement on SWACO's website. SWACO will also explore opportunities to partner with existing award and recognition programs hosted by other organizations with similar missions.
- **Economic Incentives and Other** – Financial support to help the commercial sector recover materials. Ideally, assistance opportunities will aid in overcoming obstacles to reuse, recycle and compost. There are many possible incentive opportunities such as rebates, rate structures, hauler incentives, etc. Some identified funding assistance opportunities will depend on outcomes from technical assistance.

Assistance will be provided to all types of commercial entities but will be designed for target areas. All assistance strategies will collect quantitative measures of diversion. SWACO will record the number and type of assistance strategies provided and assess impacts for comparison and tracking measures through reporting from participating businesses.

### **Target Area 1 – Businesses**

Focus on targeting specific materials such as fibers, plastics and other materials. Qualitative and quantitative data collection will be developed to measure the impact of initiatives and programs.



**Target Area 2 – Schools**

In 2012, SWACO initiated the formation of a School Consortium for Solid Waste and Recycling. In July 2016, SWACO will reconvene meeting with interested school districts. The process will involve coordinated meetings between SWACO, school district representatives and outside legal assistance. SWACO will work with school Superintendents and staff to adopt waste minimization practices and improved recycling programs. SWACO will help establish protocols for tracking school waste generation and diversion data. Technical assistance will be provided to assist with purchasing recycled-content materials and waste minimization. Options for capturing hard-to-recycle materials will also be explored.

**Target Area 3 –Event Venues**

SWACO will work with stadiums, concert halls and other event venues to review and enhance waste reduction efforts. Partnerships with communities, private businesses and nonprofits will be explored. Planning assistance, container loan, awareness and education will be continued. The Event Waste Reduction Grant (described later in this section) can provide financial assistance, based on proposals that meet criteria, to public event organizers to establish best practices for reducing waste and increasing diversion, and to generate public awareness about regional waste reduction, reuse and recycling opportunities.

**Target Area 4 – Government Agencies and Offices**

SWACO will collaborate with government office buildings to establish building recycling programs and policies to facilitate environmental stewardship.

**Target Area 5 – Institutions**

SWACO will work with institutions to establish diversion policies and/or plans, and/or to help facilitate waste reduction, reuse, and recycling programs.

Name	Start Date	End Date	Goal(s)
Multi-family Diversion Assistance	May2017	Ongoing	Goal 2

Multi-family programs will be designed to best meet the needs of the users. This program will consist of an initial study followed by diversion assistance strategies.

Beginning in 2017, SWACO will assess the waste reduction and diversion needs of multi-family housing within Central Ohio. To identify needs and develop feasible assistance programs, SWACO will work with local partners including apartment associations, property managers, municipalities and consultants. An analysis of multi-family housing concentrations, barriers, infrastructure, collection options, and other relevant topics to the

program design will be considered. The study will focus on identifying service issues from haulers, property managers and residents as well as identifying best practice options available. The research may require the use of consultants and will be completed by 2018. As a result, SWACO will provide assistance programs to ensure multi-family units have opportunities to recycle.

As identified in Appendix H, multi-family units are often differentiated from single-family curbside programs and are lacking convenient recycling opportunities. The purpose of the research is to identify the barriers and help SWACO establish effective assistance programs. Possible assistance options might include start-up funds (e.g., start-up service agreements, capital infrastructure), hauler or landlord policy requirements, consortium programs and other technical assistance for implementing programs.

All multi-family strategies will collect quantitative measures of diversion. SWACO will record the number and type of assistance strategies that will be compiled in a database to compare impacts.

**Industrial Sector Reduction, Reuse and Recycling Programs**

Name	Start Date	End Date	Goal(s)
Industrial Sector Technical Assistance	April 2018	Ongoing	Goals 2, 3, and 4

SWACO envisions this program structuring similar to the Commercial/Institutional Sector Technical and Diversion Assistance program. However, until further analyses are conducted and the true needs identified, SWACO is refraining from formally structuring this program. The focus at this time is to conduct analyses of the manufacturing industry waste diversion needs in Central Ohio by working with industries and partners such as the Ohio Manufacturing Association and local economic development agencies. The analysis will help to collect baseline information and identify program assistance opportunities for implementation. Forms of assistance will be better defined as the needs are identified but may include consultations, contract assistance, hosting business forums, toolkits, a recognition program and educational and outreach activities (see Appendix L).

**Restricted/Difficult to Manage Waste Programs**

Name	Start Date	End Date	Goal(s)
HHW Management	Existing	Ongoing	Goals 5 and 2

SWACO provides management of HHW materials for district residents by contracting with a third-party business to operate collection drives and a permanent facility. The program will be modified to focus on three strategy areas.

**Strategy 1 – Product Stewardship and Retailer Take Back**

SWACO will take an active role in advocating extended producer responsibility and product stewardship systems. Materials that are hard-to-recycle, have high environmental risk, short lifespan of use and long lasting impacts will be targeted. Existing take-back program for these materials will be identified and promoted on SWACO's website. Stakeholder meetings between industry and government representatives will also be organized in an effort to work together to draft meaningful policy, education and enforcement. This will be a long-term ongoing strategy that will begin in year one of the planning period (2018).

**Strategy 2 – Collection**

The HHW collection contract, which expires during the planning period, requires the service provider to offer mobile collection events and a permanent collection site for HHW. Based on responses to the request for proposals this program is subject to modification but is expected to continue. Modification will also depend on outcomes from further program evaluation. SWACO is committed to providing HHW collection opportunities at both a permanent facility and mobile collection events during the planning period. The research performed and the proposals for services that are submitted will determine the best options for providing affordable and effective access for safely disposing of HHW materials generated by residents of Central Ohio.

Four mobile collection drive/events per year are currently offered. Collective pounds recycled from the 2014 mobile collection events were 124,079 (includes 2,779 pounds of lead-acid batteries) from 2,334 vehicles. Program costs include contract costs for mobilizing, managing materials at the collection events, promotion of the events, reimbursement to the host community, and removal for further processing.

The permanent facility is currently open limited hours three business days a week. Pounds recycled from the 2014 permanent facility were 297,803 (includes 8,980 pounds of lead-acid batteries) from 4,219 vehicles. Program costs include contract costs for building rental, managing materials and material processing. SWACO will also work with the contractor to assess user fees on additional materials not currently managed.

**Strategy 3 – Studies**

As discussed in Appendix H, existing programs could be modified to enhance and grow the opportunities while lowering costs by adding best practices. During this planning period, SWACO will explore and research best and sustainable practices for managing HHW. SWACO may conduct a study to help determine if the public would like to see opportunities such as curbside collection, "at your door" service, adjusted drop-off hours, additional user fees, advance disposal fees, outsourcing collection events to communities and/or expanded permanent facility services. Through research, SWACO may implement

new best and sustainable practices for managing HHW during the planning period. Possible program costs might include studies, pilot projects and/or infrastructure development.

Name	Start Date	End Date	Goal(s)
Electronics Management	Existing	Ongoing	Goals 5 and 2

SWACO provides a list of organizations and businesses offering electronics collection on the website. Community e-waste collection drives are advertised on the website and through social media.

In January 2016, SWACO implemented an electronics diversion program for schools, county governments and political entities. This consists of two contracts: a contract for collection and processing of e-waste generated by government entities and school districts and a contract for collection and processing of e-waste at mobile collection events hosted by political entities. These contracts are available for use by eligible entities via Ohio Revised Code 9.48. The number of schools, governments and political entities participating will be tracked as will the amount of e-waste collected. During the planning period, SWACO will be looking to expand electronics recycling programs and initiatives to other commercial sectors.

Name	Start Date	End Date	Goal(s)
Scrap Tire Management	Existing	Ongoing	Goals 5 and 2

During the planning period, SWACO will use three management strategies: retailer take-back, drop-off and community collection. SWACO will continue outreach to collaborative partners such as the Ohio EPA, regional SWMDs, facility operators and local processors to determine better tire management practices as well as evaluate options for enhancing or modifying existing programs to address scrap tire management issues in Central Ohio. SWACO reserves the right to provide funding for research or pilot projects for tire management during the planning period.

**Strategy 1 – Retailer take-back**

Tire retailers provide a valuable service by accepting tires for a fee. SWACO will update the website to direct users to identified tire outlets.

**Strategy 2 – Drop-off**

SWACO accepts tires at each of the transfer stations and the landfill in order to deter the illegal disposal of scrap tires across the District. There is a per tire fee for automobile tires and truck tires. SWACO also removes tires from incoming solid waste loads at each of its facilities. SWACO records data on tires collected at the landfill and transfer facilities and reported 79.26 tons of tires collected in 2014. Operational costs to provide and transport

a roll-off to a tire processor and handling the tires at the landfill and transfer facilities are not included under the generation fee program costs. SWACO will annually track the tires at the landfill and transfer stations.

**Strategy 3 – Community Collection**

SWACO offers tire collection assistance to communities by connecting communities to the Community Clean-up Fund Committee and often providing hauling of the tires to a tire recycling facility. The Community Clean-up Fund Committee authorizes funds to reimburse community tire collection drives. These funds are generated through restitution fines associated with cases that are prosecuted through the Environmental Crimes Task Force (see Environmental Crimes Task Force). Funding for this program is subject to available funding.

SWACO will continue to evaluate community collections and partnerships to develop a robust, sufficient and long-term management program for scrap tires.

Name	Start Date	End Date	Goal(s)
Yard Waste Management	Existing	Ongoing	Goals 5 and 2

Yard waste is managed with a decentralized integrated system of education, curbside collection, drop-off, mulching and composting. Processing of yard waste is the responsibility of private businesses registered as compost facilities. Technology methods for processing are at the discretion of these registered compost facilities.

To increase residential education on proper yard waste management, SWACO will develop an outreach and education strategy. Appendix L details the outreach and education plan.

SWACO contracts with compost processors to process in-county materials at no charge to the customer. The contract costs have a maximum dollar amount, once they go above that they still have to accept materials. Contract costs do not include transportation or hauling. In 2014, contract costs were \$1,485,000 and are secured through 2021. SWACO will explore options to improve data collection and reduce contract costs during the planning period.

Several yard waste drop-off outlets are available and convenient for residents. In addition, 21 political subdivisions offer some type of curbside yard waste collection services. These political entities or individual households arrange curbside collection in an open market system. The focus of curbside collection is on single-family households. Typical materials accepted are grass, leaves and brush.

In 2014, compost facilities reported receiving 232,814 tons of yard waste.

By year one of the planning period (2018), SWACO will begin exploring both partnerships to expand existing compost opportunities and future processing options and infrastructure.

Name	Start Date	End Date	Goal(s)
Food Waste Management	2018	Ongoing	Goals 5 and 2

During the planning period, SWACO will promote three management strategies: waste reduction, food recover and reuse as well as composting and other technologies. In 2014, food waste recorded as diverted from the landfill was 6,148 tons. Data was provided by commercial businesses, haulers and registered Class II compost facilities.

**Strategy 1 – Waste Reduction**

SWACO will promote educational and awareness to help minimize the amount of wasted food generated and disposed for both the residential and commercial sectors. SWACO will provide resources on its website and give presentations when requested. Appendix L details the outreach and education plan.

**Strategy 2 – Food Recovery and Reuse**

SWACO will assist the distribution of edible food by identifying and promoting local food recovery outlets such as the Mid-Ohio Food Bank, Community Plates and other related non-profit organizations.

**Strategy 3 – Composting and Other Technologies**

Best practices for managing food waste is an integrated system that will need to utilize small- and large-scale composting and other technologies. Currently, there are limited facilities and technologies available in Central Ohio for diverting and managing food waste. During the planning period, SWACO will promote dialogue and convene working partnerships to evaluate the needs, opportunities, and challenges for establishing necessary infrastructure and services for composting and diverting food waste. The goal of the engagement is to identify sustainable solutions that could be supported by public-private partnerships. Convening partnerships is scheduled to begin in 2018. Feasibility studies may be conducted as part of the research to determine viable technologies and infrastructure for managing food waste.

**Grants, Sponsorships, and Special Project Funding Programs**

Name	Start Date	End Date	Goal(s)
Grants, Sponsorship, and Special Project Funding	Existing	Ongoing	Goal 6

SWACO provides financial support for waste reduction, reuse, recycling, composting and educational purposes through grants programs. Funds will be provided to projects that align with SWACO’s mission and advance Central Ohio’s waste reduction and diversion efforts. All funds provided through these programs require reporting to track and measure impacts and outcomes, and require a cash match from applicants.

- **Community Waste Reduction Grant** – Grant funds are awarded through a competitive process and may be provided to public or private entities that meet the criteria of the grant program. Grant funds can be used for the purposes of waste reduction or diversion infrastructure projects, capital improvements and other activities described in the grant program. A committee that makes recommendations for awarding funds reviews grants applications. The types of grant programs offered may be adjusted to ensure that grant funds contribute to addressing the current needs within the District. \$150,000 is budgeted annually for Grant programs. Annual amounts may vary based on funds available.
  
- **Event Waste Reduction Grant** –Grant funds, awarded through a competitive process, support large-scale public events public event organizers that establish best practices for reducing waste, increasing recycling and composting, and generate public awareness about waste reduction activities. Applicants must meet the criteria of the program. \$25,000 is budgeted annually for the Program. Annual amounts may vary based on funds available.
  
- **Special Project Funding** – Financial support may be provided to special projects that align with SWACO’s mission. Projects may include, but not limited to, research, infrastructure improvements or pilot projects. Project proposals are evaluated on a case-by-case basis.

**Market Development Programs**

Name	Start Date	End Date	Goal(s)
Market Development and Recycling Industry Research	Existing	Ongoing	Goal 8

SWACO consults with businesses to enhance markets for recyclable materials and offers to serve as a pass-through agent for Ohio EPA’s Market Development Grants.

There are three stages to recycling: collecting and processing recyclables; manufacturing recycled-content products; and selling recycled-content products. During this planning period, SWACO intends to become more actively involved in developing these markets. Efforts will be made to reach out to recycling industry stakeholders in Central Ohio to develop positive relationships. Partnership opportunities will be leveraged to increase the capture and processing of materials. SWACO will help quantify the positive economic

impacts generated by the recycling industry, document the recycling industry currently active in the District, and develop efficient data collection to determine the amounts recycled in Central Ohio.

SWACO will conduct market studies to understand economics of reuse and recycling in the District and research how increased diversion (voluntary, incentive, bans, mandates, etc.) will drive new businesses. A market study will be conducted within the first five years of the planning period.

SWACO may also assist with funding that will foster businesses that manufacture and market recycled-content products and/or strengthen demand for those products. Areas of funding such as tax incentives or grants to implement programs, support businesses and pull in new businesses will be explored. Eligible projects may target remanufactured products and products with post-consumer, post-commercial and post-industrial recycled-content material.

**Other Programs**

Name	Start Date	End Date	Goal(s)
Community Contract Assistance	Existing	Ongoing	Goals 6 and 2

A Solid Waste and Recycling Consortium (“Consortium”) is a group of communities, schools or other entities that agree to bid together in order to increase negotiating power and to reduce costs when contracting for solid waste management, recycling, and yard waste collection services.

SWACO has invited all of the communities in the District to participate in meetings to inform about the consortium process and options. This process typically takes five or six meetings hosted by SWACO. SWACO contracts with a law firm to facilitate the technical assistance of the meetings and the bidding process (includes development of bid specs, bid review, and contract execution). The consortium contracts have usually bid separately for recycling processing and collection services and include any number of service options.

In 2014, twenty communities were participating in one of three community-based consortiums. The nature of the consortiums and contract periods allow communities flexibility to rejoin the consortium and/or add new communities. The first consortium, Consortium I, was organized in 2005. Consortium I bid contract periods were 2005-2009, 2010-2014. A second consortium, Consortium II, began in 2011 with a contract period for 2011-2015. Consortium III began in 2012 with a contract period for 2012-2016. Consortium I’s most recent contract period is 2015-2019. Consortium II’s most recent contract period is 2016-2020. The contract period for Consortium III is 2012-2016.



SWACO will continue to promote community consortiums and target the eight communities without curbside services.

In addition, SWACO will continue outreach and meetings with communities and haulers to improve contracts by looking at ways to include multi-family and commercial buildings, enforcement, volume-based rates and other incentives. Communities may also receive technical assistance for developing their contracts even if they are not participating in the consortium process.

Name	Start Date	End Date	Goal(s)
Community Technical and Diversion Assistance	2016	Ongoing	Goals 2 and 3

To build successful recycling programs in each community, SWACO will support community-based waste reduction, reuse and recycling programs. SWACO will assist communities to define diversion goals, collect waste generation and diversion data, create flexible programs, communicate with the public, improve programs, manage litter and implement best practices. SWACO’s resources will be utilized to engage and educate the community leaders as well as harness the power of community beautification committees and non-profit organizations. SWACO will continue to assist in coordinating and promoting public diversion activities events such as political sign recycling event; prescription drug collection events; roadside litter cleanups and recycling containers for public events.

See Appendix L for additional education and outreach efforts related to communities.

Name	Start Date	End Date	Goal(s)
Data Collection and Waste Composition	Existing	Ongoing	Goal 2

**Strategy 1 – Data Collection**

SWACO collects survey data via an online data tool, Re-TRAC Connect. Communities, brokers, and processors voluntarily enter recycling data into the database. SWACO devotes staff time to overseeing and participating in a comprehensive data collection effort as well as hiring a consultant. Collecting data is challenging due to a variety of factors and takes considerable time and effort to gather and analyze. Regardless, the primary objective of SWACO is to divert materials from landfills, therefore, an accurate measurement of diversion from landfills is needed.

Data collection efforts will be expanded to the commercial and industrial sectors for information capture data on tons generated, disposed. SWACO will review existing data collection process to improve efficiency, analysis of data, and reporting methods, as well as evaluating enhancement to the data collection software utilized. SWACO will maintain metrics on survey responses, annual tonnages recorded, new businesses participating and repeat businesses participating.

**Strategy 2 – Waste Characterization Study**

The primary purpose of the study is to examine the quantity and composition of waste in order to characterize the strengths and weaknesses of waste programs in the District. A waste sort identifies materials discarded that could be captured. From time-to-time, SWACO will conduct waste studies to determine participation, set-out rates, diversions and estimate remaining commodities in the waste stream. These studies will be performed based on need and opportunity which cannot be predicted at this time. Therefore, this Plan projects that further waste studies will be conducted, as necessary and feasible.

Name	Start Date	End Date	Goal(s)
Franklin County Board of Health Assistance	Existing	Ongoing	none

As provided by Ohio Revised Code §3734.57, SWACO may provide funding from the generation fee fund to the board of health within its District, here, the Franklin County Public Health Department, for the following purposes:

- Enforcement of [Chapter 3734] and rules, orders, and terms and conditions of permits, licenses, and variances adopted or issued under it, other than the hazardous waste provisions of this chapter and rules adopted and orders and terms and conditions of permits issued under those provisions;
- Paying the costs incurred by those boards of health for collecting and analyzing samples from public or private water wells on lands adjacent to those facilities;
- Enforcement of section 3734.03 of the Revised Code or to local law enforcement agencies having jurisdiction within the district for enforcing anti-littering laws and ordinances.

During this Plan, SWACO will evaluate the Board of Health’s role for funding. The Board of Health is required to submit yearly reports on the activities implemented each year with the funding provided by SWACO.

Name	Start Date	End Date	Goal(s)
Environmental Crimes Task Force	Existing	Ongoing	none

SWACO provides funding to the Environmental Crimes Task Force (ECTF) of Central Ohio to enforce environmental laws and prosecute violators. The ECTF consists of staff from Franklin County Public Health, Office of the Franklin County Prosecuting Attorney, Franklin County Sheriff’s Office and the City of Columbus Division of Refuse. These team partners administer the program and expense allocations. In 2014, there were 38 convictions, 400 community service hours ordered and \$79,129.74 ordered in restitution/fines.

During the planning period, the ECTF will utilize the following strategies to combat against blight, litter and open dumping:

**Strategy 1 – Dumping and Litter Hotline and Website Reporting**

SWACO funds the cost of a 24-hour reporting hotline (614-871-5322) and website ([www.itsacrime.org](http://www.itsacrime.org)) for the reporting of illegal dumping, littering, and other environmental crimes. All reported incidences will be investigated, resolved, and if possible, prosecuted by members of the ECTF.

**Strategy 2 – Education and Awareness**

The types of media outlets used to increase awareness are public service announcements, radio messages and billboard advertising. Messaging focus includes promotion of anti-litter efforts, promotion of illegal dumping convictions and promotion of litter reporting. As an example, in 2014, the website promoted illegal dumping reporting January through March and purchased six ads in the City of Columbus’ COGO bike stations.

**Strategy 3 – Data Analysis**

In this planning period, SWACO will work with the ECTF to set qualitative measurables for determining program value and objectives. Education goals will be set and monitored. SWACO will look for opportunities to share data with peers in the region to help identify potential issues and trends and develop collaborative solutions. Monitoring will include identifying the number of sites, investigations conducted, and littering violations reported.

**Strategy 4 – Restitution/Fine Reallocation**

The ECTF and SWACO work closely with the Community Clean-up Fund Committee to manage and disperse funding generated from court restitution fines. Funds approved by this committee support cleanup activities, community tire collection events, and purchasing equipment for the ECTF and associated partners. SWACO and the ECTF will continue to work closely with the Community Clean-up Fund Committee to coordinate activities and use of the restitution funds.

Name	Start Date	End Date	Goal(s)
City of Columbus Funding Assistance	Existing	Ongoing	none

SWACO contracts with the City of Columbus to fund an Environmental Steward position to implement waste reduction and recycling efforts within the City of Columbus. The contract is reviewed annually and allocated as a grant with a specified, long-term scope of work.

The Environmental Steward Office staff reaches out to the business community to encourage sustainability practices through its GreenSpot Program. Specific projects created/developed include: tax incentives, Get Green Business Conference, review of zoning codes (looking for green building impediments), partnership with Capital Crossroads Special Improvement District to develop recycling programs in downtown district and expansion of GreenSpot Program where businesses pledge to conduct recycling activities. The Environmental Steward Office also assists with the implementation and management of the residential curbside recycling contract.

The scope of work will include reporting for successes and challenges for projects/strategies.

Name	Start Date	End Date	Goal(s)
Program Planning Assistance and SWMP Program Development	2016	Ongoing	none

To ensure SWACO is regularly evaluating operations and making programs run as efficiently as possible, SWACO will pursue program assistance and development. Assistance and development will review, conduct studies, and explore research of programmatic approaches and potential approaches during the planning period. Goals of achieving sustainability and higher diversion rates are driving factors for program assistance and development. SWACO is positioned to study technologies, systems and new initiatives to further SWACO goals. SWACO will pursue program assistance and development to push towards resource management and best opportunities.

SWACO will also utilize outside assistance in revising its Solid Waste Management Plan. In addition, SWACO may require assistance for reports annually submitted to Ohio EPA such as the Annual District Reports.



# APPENDIX J

## REFERENCE YEAR OPPORTUNITY TO RECYCLE AND DEMONSTRATION OF ACHIEVING GOAL 1



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

SWACO is committed to achieving Goal 2 of the *2009 State Plan* (i.e., waste reduction/recycling goal) but must demonstrate compliance with achieving Goal 1 under the requirements of Ohio EPA Plan Format v4.0.

### A. Residential Sector Opportunity to Recycle

**Table J-1a1. Opportunity to Recycle: Curbside Programs**

ID #	Franklin	2014		2022 (Year 5)		2027 (Year 10)		2032 (Year 15)	
	Name of Community	Population	Credit	Population	Credit	Population	Credit	Population	Credit
NSC1	City of Bexley	13,517	13,517	13,900	13,900	14,144	14,144	14,393	14,393
NSC2	Blendon Township	8,018	8,018	8,245	8,245	8,390	8,390	8,538	8,538
NSC3	Village of Brice	120	120	123	123	126	126	128	128
NSC4	Clinton Township	4,076	4,076	4,191	4,191	4,265	4,265	4,340	4,340
NSC5	City of Columbus	835,957	835,957	859,626	859,626	874,758	874,758	890,156	890,156
NSC6	City of Dublin	44,214	44,214	45,466	45,466	46,266	46,266	47,081	47,081
NSC7	City of Gahanna	34,257	34,257	35,227	35,227	35,847	35,847	36,478	36,478
NSC8	City of Grandview Heights	7,244	7,244	7,449	7,449	7,580	7,580	7,714	7,714
NSC9	Village of Marble Cliff	581	581	597	597	608	608	619	619
NSC10	City of Grove City	38,519	38,519	39,610	39,610	40,307	40,307	41,016	41,016
NSC11	Jackson Township	4,181	4,181	4,299	4,299	4,375	4,375	4,452	4,452
NSC12	City of Groveport	5,672	5,672	5,833	5,833	5,935	5,935	6,040	6,040
NSC13	City of Hilliard	32,465	32,465	33,384	33,384	33,972	33,972	34,570	34,570
NSC14	Jefferson Township	10,396	10,396	10,690	10,690	10,879	10,879	11,070	11,070
NSC15	Madison Township	11,203	11,203	11,520	11,520	11,723	11,723	11,929	11,929
NSC16	Village of New Albany	9,202	9,202	9,463	9,463	9,629	9,629	9,799	9,799
NSC17	Norwich Township	3,985	3,985	4,098	4,098	4,170	4,170	4,243	4,243
NSC18	Perry Township	3,733	3,733	3,839	3,839	3,906	3,906	3,975	3,975
NSC19	Plain Township	1,954	1,954	2,009	2,009	2,045	2,045	2,081	2,081
NSC20	Pleasant Township	6,857	6,857	7,051	7,051	7,175	7,175	7,302	7,302
NSC21	City of Reynoldsburg	35,792	35,792	36,805	36,805	37,453	37,453	38,113	38,113
NSC22	Village of Riverlea	564	564	580	580	590	590	601	601
NSC23	Truro Township	1,361	1,361	1,400	1,400	1,424	1,424	1,449	1,449
NSC24	City of Upper Arlington	34,609	34,609	35,589	35,589	36,215	36,215	36,853	36,853

**Table J-1a1. Opportunity to Recycle: Curbside Programs (continued)**

ID #	Franklin	2014		2022 (Year 5)		2027 (Year 10)		2032 (Year 15)	
	Name of Community	Population	Credit	Population	Credit	Population	Credit	Population	Credit
NSC25	Village of Urbancrest	1,011	1,011	1,040	1,040	1,058	1,058	1,077	1,077
NSC26	Washington Township	979	979	1,007	1,007	1,024	1,024	1,042	1,042
NSC27	City of Westerville	37,667	37,667	38,733	38,733	39,415	39,415	40,109	40,109
NSC28	City of Whitehall	18,558	18,558	19,083	19,083	19,419	19,419	19,761	19,761
NSC29	City of Worthington	14,384	14,384	14,791	14,791	15,052	15,052	15,317	15,317
NSC30	Village of Minerva Park	1,306	1,306	1,343	1,343	1,367	1,367	1,391	1,391
NSC31	Franklin Township	9,752	9,752	10,028	10,028	10,205	10,205	10,384	10,384
NSC32	Village of Valleyview	630	630	648	648	659	659	671	671
NSC33	Mifflin Township (2015)	N/A	N/A	2,664	2,664	2,711	2,711	2,759	2,759

SWACO will continue to exceed Goal 1 for each year of the planning period. All curbside programs operating during the reference year (2014) are expected to continue. Mifflin Township entered into a contract to begin providing non-subscription curbside recycling services to residents beginning in 2015. The following table presents the estimated population with access to curbside recycling programs.

**Table J-1a2. Summary Table for Opportunity to Recycle: Curbside Recycling Programs**

Year	Population Data	County
		Franklin
2014	Total County	1,274,732
	Credit	1,232,764
	% Access	96.71%
2022 (Year 5)	Total County	1,300,274
	Credit	1,270,332
	% Access	97.70%
2027 (Year 10)	Total County	1,336,403
	Credit	1,292,694
	% Access	96.73%
2032 (Year 15)	Total County	1,370,250
	Credit	1,315,449
	% Access	96.00%

The following table presents the Recycling Drop-Off sites in the reference year and year 5, 10, and 15 of the planning period, as well as the population credit received for each location. Many locations show a credit of zero because the community where the drop-off is located has curbside recycling. Municipalities are not permitted to have population credits exceeding 100%.

**Table J-1b1. Opportunity to Recycle: Drop-off Programs (2014-2032)**

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Canal Winchester Kroger Store 6095 Gender Rd.	7,704	5,000	7,858	5,000	8,077	5,000	8,281	5,000
Canal Winchester WM Recycling Center 1006 Walnut St.	7,704	0	7,858	0	8,077	0	8,281	0
Canal Winchester Stradley Park 30 S. High St.	7,704	0	7,858	0	8,077	0	8,281	0
Columbus Indianola Plaza 3600 Indianola Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 5433 Fisher Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus 14-0 Carryout 320 E. Hudson St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Beta Theta Pi 165 E. 15th Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Columbus Schools Main Office 270 E. State St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 211 McNaughten Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 2193 Frank Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 3069 Parsons Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 3240 McCutcheon Rd.	835,957	0	852,707	0	876,400	0	898,597	0



Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Fire Station 3555 Fishinger Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 3675 Gender Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 4100 Sullivant Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 440 Lazelle Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 5151 Little Turtle Way	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 5305 Alkire Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station 7560 Smokey Row Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fox and Hounds 1075 Weybridge Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Godman Guild 303 East 6th Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Goodale Park 120 W. Goodale Blvd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Kings Art Center 867 Mt Vernon Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Kroger Store 1375 Chambers Rd.	835,957	0	<i>Closed during 2014</i>					
Columbus Kroger Store 150 West Sycamore & Front St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Kroger Store 1630 Morse Rd.	835,957	0	<i>Closed during 2014</i>					
Columbus Kroger Store 3637 S. High St.	835,957	0	<i>Closed during 2014</i>					

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Kroger Store 3675 E. Broad St.	835,957	0	Closed during 2014					
Columbus Kroger Store 850 S. Hamilton Rd.	835,957	0	Closed during 2014					
Columbus Lemans Village 5026 Dieker Rd.	835,957	0	852,707	0	876,400	0	898,597	0
ColumbusHome Depot 5200 N. Hamilton Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Newman Center 64 W. Lane Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Parliament Ridge 4388 Walford St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Recreation Center 276 S. Nelson Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Recreation Center 1184 Barnett Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Recreation Center 1254 Briarwood Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Recreation Center 1826 Lattimer Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Recreation Center 240 W. Oakland Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Recreation Center 2801 Lockbourne Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Recreation Center 455 S. Westgate Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Recreation Center 4900 Olentangy River Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Northcrest Park Reed Rd.	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Recreation Center Whestone Park 3923 N. High St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Runaway Bay 1480 Runaway Bay Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Wood Lake Village 3535 Hunting Brook Dr.	835,957	0	852,707	0	876,400	0	898,597	0
DublinHome Depot5959 Sawmill Rd.	44,214	0	45,100	0	46,353	0	47,527	0
Galloway/Prairie Twp. Batelle Darby Creek 1775 Darby Creek Dr.	17,173	5,000	17,517	5,000	18,004	5,000	18,460	5,000
Grove City Municipal Bldg. 4035 Broadway	38,519	0	39,291	0	40,383	0	41,405	0
Grove City Phoenix Golf Links 3413 Jackson Pike	38,519	0	39,291	0	40,383	0	41,405	0
Grove City, Service Department - 3262 Ventura Blvd.	38,519	0	39,291	0	40,383	0	41,405	0
Grove City Urbancrest YMCA 3500 1st Ave.	38,519	0	39,291	0	40,383	0	41,405	0
Grove City Walmart 1693 Stringtown Rd.	38,519	0	39,291	<i>Closed during 2014</i>				
Grove City Walmart Dist. Ctr. 3880 SW Blvd.	38,519	0	39,291	0	40,383	0	41,405	0
Groveport Three Creeks Metro Park 3860 Bixby Rd.	38,519	0	39,291	0	40,383	0	41,405	0
Hilliard Kroger Store 2525 Rome-Hilliard Rd.	32,465	0	33,116	0	34,036	0	34,898	0
Lewis Center Highbanks Metro Park 9466 Columbus Pike	N/A	0	N/A	0	N/A	0	N/A	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
New Albany K-1 School Swickard Woods Blvd.	9,202	0	9,386	0	9,647	0	9,892	0
Pleasant Twp. 5373 Norton Rd.	6,861	0	6,998	0	7,193	0	7,375	0
Prairie Twp. Fire Department 123 Inah Ave.	17,173	0	17,517	0	18,004	0	18,460	0
Prairie Twp. Fire Department 451 Hubbard Rd.	17,173	0	17,517	0	18,004	0	18,460	0
Prairie Twp. Prairie Twp. Hall 23 Maple Dr.	17,173	0	17,517	0	18,004	0	18,460	0
ReynoldsburgBlacklick Woods Metro Park6975 E. Livingston Ave.	36,711	0	37,447	0	38,487	0	39,462	0
Westerville Blendon Woods Metro Park 4265 West Dublin- Granville Rd.	37,667	0	38,422	0	39,489	0	40,489	0
Westerville Sharon Woods Metro Park 6911 S. Cleveland Ave.	37,667	0	38,422	0	39,489	0	40,489	0
Worthington N. Recreation Center 374 Highland Ave.	14,384	0	14,672	0	15,080	0	15,462	0
Mifflin Twp. 2459 Agler Rd.	36,844	5,000	37,582	0	38,626	0	39,605	0
Plain Twp. Fire Station 9500 Johnstown Rd.	11,095	0	11,317	0	11,632	0	11,926	0
Westerville St. Paul Church 313 N. State St.	37,667	0	38,422	0	39,489	0	40,489	0
Worthington 12 W. New England Ave.	14,384	0	14,672	0	15,080	0	15,462	0
Worthington 48 E. New England Ave.	14,384	0	14,672	0	15,080	0	15,462	0
Columbus Park Maint. 1533 Alum Industrial Dr. W	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Audubon Center 505 W. Whittier St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fire Station #17 2300 W. Broad St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Charity Newsies 4300 Indianola Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Whole Foods (Rear) 3670 W. Dublin-Granville Rd.	44,214	0	45,100	0	46,353	0	47,527	0
Columbus MEPS 775 Taylor Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus St. Stephens 1500 E. 17th Ave.	835,957	0	852,707	0	876,400	0	898,597	0
ColumbusCOAAA174 E. Long St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Junior Achievement 68 E. 2nd Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Columbus Dog Connection 2761 Johnstown Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus CNG Filling Station 2727 Brice Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus SYC 93 W. Weisheimer Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Stonebrook Condos 3132 Dublin Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Broad Brunson Condos 1799 E. Long St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Dublin Green Meadow Creek Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Waggoner Condos 8337 Glembra Dr.	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Walden Woods Condos 3095 Griggsvieview Ct.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Market Mohawk Apts. 399 S. Grant Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Washington Place Apts. 518 E. Town St.	835,957	0	852,707	0	876,400	0	898,597	0
Brown Twp. 2491 Walker Rd.	2,346	2,500	2,393	2,500	2,459	2,500	2,522	2,500
Hamilton Twp. Corner of Lockbourne Rd. & 317	4,486	2,500	4,576	2,500	4,703	2,500	4,822	2,500
Hamilton Twp. Hamilton Twp. Park 5333 Lockbourne Rd.	4,486	2,500	4,576	2,500	4,703	2,500	4,822	2,500
Jackson Twp. 2620 London Groveport Rd.	4,181	0	4,265	0	4,383	0	4,494	0
Lockbourne Lockbourne Post Office 1 Mechanic St.	245	2,500	250	2,500	257	2,500	263	2,500
Plain Twp. 4585 Reynoldsburg New Albany Rd.	1,954	0	1,993	0	2,049	0	2,100	0
Columbus 17th Ave Facility 889 E. 17th Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Academic Acceleration 1990 Jefferson Ave .	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Africentric School 300 E. Livingston Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus AG Bell School 1455 Huy Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Alpine Elementary School 1590 Alpine Dr.	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Avalon Elementary School 5200 Avalon Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Avondale Elementary 141 Hawkes Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Beatty Park Elementary 519 Trevitt	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Beechcroft High School 6100 Beechcroft Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Berwick Elementary School 2595 Scottwood Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Binns Elementary School 1080 Binns Blvd	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Briggs High School 2555 Briggs Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Broadleigh Elementary School 3039 Maryland Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Buckeye Middle School 2950 S. Parsons Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Burroughs Elementary School 551 S. Richardson Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Cassady Elementary School 2500 N. Cassady Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Cedarwood Elementary School 3350 S. Champion Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Centennial High School 1441 Bethel Rd.	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Champion Middle School 284 N. 22nd St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Clinton Heights 10 Clinton Heights Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Columbus Downtown High 364 S. 4th St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Colerain Elementary School 499 E. Weisheimer Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Columbus Scioto 2951 S. High St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Columbus Spanish Immersion 2155 Fenton St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Columbus Alternative High School 2632 McGuffey Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Columbus City Prep Boys 417 S. Weyant Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Columbus City Prep Girls 1390 Bryden Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Como Elementary School 2989 Reis Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Cranbrook Elementary School 908 Bricker Blvd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Devonshire Elementary School 6286 Ambleside Dr.	835,957	0	852,707	0	876,400	0	898,597	0



Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Dominion Middle School 330 E. Dominion Blvd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Duxberry Middle School 1779 E. Maynard Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Eakin Elementary School 3774 Eakin Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus East Columbus Elementary School 3100 E. 7th Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus East High 1500 E. Broad St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus East Linden Elementary School 2505 Brentnell	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Eastgate Elementary School 1925 Stratford Way	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Easthaven Elementary School 2360 Garnet Pl.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Eastmoor Middle School 3450 Medway Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fairmoor Elementary School 3281 Mayfair Park Pl.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fairwood Elementary School 726 Fairwood Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fifth Ave. Elementary School 104 W. Hubbard	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Food Production Center 450 E. Fulton St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Forest Park Elementary School 5535 Sandalwood Blvd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Fort Hayes Complex Jack Gibbs Blvd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Gables Elementary School 1680 Becket Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Georgian Heights Elementary School 3771 Eakin Rd	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Hamilton Elementary School 2047 Hamilton Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Highland Elementary School 40 S. Highland Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Hilltonia Middle School 2345 W. Mound St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Hudson Elementary School 2323 Lexington Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Hudson Warehouse 737 E. Hudson	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Independence High School 5175 Refugee Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Indian Springs Elementary School 50 E. Henderson	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Yorktown Middle School 5600 E. Livingston Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Indianola K-8 251 E. Weber Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Innis Elementary School 3399 Kohr Blvd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus International School 100 E. Arcadia Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Johnson Park Elementary 1130 S. Waverly St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Kingswood Data Center 1091 King Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Leawood Elementary School 1677 S. Hamilton Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Liberty Elementary School 2949 Whitlow Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Lincoln Park Elementary School 579 E. Markison Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Lindbergh Elementary School 2541 Lindbergh Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Linden Elementary School 2626 Cleveland Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Linden McKinley High School 1320 Duxberry Ave.	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Livingston Elementary School 825 E. Livingston Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Maize Elementary School 4360 Maize Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Marion Franklin High School 1265 Koebel Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Medina Middle School 1425 Huy Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Mifflin High School 3245 Oak Spring St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Mifflin Middle School 3000 Agler Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Moler / Heyl Elementary 1201 Moler Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Morse Rd. Bus Compound 4100 Appian Way Blvd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus North Linden Elementary School 1718 E. Cooke Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Northgate Elementary 6655 Sharon Woods	835,957	0	852,707	0	876,400	0	898,597	0
ColumbusNorthland High School1919 Northcliff Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Northtowne Elementary School 4767 Northtowne Blvd.	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Oakland Park Elementary School 3392 Atwood Terrace	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Oakmont Elementary School 5666 Oakmont Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Ohio Elementary School 505 S. Ohio Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Olde Orchard Elementary School 800 McNaughton Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Parkmoor Elementary School 1711 Penworth Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Parsons Elementary School 3231 Lee Ellen Pl.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Ridgeview Middle School 4241 Rudy Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Salem Elementary School 1040 Garvey Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Frebis Bus Compound 1799 Frebis Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Scottwood Elementary School 3392 Scottwood Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Shady Lane Elementary School 1444 Shady Lane Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Shepard Center 873 Walcutt Ave.	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
Columbus Sherwood Middle School 1400 Shady Lane Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Siebert Elementary School 385 Reinhard Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus South High School 1160 Ann St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus South Mifflin Elementary School 2365 Middlehurst Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Southwood Elementary School 1500 S. 4th St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Starling Middle School 120 S. Central Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Stewart Elementary School 387 E. Beck St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Sullivant Elementary School 791 Griggs Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Valleyforge Elementary School 1321 Urban Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Valleyview Elementary School 2989 Valleyview Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Walnut Ridge High School 4841 E. Livingston Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Watkins Elementary 1486 Watkins Road	835,957	0	852,707	0	876,400	0	898,597	0

Franklin	2014		2022		2027		2032	
Name of Drop-Off Site	Population	Credit	Population	Credit	Population	Credit	Population	Credit
ColumbusWedgewood M School3800 Briggs Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Weiland Park Elementary School 211 E. Seventh Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus West Broad Elementary School 2744 W. Broad St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus West High School 179 S. Powell Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus West Mound Elementary School 2051 W. Mound St.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Westgate Elementary School 3080 Wicklow Rd.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Westmoor Middle School 3001 Valleyview Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Whetstone High School 4405 Scenic Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Windsor Elementary School 1219 E. 12th Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Winterset Elementary School 4776 Winterset Dr.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Woodcrest Elementary School 5321 E. Livingston Ave.	835,957	0	852,707	0	876,400	0	898,597	0
Columbus Woodward Park Middle School 5151 Karl Rd.	835,957	0	852,707	0	876,400	0	898,597	0

**Sources of Information:** Ohio Development Services Agency, 2014 Population Estimates by County, City, Village, and Township, May 2015.

Drop-off sites that closed during the reference year are identified in Table J1-b1. All of SWACO’s drop-off sites meet the criteria to be eligible for access credit toward achieving Goal 1. Many sites in the table are listed with a population credit of zero. These sites are located in cities, villages, or townships that provide non-subscription curbside recycling access. Communities with non-subscription curbside recycling programs have a population credit equal to 100% of the total population; therefore, additional population credit for drop-offs cannot be counted toward achieving Goal 1 because the access credit would exceed the total population of the political subdivision.

A population credit was given to the drop-off site in Mifflin Township in 2014. Credit for the drop-off site is not given after 2014 because Mifflin Township entered into a contract to begin providing non-subscription curbside recycling to residents in 2015.

**Table J-1b2. Summary Table for Opportunity to Recycle: Drop-off Programs**

Year	Population Data	Franklin County
2014	Total County	1,274,732
	Credit	25,000
	% Access	1.96%
2022	Total County	1,251,750
	Credit	20,000
	% Access	1.60%
2027	Total County	1,284,236
	Credit	20,000
	% Access	1.56%
2032	Total County	1,314,210
	Credit	20,000
	% Access	1.52%

**Table J-1c. Summary of Opportunity to Recycle (Access Percentage)**

Year	Population Data	Franklin County
2014	Total County	1,274,732
	Credit for:	
	Curbsides	1,232,764
	Drop-offs	25,000
	Total	1,257,764
	<b>% Access</b>	<b>98.67%</b>



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

## B. Commercial Sector Opportunity to Recycle

**Table J-4. Infrastructure Demonstration for the Commercial Sector**

Service Provider	Type of Recycling Service Provided	CC	MP	SC	PL	W	FW
<i>Franklin</i>							
Able Pallet Mfg. & Repair	Pallet Refurbisher					✓	
Buckeye Diamond Logistics, Inc.	Pallet Refurbisher					✓	
Capitol Waste & Recycling Services	Hauler Collection	✓	✓	✓	✓		
Central Ohio Contractors	Hauler Collection	✓	✓	✓		✓	
Columbus Pallet Recycling	Pallet Refurbisher					✓	
Compost Columbus	Hauler Collection						✓
CycleMET	Scrap Yard, Hauler Collection			✓			
DM Pallet Service, Inc.	Pallet Refurbisher, Hauler Collection					✓	
Eartha Limited	Hauler Collection						✓
Farmer's Refuse & Trucking Inc	Hauler Collection, Buy Back*	✓		✓		✓	
Fireproof Records	Hauler Collection	✓	✓				
Franklin County Goodwill Locations	Drop-Off	✓	✓	✓	✓		
Frog Hauling LLC	Hauler Collection	✓		✓	✓	✓	
Future Organics	Hauler Collection						✓
G. C. Pallet & Storage	Pallet Refurbisher					✓	
Global Container Service Inc.	Hauler Collection	✓		✓		✓	
Green Scoop	Hauler Collection						✓
Grind2Energy	Hauler Collection						✓
Hamilton Alliance Inc.	Hauler Collection	✓	✓	✓	✓	✓	
Hope Timber Company	Pallet Refurbisher					✓	
IFCO Systems	Buy Back, Pallet Refurbisher					✓	
J.E. Johnson Pallets	Pallet Refurbisher					✓	
JDS Grinding Services	Pallet Refurbisher					✓	
Junk King	Hauler Collection	✓	✓	✓	✓	✓	
Kurtz Bros., Inc.	Hauler Collection, Drop-Off					✓	✓
Local Waste	Hauler Collection	✓	✓	✓	✓		
Organix Recycling	Hauler Collection						✓
OSU Facilities Operations	Hauler Collection	✓	✓	✓	✓		
Paper Retriever	Drop-Off, Buy Back	✓	✓				
Phoenix Recycling	Drop-Off	✓	✓		✓		

Service Provider	Type of Recycling Service Provided	CC	MP	SC	PL	W	FW
PSC Metals - Joyce Ave.	Scrap Yard			✓			
PSC Metals - Parsons Ave.	Scrap Yard			✓			
Quasar	Material Recovery Facility						✓
Recycling Exchange North	Drop-Off	✓	✓	✓	✓		
Republic	Hauler Collection	✓	✓	✓	✓		
Royal Document Destruction	Drop-Off		✓				
Royal Paper Stock Company, Inc.	Drop-Off, Buy Back	✓	✓	✓	✓		
Rumpke	Hauler Collection	✓	✓	✓	✓	✓	✓
Rumpke MRF	Material Recovery Facility	✓	✓	✓	✓		
SBC Recycling Corporation	Hauler Collection, Buy Back, Material Recovery Facility	✓	✓		✓		
Sims Recycling	Buy Back, Scrap Yard, Hauler Collection	✓	✓	✓	✓		
Srose Enterprises LTD (dba 1-800-GOT-JUNK)	Hauler Collection	✓	✓	✓	✓	✓	
SWACO Drop-Offs (93)	Drop-Off	✓	✓	✓	✓		
Viridiun	Hauler Collection						✓
Waste Management	Hauler Collection	✓	✓	✓	✓		
West Rock	Material Recovery Facility	✓	✓	✓			

CC = corrugated cardboard, MP = mixed paper, SC = steel cans, PL = plastics, W = wood pallets and packaging, FW = food waste

\*Offers rebate program to customers for metals.

Table J-4, “Infrastructure Demonstration for the Commercial Sector,” presents drop-offs, buy backs, scrap yards, haulers, pallet refurbishers, and material recovery facilities that provide recycling opportunities to the commercial/institutional sector. The total number of recycling opportunities in SWACO’s jurisdiction for six materials designated for the commercial sector to demonstrate compliance with Goal 1 are as follows:

- Corrugated cardboard: 24
- Mixed paper: 22
- Steel cans: 23
- Plastics: 18
- Wood pallets and packaging: 20
- Food waste: 10

**C. Demonstration of Meeting Other Requirements for Achieving Goal 1****1. Residential/Commercial Waste Reduction and Recycling Rate**

In the reference year, SWACO's R/C sector achieved a 32.6% waste reduction and recycling rate, which exceeds the 25% requirement to achieve Goal 1. The waste reduction and recycling rate for the R/C sector is projected to exceed the 25% requirement throughout the planning period based on anticipated volumes of recycling from scrap yards, processors, MRFs, retailers that report to Ohio EPA, scrap tire recyclers, SWACO's HHW program, SWACO's Recycling Drop-Off Program, curbside recycling programs, and organics diversion facilities.

**2. Industrial Waste Reduction and Recycling Rate**

In the reference year, SWACO's industrial sector achieved a 79.8% waste reduction and recycling rate, which exceeds the 66% requirement to achieve Goal 1. The waste reduction and recycling rate for the industrial sector is projected to exceed the 66% requirement throughout the planning period based on anticipated volumes of recycling from scrap yards, processors and MRFs.

**3. Encouraging Participation**

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

- **Workshops:** The Authority will provide in-person seminars that inform and education target audiences about relevant waste reduction and diversion practices and/or SWACO programs.
- **Presentations:** SWACO is available to provide a presenter whenever requested by communities, businesses, schools, or other groups in the District. SWACO will develop specialized presentations and proactively seek out audiences.
- **Educational campaigns:** SWACO will develop and implement a large-scale, multi-year educational campaign with consistent messaging across multi-media platforms to influence behavior change. Educational and outreach campaigns will target key audiences, such as residents, schools, commercial businesses, municipalities, and community leaders/elected officials.

- **Technical and contract assistance:** SWACO will provide technical and contract assistance to commercial entities interested in starting or expanding waste reduction and recycling programs.
- **Developing and Establishing Goals:** The Authority will convene meetings with community leaders and administrators to provide information on available services and assist with establishing goals for achieving waste reduction and recycling needs that are unique to each community.
- **SWACO as a Resource:** SWACO will continue to strengthen its role as the go-to source for information and resource related to waste management, waste reduction, reuse, recycling, composting, yard waste management, market development, scrap tires, electronics, household hazardous waste and other solid waste issues.

Appendices I and L include detailed information about each program.



# APPENDIX K

## WASTE REDUCTION AND RECYCLING RATES AND DEMONSTRATION OF ACHIEVING GOAL 2



## APPENDIX K WASTE REDUCTION AND RECYCLING RATES AND DEMONSTRATION OF ACHIEVING GOAL 2

SWACO is committed to maintaining its achievement of Goal 2, which states that the District will recycle or reduce at least 25% of the solid waste generated by the residential/commercial sector and at least 66% of the solid waste generated by the industrial sector. Table K-1a below shows the waste reduction and recycling rates (WRR) for the residential/commercial sector in the reference year and projected for the planning period. Slight increases in the WRR is projected from 2016 through 2023, with the WRR remaining constant from 2023 through 2032.

**Table K-1a. Annual Rate of Waste Reduction and Recycling:  
Residential/Commercial Solid Waste**

	Year	Population	Recycled	Disposed	Total Generated	Waste Reduction & Recycling Rate	Per Capita Waste Reduction & Recycling Rate (ppd)
First Year of Planning Period →	<b>2014</b>	<b>1,274,732</b>	<b>474,565</b>	<b>977,451</b>	<b>1,452,016</b>	<b>32.68%</b>	<b>2.0</b>
	2015	1,276,447	687,415	970,308	1,657,723	41.47%	3.0
	2016	1,278,172	695,199	963,223	1,658,422	41.92%	3.0
	2017	1,279,905	705,822	956,195	1,662,017	42.47%	3.0
	2018	1,281,648	716,658	949,224	1,665,882	43.02%	3.1
	2019	1,283,401	727,712	942,309	1,670,021	43.58%	3.1
	2020	1,285,164	738,988	935,449	1,674,437	44.13%	3.2
	2021	1,292,714	750,492	932,814	1,683,306	44.58%	3.2
	2022	1,300,274	751,966	930,162	1,682,128	44.70%	3.2
	2023	1,307,844	753,356	930,162	1,683,518	44.75%	3.2
	2024	1,315,425	753,356	930,162	1,683,518	44.75%	3.1
	2025	1,323,016	753,356	930,162	1,683,518	44.75%	3.1
	2026	1,329,704	753,356	930,162	1,683,518	44.75%	3.1
	2027	1,336,403	753,356	930,162	1,683,518	44.75%	3.1
	2028	1,343,113	753,356	930,162	1,683,518	44.75%	3.1
	2029	1,349,834	753,356	930,162	1,683,518	44.75%	3.1
	2030	1,356,566	753,356	930,162	1,683,518	44.75%	3.0
	2031	1,363,402	753,356	930,162	1,683,518	44.75%	3.0
	2032	1,370,250	753,356	930,162	1,683,518	44.75%	3.0

**Sources of Information:** Data for this table is taken from the following portions of the solid waste management plan:

- Waste Reduced and Recycled: Appendix E, Table E-4 (for reference year) and Table E-5 (for planning period)
- Waste Disposed: Appendix D, Table D-3 (for reference year) and Table D-5 (for planning period)
- Waste Generated: Appendix G, Table G-1 (for reference year) and Table G-2 (for planning period)
- Population: Appendix C, Table C-1 (for reference year) and Table C-2 (for planning period)

**Notes:** This table does not include tonnage reduced via waste incineration.

**Sample Calculations:**

$$2014 \text{ Waste Reduction \& Recycling Rate} = (2014 \text{ Waste Reduced \& Recycled} \div 2014 \text{ Waste Generated}) \times 100$$

$$32.68\% = (474,565 \text{ tons} \div 1,452,016 \text{ tons}) \times 100$$

$$2014 \text{ Per Capita Waste Reduction and Recycling Rate} = ((2014 \text{ tons recycled} \times 2,000) \div 365) \div \text{population}$$

$$2.0 \text{ ppd} = ((474,565 \text{ ton} \times 2,000) \div 365 \text{ days/year}) \div 1,274,732 \text{ residents}$$

Table K-1a shows that SWACO exceeds the requirements of Goal 2 to reduce and recycle at least 25% of the solid waste generated by the residential/commercial sector during the reference year (2014). SWACO’s anticipated WRR rate throughout the planning period will be higher than the 2014 WRR rate for any other urban SWMD, with only a handful of rural SWMDs in Ohio having higher WRR rates.

The following table presents a comparison between the projected 2014 waste reduction and recycling rate for the residential/commercial sector from SWACO’s current approved Plan and the draft Plan.

**Table K-1b. Comparison of Projected and Actual Rate of Waste Reduction: Residential/Commercial Solid Waste**

Source	Year	Population	Recycling	Yard Waste Composting	Landfill	Tons Waste Reduction	Waste Reduction Rate	Per Capita Waste Reduction Rate (ppd)
Current Approved Plan (Ratified 9/6/11)	2014	1,209,190	212,704	165,500	1,064,076	378,204	26%	1.7
Actual 2014 Data	2014	1,274,732	241,751	232,814	977,451	474,566	33%	2.0

In SWACO’s currently approved Plan, the waste reduction and recycling rate for the residential/commercial sector in 2014 was projected to be 26%. The actual waste reduction and recycling rate for the reference year was 33%.

Yard waste composting was projected in the Plan to be 165,000 tons. This was based on tonnage that was reported in 2009. Since 2009, SWACO has modified its contracts with Ohio Mulch and Kurtz Brothers and, as a result, Ohio Mulch and Kurtz Brothers have increased the quantity of materials accepted and processed. These contracts will continue to be evaluated during the planning period to identify opportunities for increased efficiency. Additionally, the growing number of out-of-district composting facilities that currently report managing Franklin

County-generated yard waste indicates that yard waste composting activities have increased and become more accessible in SWACO's District since the development of the currently approved Plan.

The residential/commercial sector recycling was projected to be 212,704 tons in the current Plan. However, residential curbside recycling programs diverted approximately 60% more materials than projected. Plan projections did not include tonnage projections for the City of Columbus' non-subscription curbside recycling program, which was fully implemented by 2013. SWACO's waste consortium program also contributed to increases in curbside tonnage. The program has helped many Franklin County political subdivisions obtain better and more cost-effective recycling services for residents.

Electronics recycling diverted approximately 3,000% more materials than projected and actual tire recycling was approximately 87% higher than projected. The use of electronics and the pace at which electronics become outdated has increased more than anticipated. Increases in the amount of electronic wastes generated have led to increases in e-waste processors, end markets, and recycling opportunities for consumers. Tire recycling projections in the Plan were based on population changes. The Plan projected population to be 1,209,190 in 2014, but more recent statistics estimate population to be 1,274,732. The larger number of Franklin County residents who operate automobiles is likely the main cause of the higher recycled tire tonnage.

Table K-2a below shows that SWACO exceeds the requirements of Goal 2 to reduce and recycle at least 66% of the solid waste generated by the industrial during the reference year. SWACO anticipates that the waste reduction and recycling rate will remain flat throughout the planning period, surpassing the industrial sector requirements of Goal 2 each year of the planning period.



**Table K-2a. Annual Rate of Waste Reduction and Recycling: Industrial Solid Waste**

	Year	Tons Reduced and Recycled	Tons Disposed	Tons Generated	Waste Reduction and Recycling Rate
X First Year of Planning Period →	<b>2014</b>	<b>178,368</b>	<b>45,145</b>	<b>223,513</b>	<b>79.80%</b>
	2015	228,338	41,777	270,115	84.53%
	2016	228,338	41,670	270,008	84.57%
	2017	228,338	41,564	269,902	84.60%
	2018	228,338	41,458	269,796	84.63%
	2019	228,338	41,352	269,690	84.67%
	2020	228,338	41,247	269,585	84.70%
	2021	228,338	41,141	269,479	84.73%
	2022	228,338	41,036	269,374	84.77%
	2023	228,338	41,036	269,374	84.77%
	2024	228,338	41,036	269,374	84.77%
	2025	228,338	41,036	269,374	84.77%
	2026	228,338	41,036	269,374	84.77%
	2027	228,338	41,036	269,374	84.77%
	2028	228,338	41,036	269,374	84.77%
	2029	228,338	41,036	269,374	84.77%
	2030	228,338	41,036	269,374	84.77%
	2031	228,338	41,036	269,374	84.77%
	2032	228,338	41,036	269,374	84.77%

**Sources of Information:** Data for this table is taken from the following portions of the solid waste management plan:

- Waste Reduced and Recycled: Appendix F, Table F-4 (for reference year) and Table F-5 (for planning period)
- Waste Disposed: Appendix D, Table D-3 (for reference year) and Table D-5 (for planning period)
- Waste Generated: Appendix G, Table G-1 (for reference year) and Table G-2 (for planning period)

**Sample Calculations:**

2014 Waste Reduction & Recycling Rate = (2014 Waste Reduced & Recycled ÷ 2014 Waste Generated) x 100

79.80% = (178,368 tons ÷ 223,513 tons) x 100

The following table presents a comparison between the projected 2014 waste reduction and recycling rate for the industrial sector from SWACO's current approved Plan and the draft Plan.

**Table K-2b. Comparison of Projected and Actual Rate of Waste Reduction and Recycling: Industrial Solid Waste**

Source	Year	Recycling	Landfill	Total Generation	Waste Reduction and Recycling Rate
Current Approved Plan (Ratified 9/6/11)	2014	115,322	20,780	136,102	85%
Actual 2014 Data	2014	178,368	45,145	223,513	80%

In SWACO's current approved Plan, the waste reduction and recycling rate for the industrial sector in 2014 was projected to be 85%. The actual waste reduction and recycling rate during the reference year was 80%.

Total industrial sector waste generation in the approved Plan from 2010 to 2016 was projected by decreasing the total industrial sector waste generation at the same annual rate as industrial sector employment projections. Industrial sector employment was projected to decrease in Central Ohio by 17.6% from 2006 to 2016, or 1.76% annually. Total waste generation was projected to be 136,102 tons, but reference year data showed that 223,513 tons were actually generated. The impact of the economic recession and job losses in the manufacturing industry did not result in as great of an impact on total waste generation as forecasted.

Industrial sector recycling was projected to decrease at the same annual rate as industrial sector employment projections from 2010 to 2016, which was a decrease of 1.76% annually. An additional 10,000 tons was added to the 2014 recycling estimate to reflect tonnage diverted from SWACO's Infrastructure Program (SWACO-FAC-1, A-H).

The total tons recycled in 2014 were greater than projected. Similar to the discussion on the industrial sector's total waste generation, the main reason recycling tonnage was higher than projected was because the impact of the economic recession and job losses in the manufacturing sector did not result in as great of an impact on total waste generation as forecasted. Furthermore, the percentage of job losses in the industrial sector did not directly correlate with the tons of waste generated.

Although the total tons recycled by the industrial sector were greater than projected, the waste reduction and recycling rate was 5% lower than projected for the reference year. The difference in the actual and projected value is mainly due to underestimating the total tons that would be generated by the industrial sector and overestimating the impact of SWACO's infrastructure program on the industrial sector's recycling rate.

The combined WRR rate for residential/commercial and industrial sectors is shown in Table K-3 below. Overall, the WRR rate is projected to exceed 50% by the year 2021.

**Table K-3. Annual Rate of Waste Reduction and Recycling: Total Solid Waste**

	Year	Waste Reduced and Recycled	Waste Disposed (tons)	Waste Generated (tons)	Waste Reduction and Recycling Rate
First Year of Planning Period →	<b>2014</b>	<b>652,933</b>	<b>1,022,595</b>	<b>1,675,529</b>	<b>38.97%</b>
	2015	915,753	1,012,085	1,927,838	47.50%
	2016	923,537	1,004,894	1,928,431	47.89%
	2017	934,160	997,759	1,931,919	48.35%
	2018	944,996	990,682	1,935,678	48.82%
	2019	956,050	983,661	1,939,711	49.29%
	2020	967,326	976,696	1,944,022	49.76%
	2021	978,830	973,955	1,952,785	50.12%
	2022	980,304	971,198	1,951,502	50.23%
	2023	981,694	971,198	1,952,892	50.27%
	2024	981,694	971,198	1,952,892	50.27%
	2025	981,694	971,198	1,952,892	50.27%
	2026	981,694	971,198	1,952,892	50.27%
	2027	981,694	971,198	1,952,892	50.27%
	2028	981,694	971,198	1,952,892	50.27%
	2029	981,694	971,198	1,952,892	50.27%
	2030	981,694	971,198	1,952,892	50.27%
	2031	981,694	971,198	1,952,892	50.27%
	2032	981,694	971,198	1,952,892	50.27%

Sources of Information: Tables K-1 and K-2

**Sample Calculations:**

2014 Waste Generated = 2014 Waste reduced and recycled + 2014 waste disposed

1,675,529 tons = 652,933 tons + 1,022,595 tons

2014 Waste Reduction & Recycling Rate = (2014 Waste Reduced & Recycled ÷ 2014 Waste Generated) x 100

38.97% = (652,933 tons ÷ 1,675,529 tons) x 100

SWACO is committed to maintaining its achievement of Goal 2. The specific programs and activities that will provide assistance in achieving the targeted recycling rates are discussed in Appendix I.



# **APPENDIX L**

## **MINIMUM REQUIRED EDUCATION PROGRAMS: OUTREACH AND MARKETING PLAN AND GENERAL EDUCATION REQUIREMENTS**



## **APPENDIX L: OUTREACH AND MARKETING PLAN AND GENERAL EDUCATION REQUIREMENTS**

### ***Goal 4: Outreach and Education – Outreach Plan and General Requirements***

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

#### **A. Minimum Required Outreach and Education Programs**

##### **1. Website**

SWACO's current website contains the necessary information to adequately describe its basic programs and their purposes. In its current state, the website achieves the minimum requirements for educational programs as there is information on recycling programs, yard waste, household hazardous waste (HHW) and landfill tours. Since 2013, the website has seen an average of more than 297,000 unique visitors annually, with an average of 567,000 page views. These numbers demonstrate the true potential the website can serve in reaching a large audience each year. SWACO's management understands the importance of the website as a one-way source of information. It is the first step in getting information out to its constituents.

In late 2015, SWACO hired a full-time Communications Manager. Since then, the website is being updated on a regular basis, and website and social media reach numbers have grown rapidly SWACO aims to completely revamp the website in 2017.

SWACO's new website will be a one-stop source of information for constituents of the District. SWACO will explore best practices for developing the new website that may include an improved searchable reuse and recycling database and resource guide, new layouts for accessing information, and enhanced visuals that convey waste reduction and diversion practices. The website will also help to provide better analytics and tracking for monitoring and measuring the impacts of programs, initiatives, and educational campaigns.

SWACO will work with each community to tie all website information back to the website and create direct links to each community's webpages. This will increase Search Engine Optimization to allow SWACO's website to be among top area web searches.

## **2. Resource Guide (via Website)**

While a comprehensive resource guide in a print format has not been published, SWACO's website is considered to be a resource guide. Residents and businesses within the District can find out about waste disposal, search for recycling drop off locations, learn about HHW collection options, special community collection events, donation and reuse options, and other recycling options for hard-to-recycle materials.

SWACO will evaluate ways to improve its searchable resource guide / database as part of its website redesign in 2017. SWACO will continue to review and update the information contained on the website to ensure the accuracy of recycling options available to residents and businesses within Central Ohio.

## **3. Infrastructure Inventory**

Similar to the resource guide, SWACO has a comprehensive listing on infrastructure located on the website. This information includes infrastructure owned, managed or contracted by SWACO such as the: landfill, compost facilities, recycling drop-off locations, HHW collection facility, and SWACO's transfer facilities. There are also listings for curbside recycling programs, prescription drug disposal locations, and plastic bag recycling drop-off sites.

## **4. Speaker/Presentations**

SWACO is ready and able to provide a presenter whenever requested by communities, businesses, schools and other groups within the District. Requests can be made through SWACO's website, email or by phone. SWACO customizes the presentation and topic material toward the audience that is requesting the presentation.

During the planning period, SWACO will be take a more proactive approach to presenting by seeking out audiences and developing specialized presentations that raise awareness about new initiatives and key events that will be taking place. SWACO will also explore the idea of a Speakers Bureau. The Speakers Bureau is a dedicated group of trained volunteers and interns that can supplement staff allowing SWACO to reach a greater number of audiences.

## **B. Additional Outreach and Education Programs**

Outreach and education are critical to successful diversion programming. Research has proven that programs with the highest participation have robust educational campaigns. During the planning period, SWACO will continue to develop and implement an array of outreach, education, technical assistance and marketing materials to address a variety of

subjects to diverse audiences. SWACO will continue to strengthen its role as the go-to source for information and resource related to waste management, waste reduction, reuse, recycling, composting, yard waste management, market development, scrap tires, electronics, household hazardous waste and other solid waste issues.

Best practices include education campaigns that are simple and engaging with consistent messaging across multi-media platforms. Investments will be made in expanded communication programs to target groups to ensure diversion efforts succeed. All education uses a common suite of materials and messaging. Websites and social media platforms contain accurate and up-to-date information at all times as the website serves as the primary hub of information. Education also goes hand-in-hand with operational and programmatic changes.

SWACO has the opportunity to be the conduit for waste reduction, reuse and recycling education messaging. In order to make communication successful, it is best served by focusing on creating a two-way communication and building relationships with target audiences rather than trying to reach a “general public” about a specific program. The six target audiences identified include: residents, schools, industries, commercial businesses, municipalities and community leaders/elected officials. Programs (as per Appendix I) will be promoted throughout these target audiences however SWACO’s fundamental step is identifying and creating relationships with these targets. Similar just because a program is not specifically mentioned does not mean that it will not be addressed as a priority.

The following sections address SWACO’s outreach and education efforts to address the six target audiences and at least one priority outreach campaign for each target audience. Campaigns are not separate programs, they are woven into programs identified in Appendix I and should be viewed as outreach support to ensure program success.

## **1. *Reaching Residents (Outreach Priority)***

### **Introduction**

Residents within the District, including single-family and multi-family dwellings, are a priority target audience for SWACO. Continuing to improve outreach and education to this audience will result in increased participation in existing and new initiatives, and a measurable improvement in diversion, as well as reduced contamination in the recycling stream.

### **Evaluation**

In terms of education, historically SWACO has only conducted small campaigns focused towards the residential audience. This poses a challenge in developing effective methods to communicate messaging without being able to learn from prior implementation but it also provides a great deal of opportunity for increasing

awareness and participation in diversion programs. In terms of infrastructure, the District only has one main recycling processor that receives recyclables from residents. This creates an opportunity as the list of accepting materials is fairly consistent throughout the District.

### **Conclusions**

SWACO has the opportunity to be an unparalleled resource for waste reduction, reuse and recycling education. SWACO will continue to strengthen its relationships with residents and develop comprehensive outreach and education programming that educates residents in the District. One of the areas of focus for reaching residents includes improving awareness of acceptable recyclable materials available through residential programs such as curbside and drop-off programs. The projected result will be that residents will have an increased awareness of what is and isn't recyclable, and this will lead to increased participation in recycling as well as decreased contamination.

### **Programs to Address Target Audience**

In order to reach and engage residents, SWACO will use a range of targeted and broad-based programs. Please note that all facets of the Plan will, at some level, use **market research**. Market research will incorporate feedback from program participants, via surveys and interviews, and ongoing research of best practices, to modify and adjust programs and benchmark progress.

The primary targeted strategy for this audience will be SWACO's **district-wide education campaign**.

- Developing and implementing a large-scale, multi-year public education campaign that establishes clear messaging on the importance of waste reduction and diversion (reuse, recycling, composting, etc.) to influence behavior change. The first phase of the program is to create a brand for the overall campaign, and then develop and launch a campaign on how and where to recycle properly. Additional campaign topics related to waste reduction and diversion will be addressed throughout the planning period based on feedback from surveys and feedback from residence and stakeholders. We will be working with Communities, processors and other stakeholders to develop consistent messaging for these educational materials. These materials will include printed materials such as flyers, postcards, magnets that will be distributed in collaboration with each of the Communities in the District. Digital materials will also be available for download from the SWACO website. We will increase awareness of the campaign and related materials through **earned media, social media** and paid advertising. The district-wide



educational campaign will begin in the Summer of 2017 and continue annually throughout the planning period.

- Timeline: Summer 2017 – 2032
- Metrics: # of households reached by printed materials, # of downloads of digital materials, amount of material diverted per community

Other strategies for reaching this audience include:

- Offer a searchable **reuse and recycling directory**. The directory will clarify what is and is not reusable, recyclable and/or compostable within the District; and how to properly manage these materials (reuse/donation facilities, curbside recycling, recycling drop-off locations, store take-back programs, special waste disposal, etc.).
  - Timeline: Spring 2017 – 2032
  - Metrics: # of searches performed
- Offering tips, advice and program updates through **digital communications**, which, for this audience, would include SWACO's external newsletter.
  - Timeline: Quarterly, Winter 2017 – 2032
  - Metrics: # of contacts/entities reached
- Providing additional educational **collateral materials** describing related programs and services.
  - Timeline: Spring 2017 – 2032
  - Metrics: # of materials distributed
- Engage residence by **tabling** and offering information at community events.
  - Timeline: Spring 2017 – 2032
  - Metrics: # of events tabled, # of attendee interactions
- Hosting **landfill tours** of Franklin County Sanitary Landfill.
  - Timeline: Quarterly, 2017 – 2032
  - Metrics: # of tours, # of attendees
- Publishing an **annual report**.
  - Timeline: Annually, 2017 – 2032
  - Metrics: # of reports distributed and/or downloaded

### Tracking Results

In order to measure the overall success of programming, SWACO will:

- Deliver and analyze post-engagement/assistance surveys to help measure the effectiveness of our programming and provide an opportunity to see if behavior change or knowledge goals were met.
- Track metrics related to the reach of district-wide campaigns.
- Track tons diverted through various collection-based programs.
- Track number of participants engaging in SWACO programs.

## 2. **Reaching Schools**

### **Introduction**

School teachers, students, and facility managers within the District, including those from public and private schools, are a target audience for SWACO. Improving outreach and education to this audience will result in increased awareness of the importance of waste reduction and diversion, improve participation in existing and new initiatives, and a measurable improvement in diversion, as well as reduced contamination in the recycling stream.

### **Evaluation**

Schools within the District have wide range educational and logistical needs when it comes to environmental education. Educators need to find programming that addresses their needs for curriculum materials, hands-on in-classroom activities, and out-of-classroom experiences for their students, while facility managers need technical assistance with internal waste reduction and diversion services.

### **Conclusions**

Schools are looking to SWACO to be an educational and technical resource on waste reduction and diversion programs and services. SWACO will update its database of educators and facility managers then perform targeted outreach and market research. One of the areas of focus for reaching schools is to survey educators regarding SWACO methods of promoting its services to schools, and evaluate their needs in meeting State of Ohio curriculum requirements and functionality. The result of a stronger reach to more educators is an increased awareness about SWACO's offerings, informational presentations and workshops, landfill tours, and this will likely lead to increased rates of program participation.

### **Programs to Address Target Audience**

In order to reach and engage Schools, SWACO will use a range of targeted and broad-based programs. Please note that all facets of the Plan will, at some level, use **market research**. Market research will incorporate feedback from program participants, via surveys and interviews, and ongoing research of best practices, to modify and adjust programs and benchmark progress.

The primary strategies for engaging Schools, include:

- Create and deliver a **targeted outreach campaign**. The outreach campaign will be aimed at Schools within the District, and will inform them of relevant resources and services. The campaign will use **digital, earned, and paid media**

and will begin in Spring of 2018 and continue annually throughout the planning period.

- Timeline: Spring 2018 – 2032
- Metrics: # of industries reached
- Offer **informational presentations, workshops** and/or **webinars** to educators to promote waste reduction and diversion educational resources that align with state curriculum requirements. Engage students and other youth organizations through providing presentations and seminars on the importance of waste reduction and diversion.
  - Timeline: Fall 2017 – 2032
  - Metrics: # of presentations, # of attendees
- Hosting **landfill tours** of Franklin County Sanitary Landfill to education students on the impacts of waste and the opportunities for increased waste reduction.
  - Timeline: As requested, 2017 – 2032
  - Metrics: # of tours, # of attendees

Other strategies for reaching this audience include:

- Offering tips, advice and program updates through **digital communications**, which, for this audience, would include SWACO's external newsletter.
  - Timeline: Quarterly, 2017 – 2032
  - Metrics: # of contacts/entities reached
- Providing additional educational **collateral materials** describing programs suitable to the target audience.
  - Timeline: Spring 2017 – 2032
  - Metrics: # of materials distributed
- Participating in special event **tabling**.
  - Timeline: Spring 2017 – 2032
  - Metrics: # of events tabled, # of attendee interactions
- Compile and promote **case studies** on best practice in waste reduction and diversion activities in schools and youth organizations
  - Timeline: Fall 2017 – 2032
  - Metrics: # of materials distributed

### Tracking Results

In order to measure the overall success of programming, SWACO will:

- Deliver and analyze pre- and post-engagement surveys to help measure the effectiveness of our programming and provide an opportunity to see if behavior change or knowledge goals were met.

- Track number of participants engaging in SWACO programs (presentations, tours, special events, etc.).

### **3. Reaching Industries**

#### **Introduction**

Industries within the District, specifically businesses that are classified as manufacturers, are a target audience for SWACO. Improving outreach and education to this audience will result in increased participation in existing and new services, and a measurable improvement in diversion.

#### **Evaluation**

Currently, limited information exists on the waste diversion performance of the manufacturing industry in Franklin County. Although, recent information has shown that many industries are seeing a direct economic benefit from reducing, reusing and recycling their waste streams through decreased disposal costs and increased revenues from recycling materials. Increasing SWACO's reach to these industries could help to further understand and enhance diversion practices.

#### **Conclusions**

The industrial sector, a relatively new target for SWACO, will see increased focus over the plan period. In order to fully understand this audience, SWACO will need to conduct market research, including surveys and focus groups, to identify needs (see Industrial Sector Technical Assistance in Appendix I). Once fully evaluated, SWACO expects to employ a range of outreach and education programs and services which could include strengthening communication through traditional marketing and social media and offering targeted presentations/partnerships via sector-related associations (e.g., Ohio Manufacturing Association, industrial parks and corridors). The expected result is that industries will have an increased awareness about SWACO's offerings which will lead to increased awareness of, and participation in, diversion programs.

#### **Programs to Address Target Audience**

In order to reach and engage Industries, SWACO will use a range of targeted and broad-based programs. Please note that all facets of the Plan will, at some level, use **market research**. Market research will incorporate feedback from program participants, via surveys and interviews, and ongoing research of best practices, to modify and adjust programs and benchmark progress.

The primary strategies for engaging Industries, include:

- Create and deliver a **targeted outreach campaign**. The outreach campaign will be aimed at manufacturing industries in the District, and will inform them of relevant resources and services. The campaign for this sector will use **digital, earned, and paid media** and will begin in Summer of 2018 and continue annually throughout the planning period.
  - Timeline: Summer 2018 – 2032
  - Metrics: # of industries reached
- Offer **informational presentations, workshops** and/or **webinars** to inform and educate the local manufacturing industry about waste reduction and diversion practices and available offerings and services.
  - Timeline: Summer 2018 – 2032
  - Metrics: # of presentations, # of attendees
- Develop and implement a **recognition program** to acknowledge manufacturing industry leaders that have made significant progress in reuse, recycling, composting and other waste reduction activities.
  - Timeline: Spring 2019 – 2032
  - Metrics: diversion rates of awardees

Other strategies for reaching this audience include:

- Convene **meetings** and **special events**, such as business roundtables, conferences and symposiums, that cover topics including best practice, contract assistance and information on local/national trends.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of presentations, # of attendees
- Offering tips, advice and program updates through **digital communications**, which, for this audience, would include SWACO's external newsletter.
  - Timeline: Quarterly, 2018 – 2032
  - Metrics: # of people reached
- Providing additional educational **collateral materials** describing programs suitable to this audience.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of materials distributed
- Hosting **landfill tours** of Franklin County Sanitary Landfill.
  - Timeline: As requested, 2017 – 2032
  - Metrics: # of tours, # of attendees
- Develop and promote **case studies** on examples of best practice in waste reduction and diversion specific to this sector.
  - Timeline: Winter 2018 – 2032
  - Metrics: # of materials distributed

## Tracking Results

In order to measure the overall success of programming, SWACO will:

- Deliver and analyze pre- and post-engagement surveys to help measure the effectiveness of our programming and provide an opportunity to see if behavior change or knowledge goals were met.
- Track number of participants engaging in SWACO programs (presentations, tours, special events, etc.).
- Track the amount of material diverted annually by the sector.

## 4. *Reaching Institutional and Commercial Businesses*

### Introduction

Institutional and Commercial Businesses within the District, which includes commercial businesses, office buildings, stadiums, event venues, hospitals, government facilities, and nonprofit organizations that receive dumpster or compactor service for garbage, are a priority target audience for SWACO. Improving outreach and education to this audience will result in increased participation in existing and new initiatives, and a measurable improvement in diversion, as well as reduced contamination in the recycling stream.

### Evaluation

As identified in Appendix H, approximately 60% of the materials coming to the Franklin County Sanitary Landfill is from this sector, however, SWACO presently lacks data on institutional and commercial business waste reduction and diversion efforts within the District. While there is potential for direct economic benefit when businesses reduce, reuse and recycle their surplus assets and waste and recycling streams (e.g., decreased disposal costs, increased revenues, potential tax benefits) reaching businesses to encourage diversion has proven difficult in the past. Improving outreach, and program offerings, to this sector could have a significant impact on reducing waste.

### Conclusions

Institutional and Commercial Businesses, a relatively new target for SWACO, will see increased focus over the plan period. In order to fully understand this target audience, SWACO will need to conduct extensive market research, including surveys and focus groups, to identify needs (see Appendix I for more information). Once fully evaluated, SWACO expects to employ a range of outreach and education programs and services that meet identified needs. To work effectively with the sector, SWACO projects the need to provide targeted outreach via sector-

related associations (e.g., chambers of commerce, business improvement districts, trade organizations), strengthen communications, build relationships and deliver effective training opportunities. The expected result is that commercial businesses and institutions will have an increased awareness about the benefits of waste reduction and diversion that will lead increased participation in diversion programs and existing services.

### **Programs to Address Target Audience**

In order to reach and engage Institutions and Commercial Businesses, SWACO will use a range of targeted and broad-based programs. Please note that all facets of the Plan will, at some level, use **market research**. Market research will incorporate feedback from program participants, via surveys and interviews, and ongoing research of best practices, to modify and adjust programs and benchmark progress.

The primary strategies for engaging Institutional and Commercial Businesses, include:

- Create and deliver a **targeted outreach campaign**. This outreach campaign will be aimed at institutional and commercial businesses in the District, and will inform them of relevant resources and services. The campaign will use **digital, earned, and paid media** and will begin in Spring of 2018 and continue annually throughout the planning period.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of businesses reached
- Offer **informational presentations, workshops** and/or **webinars** to educate and inform the commercial sector about waste reduction and diversion practices and available services.
  - Timeline: Fall 2017 – 2032
  - Metrics: # of presentations, # of attendees
- Develop and implement a **recognition program** to acknowledge sector leaders that have made significant progress in reuse, recycling, composting and other waste reduction activities.
  - Timeline: Fall 2018 – 2032
  - Metrics: diversion rates of awardees

Other strategies for reaching this audience include:

- Provide **digital tool kits** which include customizable flyers, labels and other materials, that increase awareness of waste diversion opportunities.
  - Timeline: Fall 2017 – 2032
  - Metrics: # of tool kits distributed and/or downloaded

- Convene **meetings** and **special events**, such as business roundtables, conferences and symposiums, that cover topics including best practice, contract assistance and information on local/national trends.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of presentations, # of attendees
- Offering tips, advice and program updates through **digital communications**, which, for this audience, would include SWACO’s external newsletter.
  - Timeline: Quarterly, 2017 – 2032
  - Metrics: # of contacts/entities reached
- Hosting **landfill tours** of Franklin County Sanitary Landfill.
  - Timeline: As requested, 2017 – 2032
  - Metrics: # of tours, # of attendees
- Develop and promote **case studies** on examples of best practice in waste reduction and diversion specific to this sector.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of materials distributed

### Tracking Results

In order to measure the overall success of programming, SWACO will:

- Deliver and analyze pre- and post-engagement surveys to help measure the effectiveness of our programming and provide an opportunity to see if behavior change or knowledge goals were met.
- Track number of participants engaging in SWACO programs (presentations, tours, special events, etc.).
- Track the amount of material diverted through annual reporting.

## 5. *Reaching Municipalities*

### Introduction

Municipalities within the District, which includes government agencies of the District’s 41 cities, towns, villages, and townships, continue to be a priority target audience for SWACO. Improving outreach and education to this audience will result in increased participation in existing and new initiatives, and a measurable improvement in diversion, as well as reduced contamination in the recycling stream.

### Evaluation

Each of the 41 municipalities within the District has their own unique set of challenges and opportunities. Preliminary analysis has shown that communities



are eager for more assistance. While these government agencies may be supportive of environmental issues, they may not fully understand the operational impacts of policy decisions made about solid waste management. Providing easily accessible strategies which help them become more familiar with SWACO's waste diversion goals will ultimately benefit District communities.

## Conclusions

Municipalities look to SWACO to be their key resource for waste reduction and diversion programs and services. Existing relationships and programmatic focus has made this target audience a strength of SWACO's. In order to continue to leverage and build upon these relationships, SWACO will need to help make administrations a driver of these programs. SWACO will conduct market research to gauge the community's needs. Once evaluated, SWACO expects to employ a range of outreach and education programs designed to strengthen these relationships. The expected result is that municipalities will have an increased awareness about SWACO's offerings, especially the resources that assist with improved waste reduction planning practices, which will allow municipalities to increase cross-sector (residents, schools, businesses) awareness of SWACO's diversion programs based on geography.

## Programs to Address Target Audience

In order to reach and engage Municipalities, SWACO will use a range of targeted and broad-based programs. Please note that all facets of the Plan will, at some level, use **market research**. Market research will incorporate feedback from program participants, via surveys and interviews, and ongoing research of best practices, to modify and adjust programs and benchmark progress.

The primary strategies for engaging Municipalities, include:

- Convene **meetings** with community leaders and administrators to provide information on available services and assist with establishing goals for achieving waste reduction and recycling needs that are unique to each community.
  - Timeline: Summer 2017 – 2032
  - Metrics: # of communities engaged, # of programs joined
- Develop and promote **case studies** on examples of best practice in waste reduction and diversion specific to Municipalities.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of materials distributed
- Offer **informational presentations, workshops** and/or **webinars** to educate and teach the target audience about waste reduction and diversion practices and programs.

- Timeline: Fall 2017 – 2032
- Metrics: # of presentations, # of attendees

Other strategies for reaching this audience include:

- Offering tips, advice and program updates through **digital communications**, which, for this audience, would include SWACO's external newsletter.
  - Timeline: Quarterly, 2017 – 2032
  - Metrics: # of contacts/entities reached
- Provide **digital tool kits** which include customizable flyers, labels and other materials, that increase awareness of waste diversion opportunities.
  - Timeline: Fall 2017 – 2032
  - Metrics: # of tool kits distributed and/or downloaded
- Providing additional educational **collateral materials** describing programs suitable to this audience.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of materials distributed
- Hosting **landfill tours** of Franklin County Sanitary Landfill.
  - Timeline: As requested, 2017 – 2032
  - Metrics: # of tours, # of attendees
- Develop and implement a **recognition program** to acknowledge sector leaders that have made significant progress in reuse, recycling, composting and other waste reduction activities.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of event attendees, diversion rates of awardees
- Publishing an **annual report**.
  - Timeline: Annually, 2017 – 2032
  - Metrics: # of reports distributed and/or downloaded

### Tracking Results

In order to measure the overall success of programming, SWACO will:

- Deliver and analyze pre- and post-engagement surveys to help measure the effectiveness of our programming and provide an opportunity to see if behavior change or knowledge goals were met.
- Track number of participants engaging in SWACO programs (presentations, tours, special events, etc.)
- Track the amount of material diverted by each community through annual reporting.

## 6. **Reaching Community Leaders and Elected Officials**

### **Introduction**

Community leaders are individuals who are influential in communities and can sway public opinion, and generally represent community-based entities, such as homeowner associations, citizen groups, grassroots organizations. Elected officials include city, county and state representative who are elected to be public sector representatives. Both groups will be important to target but the approaches will vary. Strengthening outreach and communication with this target audience could result in improved participation in, and promotion of, existing and new initiatives.

### **Evaluation**

Each community within the District has their own unique set of challenges and opportunities. Preliminary analysis has shown that communities are eager for more assistance. While community leaders and elected officials may support environmental issues, they may not fully understand the operational impacts of policy decisions made about solid waste management. Providing easily accessible strategies which help them become more familiar with Franklin County's waste diversion needs, challenges, and goals will ultimately benefit District communities.

### **Conclusions**

Community Leaders and Elected Officials look to SWACO to be their key resource for understanding local waste reduction and diversion activities. Existing relationships and programmatic focus has made this target audience a strength of SWACO's. In order to continue to leverage and build upon these relationships, SWACO will need to make these individuals champions of waste reduction and diversion. SWACO expects to employ a range of outreach and education programs designed to strengthen these relationships. The anticipated result is that these leaders will be knowledgeable about waste reduction and empowered to assist in the planning and development of waste diversion activities in their community.

### **Programs to Address Target Audience**

In order to reach and engage Community Leaders and Elected Officials, SWACO will use a range of targeted and broad-based programs. Please note that all facets of the Plan will, at some level, use **market research**. Market research will incorporate feedback from program participants, via surveys and interviews, and ongoing research of best practices, to modify and adjust programs and benchmark progress.

The primary strategies for engaging Community Leaders and Elected Officials, include:

- Convene **meetings**, such as public forums and stakeholder meetings, that engage this audience on topics and issues critical to SWACO fulfilling its organizational priorities.
  - Timeline: Fall 2017 – 2032
  - Metrics: # of presentations, # of attendees
- Offer **informational presentations** to teach the target audience about waste reduction and diversion.
  - Timeline: Fall 2017 – 2032
  - Metrics: # of presentations, # of attendees

Other strategies for reaching this audience include:

- Providing additional educational **collateral materials** detailing reports and studies, and describing program impacts.
  - Timeline: Spring 2018 – 2032
  - Metrics: # of materials distributed
- Hosting **landfill tours** of Franklin County Sanitary Landfill.
  - Timeline: As requested, 2017 – 2032
  - Metrics: # of tours, # of attendees
- Publishing an **annual report**.
  - Timeline: Annually, 2017 – 2032
  - Metrics: # of reports distributed and/or downloaded

### Tracking Results

In order to measure the overall success of programming, SWACO will:

- Track number of participants engaging in SWACO programs (presentations, tours, special events, etc.).

## 7. Detailed Description of Programs

SWACO will employ several programmatic tools to deliver education and outreach regarding SWACO programs and District opportunities. The following is a list of the programmatic tools SWACO can utilize to address the needs of designated target audiences:

- **Annual Report** – A comprehensive report on SWACO’s activities throughout the preceding year. These reports are intended to give shareholders and other interested people information about SWACO’s activities and financial performance.

- **Case Studies** – Brief summary reports that describe existing examples of best practices in action and their beneficial impacts. Case Studies will draw from SWACO’s programs as well as other local, state, and national programs.
- **Collateral Materials** – Produce and disseminate educational collateral materials that can be ordered by, and delivered to, SWACO stakeholders. These materials will describe SWACO’s diversion programs.
- **Digital Communications** – Publishing quarterly digital newsletters and other bulletins that provide up-to-date information on activities and events taking place within the District and at SWACO. SWACO classifies subscribers into target groups (residents, schools, industries, institutional and commercial businesses, municipalities, community leaders and elected officials), so targeted information can be sent to the audience with which it will serve the deepest impact for them. Specialized bulletins may be created to reach target audiences, such as, “Recycling at Home” for residents, “Recycling at School” for teachers and students, and “Recycling at Work” for businesses.
- **Digital Tool Kits** – Customizable flyers, labels and other materials that increase awareness of waste diversion programs. The tool kit elements would have a consistent design element but could be easily tailored to reflect specific items included or not included in a residential, school or business recycling program by dropping and dragging recyclable materials. Stakeholders can upload their logos and contact information to easily customize. SWACO’s logo and/or website would be added discretely as an unchangeable feature.
- **District-wide Education Campaign** – A large-scale, multi-year public education campaign that establishes clear messaging on the importance of waste reduction and diversion (reuse, recycling, composting, etc.) to influence behavior change. Campaign topics will align with other strategic programs and initiatives included in Appendix I and through market research. Printed versions of the educational materials (e.g., flyers, postcards and magnets) will be made available to pilot Communities. Electronic versions of materials will be made available to all Residents in the District via the SWACO website. Multiple media outlets will be used, such as, billboards, radio ads, print, social medial, and other specialized approaches. Data collection and surveys will be used to measure and track results. All information produced and provided to stakeholders can be available via their website which could include recycling information, additional avenues for waste reduction, reuse and recycling and links to sites with supplemental information.

- **Earned Media** – Creating opportunities to share newsworthy stories about SWACO and its stakeholders. Pitching waste diversion stories to media outlets that are visual and/or entrepreneurial are usually well received.
- **Informational Presentations** – Provide presentations customized for the audience that is requesting the presentation.
- **Landfill Tours** – Tours of the Franklin County Sanitary Landfill are available to school groups, clubs, organizations, and the general public. The presentation consists of a preliminary discussion and slide show that outlines the engineering, regulations and monitoring of a modern day sanitary landfill. Visitors will also learn about diversion, beneficial use of closed landfill sites, the difficulty of siting a sanitary landfill and the future outlook for waste disposal in Franklin County.
- **Market Research** – A range of formal and informal research activities (demographic inquiries, focus groups, etc.) that allow SWACO to better understand the outreach and education challenges and opportunities faced by these stakeholders, to incorporate best practices and to benchmark itself to similar Districts nationally and regionally.
- **Meetings, Special Events and Webinars** – A range of in-person and virtual events ranging from informal peer to peer discussions, planned roundtables and recognition events to business symposiums and web-based seminars where topics can include best practice, contract assistance, information on local/national trends.
- **Paid Media** – Promotional advertising for ongoing programs, special initiatives, and public special collection events (e.g., pharmaceutical take-back days, HHW drives, political sign drives) sponsored by SWACO. Promotions may include ads in local newspapers, social media, digital communications and other outlets.
- **Recognition Program** – A program to recognize leadership in waste reduction and diversion. Potential exists for SWACO to either nominate an entity or to allow them to self-nominate via social media or through an online nomination process. Once the nomination structure is in place, SWACO would push details out to the media, generate social media posts and place advertisements. This will bring positive attention to those entities doing the right thing and encouraging others to do the same. Winners could be announced at an event which would give SWACO a format to reach community leaders face to face and publicly recognize their efforts.

- **Reuse and Recycling Directory** – An online database that will allow the public to search for waste diversion information. The directory will clarify what is and is not reusable, recyclable and/or compostable within the District; and where to do so (curbside, drop-off locations, store take-back programs, special waste disposal, etc.). This directory would also give measurement information about web engagement and could be linked back to the district-wide education campaign.
- **Social Media** – SWACO’s social media presence includes Twitter (546 followers), Facebook (185 likes), LinkedIn (118 followers); YouTube (3,494 views), and Google+ (51,500 views). There is potential for increasing reach to target audiences via social media through regular updates, engaging content and a friendly voice. SWACO could create sample social media posts of waste diversion tips and provide these to stakeholders.
- **Tabling** – Hosting a table/booth in order to display educational materials and promotional items that encourage waste diversion (reusable bags, recycled-content supplies).
- **Targeted Outreach Campaign** – An activity that raises awareness of SWACO’s programs and services within a specific sector. The targeted outreach campaign can use a combination of digital, social, earned, and paid media advertising to raise awareness and promote available programs.
- **Workshops** – In-person seminars that offer insight into a particular issue that is important to a target audience and/or allows SWACO to highlight its programming.



# APPENDIX M

## WASTE MANAGEMENT CAPACITY ANALYSIS





**APPENDIX M. WASTE MANAGEMENT CAPACITY ANALYSIS**

**A. Access to Publicly-Available Landfill Facilities**

The Franklin County Sanitary Landfill is owned and operated by SWACO and provides the majority of solid waste disposal capacity needed each year. The landfill is the largest publicly operated landfill in Ohio. In the reference year (2014), the landfill disposed at least 97 percent of the total waste sent for disposal. At the end of 2014, the landfill was estimated to have more than 24 years of remaining capacity based upon the current rate of landfill airspace used. (See Table M-1.) The counties to the southeast of Franklin County also have considerable disposal capacity available at landfills which have historically accepted 10 to 15 percent of the District’s direct-haul waste for disposal. As a result, the District has concluded that adequate landfill capacity is available to serve the needs of the District for the entire planning period.

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

Facility	Location	Years of Remaining Capacity
<b>In-District</b>		
Franklin County Sanitary Landfill	Franklin County, OH	24.2
<b>Out-of-District</b>		
Pine Grove Regional Facility	Fairfield County, OH	72.6
Beech Hollow Landfill	Jackson County, OH	58.3
Suburban Landfill, Inc.	Perry County, OH	34.3
<b>Out-of-State</b>		
None		

Source(s) of Information: Ohio EPA Facility Data, 2014.

The District has ample disposal capacity; therefore, Tables M-2 and M-3 have been omitted.

**B. Access to Captive Landfill Facilities**

No captive landfills exist within the District.

**C. Access to Processing Capacity for Recovered Materials**

There was ample processing capacity for recovered materials during the reference year (2014). Existing processors are expected to continue operating. In the event that a major processor located in the District ceases operations during the planning period, SWACO’s

centralized location in the State of Ohio is beneficial, as there are many alternative processors located throughout the region.

#### D. Incinerators and Energy Recovery Facilities

The District sent less than 1,000 tons of waste to medical waste treatment facilities and one energy recovery facility in Indiana during the reference year (2014). It is expected that these facilities (or similar facilities) will continue to provide necessary capacity to process these types of waste. In addition, the amount of waste processed by these facilities is less than 0.1% of the total waste disposal. At this time, incinerator and other energy recovery facilities are not incorporated into this Plan. However, SWACO will carefully evaluate future opportunities for new technologies that efficiently manage waste and create energy from waste.

**Table M-4. Incinerators and Energy Recovery Facilities Used by the District in the Reference Year**

Facility Name	State	Type of Facility	Waste Processed from the District
<b><i>In-District</i></b>			
None	Ohio		
<b><i>Out-of-District</i></b>			
None	Ohio		
<b><i>Out-of-State</i></b>			
Indianapolis Resource Recovery Facility	Indiana	Energy Recovery	891.79
MedAssure of Indiana Treatment Facility	Indiana	Medical Waste Treatment	83.54
Tradebe Treatment & Recycling	Indiana	Hazardous Waste Treatment	21.48
Stericycle Solid Waste Processing Facility	Indiana	Medical Waste Treatment	0.06
<b>Total</b>			<b>996.87</b>

Source(s) of Information: SWACO 2014 Annual District Report



# APPENDIX N

## EVALUATING GREENHOUSE GAS EMISSIONS



## APPENDIX N EVALUATING GREENHOUSE GAS EMISSIONS

Greenhouse gas (GHG) emissions associated with solid waste management activities were estimated for the District using U.S. Environmental Protection Agency’s Waste Reduction Model (WARM). The WARM was applied to reference year data and data projected for the sixth year of the planning period, or year 2023. Table N-1 shows the waste categories as well as the amounts recycled, landfilled and composted which were entered into the model. Both R/C waste and industrial waste have been included in this analysis, and sources of waste or recyclables have been combined as necessary in order to create waste category totals corresponding to input entries available in the WARM. For instance, the “Mixed Recyclables” waste category in Table N-1 represents the sum of the estimated tonnages for the following materials:

- HHW
- Used motor oil
- Electronics
- Batteries
- Textiles
- Wood
- Commingled recyclables
- Other

**Table N-1. Tons of Solid Waste Applied to WARM**

Waste Category	2014 (Reference Year)			2023		
	Recycled	Landfilled	Composted	Recycled	Landfilled	Composted
Mixed metals	52,775	-	-	238,719	-	-
Glass	14,183	-	-	35,375	-	-
Corrugated Containers	182,150	-	-	249,418	-	-
Mixed Paper	102,882	-	-	169,261	-	-
Yard Trimmings	-	-	232,814	-	-	199,989
Food Waste	-	-	6,805	-	-	18,531
Mixed Recyclables	33,812	-	-	32,166	-	-
Mixed Plastics	8,679	-	-	19,780	-	-
Scrap tires	18,833	-	-	18,455	-	-
Mixed waste	-	1,022,595	-	-	971,198	-

The top half of Table N-2 shown below provides the results from the WARM assuming that all waste generated in the reference year is disposed in landfills. The model estimates a net production of 277 metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>E) using this assumption which is characterized as the baseline scenario. The second half of Table N-2 represents the

actual amounts recycled, composted and landfilled in 2014, and is termed the alternative scenario. The alternative scenario results in a net generation of -1,196,457 MTCO<sub>2</sub>E.

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

**GHG Emissions from Baseline Waste Management (MTCO<sub>2</sub>E):**

**277**

Material	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total MTCO <sub>2</sub> E
Glass	-	14,183.0	-	NA	NA	287
Corrugated Containers	-	182,150.0	-	NA	NA	(24,633)
Yard Trimmings	NA	232,814.0	-	-	-	(63,508)
Mixed Paper (general)	-	102,882.0	-	NA	NA	(21,678)
Mixed Metals	-	52,775.0	-	NA	NA	1,069
Mixed Plastics	-	8,679.0	-	NA	NA	176
Mixed Recyclables	-	33,812.0	-	NA	NA	(9,111)
Food Waste	NA	6,805.0	-	-	-	2,338
Mixed MSW	NA	1,022,595.0	-	NA	NA	114,956
Tires	-	18,833.0	-	NA	NA	381

**GHG Emissions from Alternative Waste Management Scenario (MTCO<sub>2</sub>E):**

**(1,196,457)**

Material	Tons Source Reduced	Tons Recycled	Tons Landfilled	Tons Combusted	Tons Composted	Tons Anaerobically Digested	Total MTCO <sub>2</sub> E
Glass	-	14,183.0	-	-	NA	NA	(3,922)
Corrugated Containers	-	182,150.0	-	-	NA	NA	(568,429)
Yard Trimmings	NA	NA	-	-	232,814.0	-	(34,063)
Mixed Paper (general)	-	102,882.0	-	-	NA	NA	(363,256)
Mixed Metals	-	52,775.0	-	-	NA	NA	(229,066)
Mixed Plastics	-	8,679.0	-	-	NA	NA	(8,877)
Mixed Recyclables	NA	33,812.0	-	-	NA	NA	(95,518)
Food Waste	-	NA	-	-	6,805.0	-	(1,198)
Mixed MSW	NA	NA	1,022,595.0	-	-	NA	114,956
Tires	-	18,833.0	-	-	NA	NA	(7,084)

Combining the results from the two scenarios shows the GHG reductions within each waste category which are achieved by recycling and composting compared to landfilling all of the waste stream. (See Table N-3.) The total GHG reductions are 1,196,734 MTCO<sub>2</sub>E.

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

Waste Category	Difference Between Scenarios in MTCO <sub>2</sub> E (Alternative - Baseline)
Mixed Metals - <i>Recycled</i>	-230,135
Glass - <i>Recycled</i>	-4,209
Corrugated Containers - <i>Recycled</i>	-543,796
Mixed Paper - <i>Recycled</i>	-341,577
Yard Trimmings - <i>Composted</i>	29,444
Food Waste - <i>Composted</i>	-3,535

Waste Category	Difference Between Scenarios in MTCO <sub>2</sub> E (Alternative - Baseline)
Mixed Recyclables - <i>Recycled</i>	-86,407
Mixed Plastics - <i>Recycled</i>	-9,053
Scrap Tires - <i>Recycled</i>	-7,466
Mixed Waste - <i>Landfilled</i>	0
<b>Net Totals</b>	<b>-1,196,734</b>

**Note:** "MTCO<sub>2</sub>E" means metric tons of carbon dioxide equivalent.

The analysis described above has also been conducted for year six of the planning period, or year 2023. The following table shows that the net GHG reductions in 2023 by recycling are more than 2,452,000 MTCO<sub>2</sub>E.

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

Waste Category	Difference Between Scenarios in MTCO <sub>2</sub> E (Alternative - Baseline)
Mixed Metals - <i>Recycled</i>	-1,040,977
Glass - <i>Recycled</i>	-10,498
Corrugated Containers - <i>Recycled</i>	-744,620
Mixed Paper - <i>Recycled</i>	-561,962
Yard Trimmings - <i>Composted</i>	25,293
Food Waste - <i>Composted</i>	-9,627
Mixed Recyclables - <i>Recycled</i>	-82,200
Mixed Plastics - <i>Recycled</i>	-20,632
Scrap Tires - <i>Recycled</i>	-7,316
Mixed Waste - <i>Landfilled</i>	0
<b>Net Totals</b>	<b>-2,452,540</b>

The comparison of GHG emissions reductions for the reference year versus year 2023 for the alternative scenarios (i.e., including existing and projected recycling) can be seen in Table N-5. The table suggests that GHG emissions will be reduced by nearly 1,267,000 metric tons of carbon dioxide equivalents (MTCO<sub>2</sub>E) by the year 2023 if the increased recycling and composting and decreased disposal amounts projected in the Plan are achieved.

**Table N-5. Net Reduction in GHG Emissions for Alternative Scenarios: 2014 vs. 2023**

Waste Category	Total MTCO <sub>2</sub> E <sup>1</sup>		
	2014	2023	Difference from 2014 to 2023
Mixed Metals - <i>Recycled</i>	-229,066	-1,036,142	-807,076
Glass - <i>Recycled</i>	-3,922	-9,782	-5,860
Corrugated Containers - <i>Recycled</i>	-568,429	-778,350	-209,921

Waste Category	Total MTCO <sub>2</sub> E <sup>1</sup>		
	2014	2023	Difference from 2014 to 2023
Mixed Paper - <i>Recycled</i>	-363,256	-597,626	-234,371
Yard Trimmings - <i>Composted</i>	-34,063	-29,261	4,803
Food Waste - <i>Composted</i>	-1,198	-3,262	-2,064
Mixed Recyclables - <i>Recycled</i>	-95,518	-90,868	4,650
Mixed Plastics - <i>Recycled</i>	-8,877	-20,232	-11,355
Scrap Tires - <i>Recycled</i>	-7,084	-6,942	142
Mixed Waste - <i>Landfilled</i>	114,956	109,178	-5,778
<b>Net Totals</b>	<b>-1,196,457</b>	<b>-2,463,286</b>	<b>-1,266,829</b>

**Note:** <sup>1</sup>MTCO<sub>2</sub>E means metric tons of carbon dioxide equivalent.

The WARM results shown in this analysis reflect landfill disposal in a facility which include a landfill gas recovery system. The Franklin County Sanitary Landfill, which disposed more than 97 percent of the total amount sent to landfills, utilizes a landfill gas recovery system to produce both CNG and pipeline-quality gas for injection into natural gas delivery systems. It is worth noting that the alternative scenario results for 2014 show that GHG emissions would increase more than 1,184,000 MTCO<sub>2</sub>E, were the Franklin County Landfill without a gas recovery system.



# APPENDIX O

## FINANCIAL DATA





## APPENDIX O FINANCIAL DATA

### A. Funding Mechanisms and Revenue Generated

#### 1. Generation Fee

SWACO levies a five dollar (\$5.00) per ton Generation Fee for solid waste generated within the District. SWACO uses these fees as its funding source for implementing programs and will continue to do so throughout the planning period. Table O-1 shows historical and projected revenues. SWACO estimates tonnage to remain at approximately 1 million tons annually throughout the planning period, resulting in an annual revenue of \$5 million.

**O-1. Generation Fee Schedule and Revenue**

Year	Generation Fee Schedule (\$/ton)	Waste Disposed (tons)	Total Generation Fee Revenue
2010	\$5.00	1,052,999	\$5,264,995
2011	\$5.00	1,010,762	\$5,053,809
2012	\$5.00	983,770	\$4,918,851
2013	\$5.00	1,014,800	\$5,074,001
<b>2014</b>	<b>\$5.00</b>	<b>1,008,982</b>	<b>\$5,044,910</b>
2015	\$5.00	1,051,541	\$5,257,704
2016	\$5.00	1,000,000	\$5,000,000
2017	\$5.00	1,000,000	\$5,000,000
2018	\$5.00	1,000,000	\$5,000,000
2019	\$5.00	1,000,000	\$5,000,000
2020	\$5.00	1,000,000	\$5,000,000
2021	\$5.00	1,000,000	\$5,000,000
2022	\$5.00	1,000,000	\$5,000,000
2023	\$5.00	1,000,000	\$5,000,000
2024	\$5.00	1,000,000	\$5,000,000
2025	\$5.00	1,000,000	\$5,000,000
2026	\$5.00	1,000,000	\$5,000,000
2027	\$5.00	1,000,000	\$5,000,000
2028	\$5.00	1,000,000	\$5,000,000
2029	\$5.00	1,000,000	\$5,000,000
2030	\$5.00	1,000,000	\$5,000,000
2031	\$5.00	1,000,000	\$5,000,000
2032	\$5.00	1,000,000	\$5,000,000

**2. Other Revenue Sources**

Previously, SWACO’s programs have received limited amounts of revenue from other sources. SWACO does not plan to generate material revenue from alternative sources during planning period. The following table presents revenue received from sources other than generation fees.

**Table O-2. Other Revenue and Other Revenue Sources**

	Year	Grants	Recycling Revenue	Gain on Sale of Fixed Assets	Misc. Revenue	Other Revenue Total
First Year of Planning Period →	2010	\$270,629	\$192,020	\$0	\$6,969	\$469,618
	2011	\$0	\$184,030	\$11,655	\$34,936	\$230,621
	2012	\$0	\$159,621	\$0	\$49,910	\$209,531
	2013	\$27,200	\$107,708	\$0	\$204	\$135,112
	<b>2014</b>	<b>\$0</b>	<b>\$30,436</b>	<b>\$14,060</b>	<b>\$0</b>	<b>\$44,496</b>
	2015	\$0	\$16,964	\$0	\$23,796	\$40,759
	2016	\$0	\$0	\$0	\$0	\$0
	2017	\$0	\$0	\$0	\$0	\$0
	X 2018	\$0	\$0	\$0	\$0	\$0
	2019	\$0	\$0	\$0	\$0	\$0
	2020	\$0	\$0	\$0	\$0	\$0
	2021	\$0	\$0	\$0	\$0	\$0
	2022	\$0	\$0	\$0	\$0	\$0
	2023	\$0	\$0	\$0	\$0	\$0
	2024	\$0	\$0	\$0	\$0	\$0
	2025	\$0	\$0	\$0	\$0	\$0
	2026	\$0	\$0	\$0	\$0	\$0
	2027	\$0	\$0	\$0	\$0	\$0
	2028	\$0	\$0	\$0	\$0	\$0
	2029	\$0	\$0	\$0	\$0	\$0
	2030	\$0	\$0	\$0	\$0	\$0
	2031	\$0	\$0	\$0	\$0	\$0
	2032	\$0	\$0	\$0	\$0	\$0

Historical revenue sources in Table O-2 include the following:

- **Grants** – SWACO has acted as a sponsor and pass-through agent for grant recipients through Ohio Department of Natural Resources (ODNR)/Ohio EPA Grant Program.

- **Recycling Revenue** – SWACO has received revenue from recyclable materials recovered through the Recycling Drop-off Program. This contract recently expired and a new contract has been executed with SWACO-paid processing fees and the potential for variable revenue sharing based on the commodities markets. Given the current status of the commodity markets, SWACO does not plan to generated revenue through this contract.
- **Gains on Sale of Fixed Assets** – This is comprised of funds generated from the sale of assets, such as vehicles that were no longer necessary for programs.
- **Other Revenue** – Miscellaneous revenues sources include the sale of sponsorships for recognition ceremonies and reimbursement of funds contributed to dumpsite clean-up costs.

SWACO’s total revenue from Generation Fees and other revenue sources is presented in the following table.

**Table O-3. Total Revenue**

	Year	Generation Fees	Other Revenue	Total Revenue
	2010	\$5,264,995	\$469,618	\$5,734,613
	2011	\$5,053,809	\$230,621	\$5,284,430
	2012	\$4,918,851	\$209,531	\$5,128,382
	2013	\$5,074,001	\$135,112	\$5,209,113
	<b>2014</b>	<b>\$5,044,910</b>	<b>\$44,496</b>	<b>\$5,089,406</b>
	2015	\$5,257,704	\$40,759	\$5,298,463
	2016	\$5,000,000	\$0	\$5,000,000
	2017	\$5,000,000	\$0	\$5,000,000
First Year of Planning Period → X	2018	\$5,000,000	\$0	\$5,000,000
	2019	\$5,000,000	\$0	\$5,000,000
	2020	\$5,000,000	\$0	\$5,000,000
	2021	\$5,000,000	\$0	\$5,000,000
	2022	\$5,000,000	\$0	\$5,000,000
	2023	\$5,000,000	\$0	\$5,000,000
	2024	\$5,000,000	\$0	\$5,000,000
	2025	\$5,000,000	\$0	\$5,000,000
	2026	\$5,000,000	\$0	\$5,000,000
	2027	\$5,000,000	\$0	\$5,000,000
	2028	\$5,000,000	\$0	\$5,000,000
	2029	\$5,000,000	\$0	\$5,000,000
	2030	\$5,000,000	\$0	\$5,000,000
	2031	\$5,000,000	\$0	\$5,000,000
	2032	\$5,000,000	\$0	\$5,000,000

**3. *Explanation of Projected Expenses***

The projected budget, shown in Table O-4, was developed based on programmatic needs identified in Appendices H, I and L, and program modeling based on existing programs and best practices. SWACO projects an annual revenue of \$5,000,000. The budget was designed to keep expenses close to the estimated annual revenue amount although SWACO intends to use its existing carry over balance to fund expenses that are above the annual revenue amount. If for some reason expenses do not reach the annually budgeted amount, funds will be deposited in the carryover balance.

Table O-4. Costs of Implementing Plan

Line #	Category/Program	2010	2011	2012	2013	2014	2015	2016	2017
1	<b>1. Plan Monitoring/Prep.</b>	\$413,925	\$32,350	\$19,680	\$12,830	\$18,740	\$74,217	\$125,000	\$20,000
1.a	a. Plan Preparation	\$413,925	\$32,350	\$19,680	\$12,830	\$18,740	\$74,217	\$110,000	\$10,000
1.b	b. Plan Monitoring	\$0	\$0	\$0	\$0	\$0	\$0	\$15,000	\$10,000
1.c	c. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	<b>2. Plan Implementation</b>	\$4,619,170	\$4,677,330	\$4,709,859	\$4,590,780	\$4,010,863	\$3,779,828	\$3,870,000	\$4,805,500
2.a	a. District Administration	\$1,062,533	\$1,104,814	\$1,158,206	\$1,050,127	\$830,897	\$714,371	\$785,000	\$1,145,500
2.a.1	Personnel	\$968,981	\$996,310	\$1,038,711	\$865,366	\$649,863	\$471,494	\$635,000	\$800,000
2.a.2	Office Overhead	\$13,020	\$24,111	\$36,542	\$100,638	\$91,602	\$142,652	\$90,000	\$305,500
2.a.3	Other	\$80,531	\$84,393	\$82,954	\$84,124	\$89,431	\$100,225	\$60,000	\$40,000
2.b	b. Facility Operation	\$1,485,003	\$1,475,828	\$1,485,000	\$1,485,000	\$1,485,000	\$1,485,272	\$0	\$0
2.b.1	MRF/Recycling Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.2	Compost	\$1,485,003	\$1,475,828	\$1,485,000	\$1,485,000	\$1,485,000	\$1,485,272	\$0	\$0
2.b.3	Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.4	Special Waste	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.c	c. Landfill Closure/Post-Closure	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.d	d. Recycling Collection	\$801,646	\$937,976	\$913,590	\$974,559	\$923,342	\$855,515	\$895,000	\$965,000
2.d.1	Curbside	\$83,034	\$76,283	\$61,317	\$29,828	\$64,706	\$111,597	\$65,000	\$65,000
2.d.2	Drop-off	\$718,612	\$861,692	\$852,273	\$944,732	\$858,636	\$743,918	\$800,000	\$800,000
2.d.3	Combined Curbside/Drop-off	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.d.4	Multi-family	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,000
2.d.5	Business/Institutional	\$0	\$0	\$0	\$0	\$0	\$0	\$30,000	\$80,000
2.d.6	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e	e. Special Collections	\$279,412	\$235,936	\$307,437	\$345,706	\$398,685	\$408,201	\$440,000	\$480,000
2.e.1	Tire Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.2	HHW Collection	\$279,412	\$235,936	\$307,437	\$345,706	\$398,685	\$408,201	\$440,000	\$480,000
2.e.3	Electronics Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.4	Appliance Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.5	Other Collection Drives	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.f	f. Yard Waste/Other Organics	\$0	\$0	\$0	\$0	\$0	\$0	\$1,485,000	\$1,485,000
2.g	g. Education/Awareness	\$693,633	\$887,510	\$811,485	\$633,725	\$360,328	\$315,800	\$110,000	\$315,000
2.g.1	Education Staff	\$693,633	\$887,510	\$811,485	\$633,725	\$360,328	\$315,800	\$0	\$0
2.g.2	Advertisement/Promotion	\$0	\$0	\$0	\$0	\$0	\$0	\$50,000	\$140,000
2.g.3	Other	\$0	\$0	\$0	\$0	\$0	\$0	\$60,000	\$175,000
2.h	h. Recycling Market Development	\$275,629	\$10,000	\$13,498	\$27,200	\$0	\$0	\$150,000	\$300,000
2.h.1	Market Development Activities	\$12,060	\$10,000	\$13,498	\$0	\$0	\$0	\$150,000	\$300,000
2.h.2	ODNR pass-through grant	\$263,569	\$0	\$0	\$27,200	\$0	\$0	\$0	\$0
2.i	i. Service Contracts	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.j	j. Feasibility Studies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.k	k. Waste Assessments/Audits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.l	l. Dump Cleanup	\$0	\$0	\$0	\$53,158	\$0	\$0	\$0	\$0
2.m	m. Litter Collection/Education	\$21,314	\$25,268	\$20,642	\$21,303	\$12,611	\$669	\$5,000	\$10,000
2.n	n. Emergency Debris Management	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.o	o. Loan Payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.p	p. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$105,000
3	<b>3. Health Dept. Enforcement</b>								
	<i>Health Department Name:</i>	None							
4	<b>4. County Assistance</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.a	a. Maintaining Roads	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.b	b. Maintaining Public Facilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.c	c. Providing Emergency Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.d	d. Providing Other Public Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	<b>5. Well Testing</b>	\$0	\$3,278	\$3,278	\$0	\$3,442	\$2,807	\$5,000	\$5,000
6	<b>6. Out-of-State Waste Inspection</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	<b>7. Open Dump, Litter Law Enforcement</b>	\$369,460	\$379,903	\$383,104	\$391,878	\$403,904	\$350,063	\$465,000	\$458,000
7.a	a. Health Departments	\$66,658	\$66,543	\$63,009	\$87,365	\$63,883	\$59,063	\$40,000	\$38,000
7.b	b. Local Law Enforcement	\$220,884	\$224,997	\$213,897	\$223,750	\$259,055	\$247,045	\$275,000	\$260,000
7.c	c. Other	\$81,918	\$88,363	\$106,198	\$80,764	\$80,965	\$43,955	\$150,000	\$160,000
8	<b>8. Health Department Training</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	<b>9. Municipal/Township Assistance</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.b	b. Maintaining Public Facilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.c	c. Providing Emergency Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.d	d. Providing other Public Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	<b>10. Compensation to Affected Community (ORC Section 3734.35)</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<b>***Total Expenses***</b>	\$5,402,555	\$5,092,861	\$5,115,921	\$4,995,488	\$4,436,949	\$4,206,915	\$4,465,000	\$5,288,500

Line #	Category/Program	2018	2019	2020	2021	2022	2023	2024	2025
1	<b>1. Plan Monitoring/Prep.</b>	\$10,000	\$10,000	\$10,000	\$45,000	\$60,000	\$10,000	\$10,000	\$10,000
1.a	a. Plan Preparation	\$0	\$0	\$0	\$35,000	\$50,000	\$0	\$0	\$0
1.b	b. Plan Monitoring	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
1.c	c. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	<b>2. Plan Implementation</b>	\$4,583,777	\$4,572,834	\$4,557,694	\$4,618,378	\$4,619,912	\$4,652,329	\$4,652,329	\$4,652,329
2.a	a. District Administration	\$1,173,777	\$1,202,834	\$1,232,694	\$1,263,378	\$1,294,912	\$1,327,329	\$1,327,329	\$1,327,329
2.a.1	Personnel	\$824,000	\$848,720	\$874,182	\$900,407	\$927,419	\$955,242	\$955,242	\$955,242
2.a.2	Office Overhead	\$309,777	\$314,114	\$318,512	\$322,971	\$327,493	\$332,087	\$332,087	\$332,087
2.a.3	Other	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
2.b	b. Facility Operation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.1	MRF/Recycling Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.2	Compost	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.3	Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.4	Special Waste	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.c	c. Landfill Closure/Post-Closure	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.d	d. Recycling Collection	\$700,000	\$735,000	\$705,000	\$735,000	\$705,000	\$705,000	\$705,000	\$705,000
2.d.1	Curbside	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000
2.d.2	Drop-off	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
2.d.3	Combined Curbside/Drop-off	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.d.4	Multi-family	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
2.d.5	Business/Institutional	\$90,000	\$120,000	\$90,000	\$120,000	\$90,000	\$90,000	\$90,000	\$90,000
2.d.6	Other	\$10,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
2.e	e. Special Collections	\$440,000	\$455,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000
2.e.1	Tire Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.2	HHW Collection	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000
2.e.3	Electronics Collection	\$0	\$15,000	\$0	\$0	\$0	\$0	\$0	\$0
2.e.4	Appliance Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.5	Other Collection Drives	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.f	f. Yard Waste/Other Organics	\$1,545,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000
2.g	g. Education/Awareness	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000
2.g.1	Education Staff	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.g.2	Advertisement/Promotion	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000
2.g.3	Other	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000
2.h	h. Recycling Market Development	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000
2.h.1	Market Development Activities	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000
2.h.2	ODNR pass-through grant	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.i	i. Service Contracts	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.j	j. Feasibility Studies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.k	k. Waste Assessments/Audits	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.l	l. Dump Cleanup	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.m	m. Litter Collection/Education	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
2.n	n. Emergency Debris Management	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.o	o. Loan Payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.p	p. Other	\$105,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000
3	<b>3. Health Dept. Enforcement</b>								
	<i>Health Department Name:</i>								
4	<b>4. County Assistance</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.a	a. Maintaining Roads	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.b	b. Maintaining Public Facilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.c	c. Providing Emergency Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.d	d. Providing Other Public Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	<b>5. Well Testing</b>	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
6	<b>6. Out-of-State Waste Inspection</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	<b>7. Open Dump, Litter Law Enforcement</b>	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000
7.a	a. Heath Departments	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000
7.b	b. Local Law Enforcement	\$260,000	\$260,000	\$260,000	\$260,000	\$260,000	\$260,000	\$260,000	\$260,000
7.c	c. Other	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000
8	<b>8. Heath Department Training</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	<b>9. Municipal/Township Assistance</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.b	b. Maintaining Public Facilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.c	c. Providing Emergency Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.d	d. Providing other Public Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	<b>10. Compensation to Affected Community (ORC Section 3734.35)</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<b>***Total Expenses***</b>	\$5,056,777	\$5,045,834	\$5,030,694	\$5,126,378	\$5,142,912	\$5,125,329	\$5,125,329	\$5,125,329

Line #	Category/Program	2026	2027	2028	2029	2030	2031	2032
1	<b>1. Plan Monitoring/Prep.</b>	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
1.a	a. Plan Preparation	\$0	\$0	\$0	\$0	\$0	\$0	\$0
1.b	b. Plan Monitoring	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
1.c	c. Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2	<b>2. Plan Implementation</b>	\$4,652,329	\$4,652,329	\$4,652,329	\$4,652,329	\$4,652,329	\$4,652,329	\$4,652,329
2.a	a. District Administration	\$1,327,329	\$1,327,329	\$1,327,329	\$1,327,329	\$1,327,329	\$1,327,329	\$1,327,329
2.a.1	Personnel	\$955,242	\$955,242	\$955,242	\$955,242	\$955,242	\$955,242	\$955,242
2.a.2	Office Overhead	\$332,087	\$332,087	\$332,087	\$332,087	\$332,087	\$332,087	\$332,087
2.a.3	Other	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
2.b	b. Facility Operation	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.1	MRF/Recycling Center	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.2	Compost	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.3	Transfer	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.b.4	Special Waste	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.c	c. Landfill Closure/Post-Closure	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.d	d. Recycling Collection	\$705,000	\$705,000	\$705,000	\$705,000	\$705,000	\$705,000	\$705,000
2.d.1	Curbside	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000	\$65,000
2.d.2	Drop-off	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
2.d.3	Combined Curbside/Drop-off	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.d.4	Multi-family	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000	\$35,000
2.d.5	Business/Institutional	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000
2.d.6	Other	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
2.e	e. Special Collections	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000
2.e.1	Tire Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.2	HHW Collection	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000	\$440,000
2.e.3	Electronics Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.4	Appliance Collection	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.e.5	Other Collection Drives	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.f	f. Yard Waste/Other Organics	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000	\$1,515,000
2.g	g. Education/Awareness	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000	\$270,000
2.g.1	Education Staff	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.g.2	Advertisement/Promotion	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000	\$140,000
2.g.3	Other	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000	\$130,000
2.h	h. Recycling Market Development	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000
2.h.1	Market Development Activities	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000	\$340,000
2.h.2	ODNR pass-through grant	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.i	i. Service Contracts	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.j	j. Feasibility Studies	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.k	k. Waste Assessments/Audits	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.l	l. Dump Cleanup	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.m	m. Litter Collection/Education	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000
2.n	n. Emergency Debris Management	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.o	o. Loan Payment	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2.p	p. Other	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000
3	<b>3. Health Dept. Enforcement</b>							
	<i>Health Department Name:</i>							
4	<b>4. County Assistance</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.a	a. Maintaining Roads	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.b	b. Maintaining Public Facilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.c	c. Providing Emergency Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0
4.d	d. Providing Other Public Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0
5	<b>5. Well Testing</b>	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
6	<b>6. Out-of-State Waste Inspection</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
7	<b>7. Open Dump, Litter Law Enforcement</b>	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000	\$458,000
7.a	a. Health Departments	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000
7.b	b. Local Law Enforcement	\$260,000	\$260,000	\$260,000	\$260,000	\$260,000	\$260,000	\$260,000
7.c	c. Other	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000	\$160,000
8	<b>8. Health Department Training</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	<b>9. Municipal/Township Assistance</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.a	a. Maintaining Roads	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.b	b. Maintaining Public Facilities	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.c	c. Providing Emergency Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9.d	d. Providing other Public Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0
10	<b>10. Compensation to Affected Community (ORC Section 3734.35)</b>	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	<b>***Total Expenses***</b>	\$5,125,329	\$5,125,329	\$5,125,329	\$5,125,329	\$5,125,329	\$5,125,329	\$5,125,329

The explanations below correspond with Table O-4. The reader should note that SWACO has revised the way it categorizes its projected expenditures for more accurate accounting for the purpose of the Plan and future reporting. The categorization of historical amounts in Table O-4 are the results of changes to the reporting requirements to the Ohio EPA.

After review, it was determined inflation would not have impacts on general programs that SWACO offers. An inflation rate of 1.4% was applied to office overhead expenses throughout each year of the planning period. An annual 3% increase was also applied to personnel expenses for merit and benefit increases.

#### **4. *Plan Preparation and Monitoring***

##### **1.a Plan Preparation**

SWACO has allocated \$85,000 to work with consultants to develop the next Solid Waste Management Plan which will begin during 2021 or plan year 7 on Table O-4.

##### **1.b Plan Monitoring**

Based on historical expenses, SWACO estimates approximately \$10,000 annually for outside assistance to help with Plan implementation monitoring and reporting.

#### **5. *Plan Implementation***

##### **2.a District Administration**

- 2.a.1 Personnel – Beginning in 2017, SWACO budgeted personnel costs (includes salaries and benefits) for eight administrative program staff. Two new positions expected include an Outreach Specialist to provide general support and community engagement assistance, and a Program Administrator to focus on developing and implementing programs targeting the commercial and industrial sectors. Projected expenses include annual merit and benefit increases of 3%.
- 2.a.2 Office Overhead – SWACO’s overhead expenses include allocated administrative costs, in the amount of \$200,000, to provide support functions from other departments within SWACO which include finance, HR, IT and legal staff. SWACO recently revised the way it accounts for these expenses resulting in an increased cost related to implementation of SWACO’s waste diversion programs. Other office overhead, at a cost of \$105,500, include direct expenses for utilities, office space, software, vehicle maintenance, mileage reimbursement, printing, and shipping.



Office overhead expenses have an inflation rate of 1.4% projected throughout the plan period.

- 2.a.3 Other Expenses – Other administrative expenses, in the amount of \$40,000 annually, includes staff training and professional development, memberships and subscriptions, travel expenses, and internship stipends.

#### 2.b Facility Operation

- SWACO does not currently operate or plan to use generation fee funds to operate any of the facilities under this section. Previously, SWACO accounted for funding its yard waste composting program under this category. Since SWACO does not own or operate these facilities, the expenses for the yard waste program will now be accounted for under the line item 2.f Yard Waste.

#### 2.d Recycling Collection

- 2.d.1 Curbside – Through the Community Contract Assistance program, SWACO provides contract technical assistance to its communities for curbside collection service that includes solid waste, recycling and yard waste. To assist with implementing these services, SWACO contracts with a law firm that specializes in solid waste issues to provide legal support. The projected annual cost for this program is \$65,000. This cost is designed to address the fluctuating needs of the communities currently participating in consortiums as well as costs for additional communities that may decide to join in the consortium process.
- 2.d.2 Recycling Drop-Off – SWACO owns and operates a Recycling Drop-Off program servicing locations within the District. Expenses include labor costs, vehicle maintenance, depreciation and indirect operating costs, equipment costs and recycling processing fees. Recycling processing fees are a new expense to this program and are estimated not to exceed \$135,000 annually. The recycling processing fee may reduce if the market for recycling commodities improves. This would result in a reduced cost to the program. Year 2017 includes \$40,000 to perform an evaluation of the drop-off program to identify opportunities for increasing program efficiencies and cost savings. During 2017, program changes are expected to take place. Program costs are expected to be reduced in 2018 and not to exceed \$500,000 annually throughout the remainder of the planning period. Program costs are an estimate based on projected program changes at a per ton operating cost.

- 2.d.4 Multi-family – Multi-family recycling was identified as a programmatic need during the strategic evaluation process. The Multi-Family Diversion Assistance program slated to begin analysis and program design in 2017 to include stakeholder engagement and evaluation of multi-family recycling needs within the District and program development. \$20,000 has been allocated to work with consultants for analysis and pilot programming. \$35,000 is allocated as the annual program cost, beginning in 2018. Types of expenses may include: start-up funds, rebate incentives, consortium collaboration and educational materials and tool kits.
- 2.d.5 Business/Institutional – Developing waste reduction and diversion programs for businesses and institutions is one of SWACO’s biggest opportunities. Commercial/Institutional Sector Technical and Diversion Assistance program will begin in 2017 with \$25,000 for research and program development and an additional \$25,000 for program startup costs and piloting. Beginning in 2018, program costs are expected to be \$90,000 a year. Program costs include:
  - Consultation: Consultation services, signage and printed materials.
  - Contract Assistance: Expanding recycling programs through consortiums.
  - Business Forums: Educational workshops, webinars, and tool kits. In 2019, \$30,000 will be used for hosting a business recycling symposium that will focus on engaging industry and business sector participants to increase waste reduction, reuse and recycling through sharing of information and best practices.
  - Business Recognition: Recognition programs and promotional expenses.
  - Economic Incentives and other: Rebates for recycling bins and containers and incentive programs for start-up recycling services.
  - Also included within this line item is funding for school consortiums. \$30,000 will be used in 2017 to continue this existing program. \$30,000 is earmarked for 2021 for the school consortium cycle.
- 2.d.6 Other – Other is identified as Industrial Sector Technical Assistance programming for the industrial sector. Beginning in 2018, \$10,000 will be used for program research and development. This will include convening stakeholders within the industrial sector to assist in the formation of program design. \$15,000 will be designated for industrial programming starting in 2019 throughout the rest of the planning period. Program costs may include educational webinars, tool kits, discussion forums,

consultations, rebate recycling programs, recognition program and promotional expenses.

### 2.e Special Collections

- 2.e.2 HHW Collection – SWACO will continue to fund an HHW collection program during the planning period. SWACO will evaluate the existing program to identify opportunities to enhance or modify the program in order to increase its impact and efficiency. A total of \$40,000 is budgeted in 2017 for the program evaluation process. The cost and expenditures for this program are subject to change based on the results of the analysis and revising of contracts with service providers due to expire during the planning period. Collection program costs projected for the planning period include:
  - \$360,000 vendor contract for collecting and processing materials
  - \$50,000 facility lease
  - \$10,000 for reimbursing communities hosting/assisting mobile HHW collection events
  - \$20,000 for promotional expenses
- 2.e.3 Electronics Collection – SWACO competitively bids and contracts for electronics recycling collection. One contract is for collection and processing of e-waste generated by government entities and school districts. The other contract is for collection and processing of e-waste at mobile collection events hosted by political entities. SWACO will rebid this service in 2019. \$15,000 is allocated for legal and consulting services.

### 2.f Yard Waste/Organics

SWACO contracts with two yard waste composting businesses to accept yard waste from residents, businesses, and municipalities within the District. One contractor is paid \$1,200,000 annually to accept unlimited yard waste from in-District generators. The other contractor is paid \$285,0000 annually to accept yard waste, with size restrictions, from residence and municipalities within the District. One of the contracts expires in 2022 and the other contract in 2025. Both contracts will be reviewed during the next Solid Waste Management Plan update process.

SWACO's Food Waste Management program will conduct a food waste research slated in 2018 and budgeted at \$60,000. The study will include facilitated discussions with stakeholders and an economic analysis to result in a comprehensive road map for managing food waste in Central Ohio. Starting in

2019, \$30,000 is allocated for implementing food waste strategies resultant of the study.

### 2.g Education/Awareness

- 2.g.2 Advertisement and Promotion – SWACO is increasing its education and awareness efforts through enhanced advertisement and promotion strategies during the planning period. One of the new mechanisms for accomplishing this will be through the use of annual District-wide educational campaigns. Total annual costs for this campaign will be \$100,000. This will include campaign design, development and paid media. Educational campaigns will focus on topics such as boosting waste reduction, reuse and recycling, food waste prevention and environmentally responsible HHW management. SWACO will continue to promote special community collection events such as the Prescription Drug Take-back days and Political Sign Collection events. \$20,000 is allocated annually for promoting these community take-back events through paid media. \$10,000 is budgeted annually for sponsoring local events and partnerships, such as the county fair, that promote waste reduction, reuse and recycling messaging. \$10,000 is allocated annually for general graphic design expense.
- 2.g.3 Other – Other education and outreach includes a variety of educational related programming. During 2017, SWACO has budgeted \$40,000 for developing and launching its website redesign which will also include a new easily searchable database of where to reuse and recycle difficult to manage items. SWACO has budgeted \$15,000 in 2017 for conducting general surveys and polls to develop baselines and perform market research and better understand stakeholder needs. Annually budgeted educational activities for the planning period, including 2017, include \$15,000 for tours of the Franklin County Sanitary Landfill which includes school bus reimbursement costs and printing of educational materials. SWACO will also be ramping up educational school programming which will include: \$15,000 for educational curriculum, supplies, and workshops, \$20,000 for providing targeted assistance and funding to the lowest performing schools in the District which may include funding for recycling bins, educational materials, supplies, and campaigns. \$15,000 is also budgeted annually for educational partnership initiatives which focuses on collaborating with local nonprofits and government agencies to joint promote waste reduction, reuse and recycling initiatives. Expenses may include service agreements, supplies, equipment, promotional items, and educational materials.

A total of \$15,000.00 is budgeted annually for increased education and outreach efforts to cities, villages, and townships within the District which includes workshops and educational forums for administrative personnel, tool kits for increasing residential education, and resources for establishing community waste reduction plans. A total of \$20,000 is allocated to enhance recycling and yard waste efforts with targeted underperforming communities.

SWACO will be increasing its outreach and awareness efforts towards residents by providing engagement opportunities at local festivals and events, and will also provide educational workshops that promote waste reduction, reuse and recycling to consumers and to raise awareness about the availability of programs within the District. A sum of \$20,000 is allocated annually for these outreach efforts which includes registration costs, educational materials, supplies, and equipment. \$10,000 is budgeted annually for the development and distribution of an annual report for the District.

## 2.h Recycling Market Development

- 2.h.1 General Market Development Activities – A sum of \$150,000 is allocated for SWACO’s Community Waste Reduction Grant Program. This is a competitive program that is administered annually. Applicants may include municipalities, government agencies, and nonprofits that meet the program requirements. The Event Waste Reduction Grant, another funding opportunity for large-scale public events and venues needing recycling assistance, was launched in 2016 and will continue to be provided during the planning period. A total of \$20,000 will be budgeted annually for this grant. SWACO supports the City of Columbus Environmental Steward Office through a special partnership grant budgeted annually at \$130,000. The Environmental Steward Office provides waste reduction, reuse and recycling education and outreach support to City of Columbus residence and businesses through activities such as the curbside RecyColumbus program, Green Spot program, Green Purge and Recycling on High. Beginning in 2018, SWACO will be launching a Market Development Grant that will be focused on enhancing material collection, remanufacturing or processing of diverted material. An additional \$40,000 will be budgeted annually for this grant.

## 2.m Litter Collection/Education

A sum of \$10,000 is budgeted annually to promote and assist communities with litter prevention and collection efforts. Program costs include litter collection

supplies, support for local community volunteer litter clean-up efforts, and litter prevention awareness materials.

## 2.p Other

Other includes expenses for special projects and initiatives. In 2017, SWACO is budgeting \$50,000 for an economic impact study to research and assess the recycling industry within Central Ohio. A total of \$15,000 is budgeted for upgrading data collection software. In 2018, SWACO is budgeting \$60,000 for a waste characterization study. A sum of \$40,000 is budgeted annually for unplanned special projects and needs that may arise throughout the planning period. Other budgeted expenses include \$5,000 for continued data collection expansion beginning in 2018 and proceeding throughout the planning period.

## **6. Well Testing**

### 5. Well Testing

A total of \$5,000 is budgeted for assisting with monitoring and testing ground water wells near the landfill.

## **7. Open Dump, Litter Law Enforcement**

### 7. Open Dump, Litter Law Enforcement

Budgeting funds SWACO's Environmental Crimes Task Force program which supports the Franklin County Sheriff's Office, Franklin County Public Health, City of Columbus, and the Office of the Franklin County Prosecutor. The Environmental Crimes Task Force program will be evaluated on an annual basis throughout the planning period to determine performance levels and shared costs. Program scope, services and/or funding may change during the planning period based on annual evaluations.

- 7.a Health Departments – SWACO contracts with Franklin County Public Health to support the Environmental Crimes Task Force unit. A total of \$38,000 is budgeted annually for Franklin County Public Health staff support.
- 7.b Local Law Enforcement – SWACO contracts with the Franklin County Sheriff's Office to provide two sheriff's deputies and administrative support to the Environmental Crimes Task Force program. A sum of \$260,000 is budgeted annually to the Franklin County Sheriff's Office.

- 7.c Other – SWACO is budgeting \$65,000 annually to contract with the City of Columbus for a civil inspector to participate in the Environmental Crimes Task Force. SWACO also contracts with the Office of the Franklin County Prosecutor for staff support at an annual expense of \$77,000. Other costs include call center support, educational materials, and program promotion costs with an annual budget of \$18,000.

Table O-5 presents a summary of SWACO’s programs-related budget, including revenue, expenditures and fund balance.

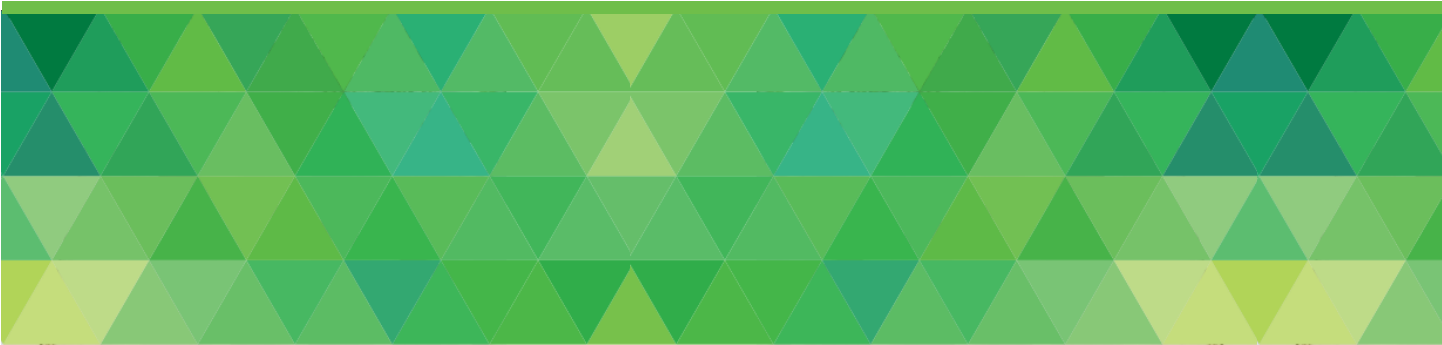
**Table O-5. Programs Budget Summary**

	Year	Revenue	Expenses	Annual Surplus/Deficit	Balance	
First Year of Planning Period →	2009			<b>Ending Balance</b>	\$200,508	
	2010	\$5,734,613	\$5,402,555	\$332,058	\$532,566	
	2011	\$5,284,430	\$5,092,861	\$191,569	\$724,135	
	2012	\$5,128,382	\$5,115,921	\$12,461	\$736,597	
	2013	\$5,209,113	\$4,995,488	\$213,625	\$950,221	
	<b>2014</b>	<b>\$5,089,406</b>	<b>\$4,436,949</b>	<b>\$652,457</b>	<b>\$1,602,678</b>	
	2015	\$5,298,463	\$4,206,915	\$1,091,548	\$2,694,226	
	2016	\$5,000,000	\$4,465,000	\$535,000	\$3,229,226	
	2017	\$5,000,000	\$5,288,500	-\$288,500	\$2,940,726	
	X	2018	\$5,000,000	\$5,056,777	-\$56,777	\$2,883,949
		2019	\$5,000,000	\$5,045,834	-\$45,834	\$2,838,115
		2020	\$5,000,000	\$5,030,694	-\$30,694	\$2,807,421
		2021	\$5,000,000	\$5,126,378	-\$126,378	\$2,681,043
		2022	\$5,000,000	\$5,142,912	-\$142,912	\$2,538,131
		2023	\$5,000,000	\$5,125,329	-\$125,329	\$2,412,802
		2024	\$5,000,000	\$5,125,329	-\$125,329	\$2,287,473
		2025	\$5,000,000	\$5,125,329	-\$125,329	\$2,162,144
		2026	\$5,000,000	\$5,125,329	-\$125,329	\$2,036,815
		2027	\$5,000,000	\$5,125,329	-\$125,329	\$1,911,486
		2028	\$5,000,000	\$5,125,329	-\$125,329	\$1,786,157
	2029	\$5,000,000	\$5,125,329	-\$125,329	\$1,660,828	
	2030	\$5,000,000	\$5,125,329	-\$125,329	\$1,535,499	
	2031	\$5,000,000	\$5,125,329	-\$125,329	\$1,410,170	
	2032	\$5,000,000	\$5,125,329	-\$125,329	\$1,284,841	



**APPENDIX P**

**DESIGNATION**





## APPENDIX P DESIGNATION

### A. Statement Authorizing/Precluding Designation

SWACO’s existing Plan authorizes the Board to designate solid waste facilities.

Authorization to designate solid waste facilities will continue with the approval of this Plan:

“The Board of Trustees of the Solid Waste Authority of Central Ohio (SWACO) is hereby authorized to establish facility designations in accordance with Section 343.014 of the Ohio Revised Code after this plan has been approved by the director of the Ohio Environmental Protection Agency.”

### B. Designated Facilities

The Board exercised the authority to designate in order to ensure that efficient solid waste management services continue to be provided within the District to all residents, businesses and institutions, and to ensure that these services are provided in a cost-effective manner and to protect the health, safety, and welfare of the citizens of the District. SWACO has designated the following facilities being designated: Franklin County Sanitary Landfill, Morse Road Eco-Station and Jackson Pike Transfer Station. The designation requires any individual, public or private corporation, partnership, political subdivision, agency or entity to deliver solid waste generated within the District to either of the designated transfer facilities or the Franklin County Sanitary Landfill. See Table P-1 for the list of designated facilities.

**Table P-1. Designated Solid Waste Facilities**

Facility Name	Location		Facility Type	Year Designated
	County	State		
<b><i>In-District</i></b>				
Franklin Co. Sanitary Landfill	Franklin	Ohio	MSW Landfill	Ongoing
Morse Road Eco-Station	Franklin	Ohio	Transfer Facility	Ongoing
Jackson Pike Transfer Facility	Franklin	Ohio	Transfer Facility	Ongoing
<b><i>Out-of-District</i></b>				
None				
<b><i>Out-of-State</i></b>				
None				

Anyone can apply for a waiver to these designations through a process developed by SWACO. The provisions to obtain a waiver have been enacted by adopting Rule 2-2017, which requires the following:

- **Rule 2-2017: Waiver from Designation.** Any Person or Applicant may request a waiver from the Board authorizing the delivery of all or any portion of the Solid Waste generated within the District to a Solid Waste Facility other than a Designated Solid Waste Facility. The Board may grant a waiver from the obligation to deliver Solid Waste generated within the District to a designated Solid Waste Facility if the Board finds that issuance of a waiver for the requested Solid Waste materials : (i) is not inconsistent with projections contained in the Plan, (ii) will not adversely affect the implementation and financing of the Plan pursuant to the implementation schedule contained in the Plan, and (iii) is in accordance with SWACO's approved waiver guidelines and considerations, which may include an assessment of the Maximum Feasible Utilization of existing In-District designated Solid Waste Facilities. Any Person or Applicant who submits a waiver request pursuant to Rule 2-2017 shall submit documents and information for consideration by the Board that support the issuance of the requested waiver. Any waiver granted by the Board shall be effective upon the execution of a waiver agreement between the Board and the Applicant setting forth the terms of such waiver and Waiver Fee, if any.



# APPENDIX Q

## DISTRICT RULES



## **APPENDIX Q DISTRICT RULES**

### **Section 1: Administrative Information**

#### **1-1 Scope**

The Solid Waste Authority of Central Ohio (“SWACO”) is vested with the authority to prescribe reasonable, rules, definitions, and regulations necessary to perform the duties imposed on it by the Ohio Revised Code, including but not limited to reasonable procedures relating to solid waste planning, facility operational requirements, reporting requirements, and the safe and sanitary management of all solid wastes generated in the SWACO District. These District Rules establish definitions, set minimum standards for the storage, collection, transportation, processing, recycling, and disposal of solid waste materials, outline record keeping and reporting requirements, and provide for enforcement of violations. The District Rules (“Rules”) also serve to assist the SWACO District in achieving compliance with the reduction and recycling goals and strategies as contained in the Ohio EPA State Solid Waste Management Plan. Any rules, definitions, or regulations issued by SWACO in accordance with its rule-making authority shall be maintained by SWACO and made readily available to the public and posted on the SWACO website.

#### **1. Existing Rules**

Under the existing Plan and with the approval of this Plan, SWACO reserved the right to adopt rules pursuant to Ohio Revised Code Section 343.01 (G) in the following areas:

- prohibiting or limiting the receipt of waste generated outside the District;
- governing the maintenance, protection, and use of solid waste collection, disposal, transfer, recycling, or resource recovery facilities;
- governing a program to inspect out-of-state waste; and
- exempting an owner or operator of a solid waste facility from compliance with local zoning requirements.

#### **1-2 Intent**

The intent and purpose of the following rules for the SWACO District is to protect and promote the health, safety, and welfare of the residents and environment of the District and establish requirements for the safe and sanitary management, handling, disposal, reuse, and recycling of all solid wastes generated within its jurisdiction. The following rules are adopted by resolution by SWACO’s Board and contain the resolution number and year adopted or amended:

**RULE 1-2017: DELIVERY OF SOLID WASTE TO DESIGNATED FACILITIES**

Except as otherwise permitted by Rule or applicable law, no Person shall deliver, or cause the delivery of, any Solid Waste generated within the District to any Solid Waste Facility other than a Designated Solid Waste Facility. This Rule does not apply to (i) any contract by and between the Board and any Person relating to the transportation, delivery, disposal, or Processing of Solid Waste or Recyclable Materials generated within the District, or (ii) Unacceptable Wastes.

**RULE 2-2017: WAIVER FROM DESIGNATION**

Any Person or Applicant may request a waiver from the Board authorizing the delivery of all or any portion of the Solid Waste generated within the District to a Solid Waste Facility other than a Designated Solid Waste Facility. The Board may grant a waiver from the obligation to deliver Solid Waste generated within the District to a Designated Solid Waste Facility if the Board finds that issuance of a waiver for the requested Solid Waste materials: (i) is not inconsistent with projections contained in the Plan, (ii) will not adversely affect the implementation and financing of the Plan pursuant to the implementation schedule contained in the Plan, and (iii) is in accordance with SWACO's approved waiver guidelines and considerations, which may include an assessment of the Maximum Feasible Utilization of existing In-District Designated Solid Waste Facilities. Any Person or Applicant who submits a waiver request pursuant to Rule 2-2017 shall submit documents and information for consideration by the Board that support the issuance of the requested waiver. Any waiver granted by the Board shall be effective upon the execution of a waiver agreement between the Board and the Applicant setting forth the terms of such waiver and waiver fee, if any.

**RULE 3-2017: DELIVERY OF SPECIAL WASTES TO NON-DESIGNATED FACILITIES**

Except as otherwise permitted by Rule, Special Wastes are hereby exempted from Rule 1-2017, provided before the Acceptance of any Special Waste materials, the Solid Waste Facility intended for the disposal of said waste materials supplies to SWACO a signed, notarized Certification Form stating the Facility agrees to remit any and all applicable fees for all Special Wastes received. For purposes of this section, any Solid Waste Facility and/or entity operating pursuant to this Rule consents to the reporting requirements of Rule 6-2017, as well as any and all reasonable requests for scale reports, invoices, and/or any other relevant documentation, and shall subject said Facility or entity that receives, handles, or disposes of Special Wastes generated within the District to inspections by SWACO staff during any reasonable business hour. Submittal of the Certification Form, and subsequent operation pursuant to the requirements of this Rule, shall be in effect for the calendar year of issuance and can be renewed for subsequent calendar years.

**RULE 4-2017: PROHIBITION ON DISPOSAL OF PROCESSED OR SOURCE SEPARATED RECYCLABLE MATERIALS**

No Person shall deliver Processed Recyclable Materials or Source Separated Recyclable Materials to a Solid Waste Facility for disposal without the prior written consent of the Board.

**RULE 5-2017: PROHIBITION ON COMMINGLING OF SOURCE SEPARATED RECYCLABLE MATERIALS WITH OTHER SOLID WASTE**

No Person shall commingle or combine Source Separated Recyclable Materials with other Solid Waste without prior written consent of the Board.

**RULE 6-2017: SOLID WASTE AND RECYCLABLE MATERIAL REPORTING REQUIREMENTS**

Any Solid Waste Facility Accepting or Processing Solid Waste generated in the SWACO District, including Source Separated Recyclables, shall report to SWACO the amounts and types of materials received. All reports shall be submitted at least annually on the forms as provided by SWACO and shall include the following information:

- (i) The tonnage and/or volume of Solid Waste or Recyclable Materials,
- (ii) The types of Recyclable Materials collected and/or the Facility receiving the Recyclable Materials, if not the reporting Facility,
- (iii) Generator or material origin – whether the materials originated from a residential, commercial, or industrial establishment, and
- (iv) The amount of residual Solid Waste (i.e., contaminated or unusable material), if any, which is subject to the applicable SWACO fees and must be delivered to a SWACO Designated Solid Waste Facility for disposal.

In the case of a truck or container used for the collection of Solid Waste and/or Recyclable Materials that commingles materials both inside and outside the borders of the SWACO District, a reasonable estimate shall be made as to the Recyclable Material attributed to the SWACO District for reporting purposes.

**RULE 7-2017: CONSTRUCTION, MODIFICATION, AND IMPROVEMENTS TO SOLID WASTE FACILITIES**

No Person shall construct, enlarge, improve, Modify, or replace any Solid Waste Facility until General Plans and Specifications of the proposed improvement or Modification have been submitted to and approved by the Board as complying with the SWACO Solid Waste Management Plan. General Plans and Specifications for the proposed Facility shall be submitted to the Board, Attention: Executive Director, 4239 London Groveport Road, Grove City, Ohio 43123. All such General Plans and Specifications shall be clearly marked

as complying with the requirements of District Rule 7-2017 and Section 343.01(G)(2) of the Revised Code. No Applicant shall Modify, construct, or operate a Solid Waste Facility unless the Board has determined that the proposed construction or Modification of a Solid Waste Facility assures the Maximum Feasible Utilization of any Designated Solid Waste Facility located within the District and said proposal complies with the District Solid Waste Management Plan. Rule 7-2017 does not apply to a Solid Waste Facility owned, operated, or to be owned or operated by SWACO.

**RULE 8-2017: PROHIBITION ON OPEN DUMPING AND OPEN BURNING**

No Person, regardless of intent, shall violate Ohio Revised Code §3734.03 or burn Solid Wastes in any unapproved container or in an open fire except as specifically set forth in Ohio Administrative Code Rule 3745-19-04.

**RULE 9-2017: DISPOSAL OF REFRIGERANT CONTAINING APPLIANCES**

No Person shall deliver an appliance for disposal or Recycling which contains refrigerant material, including any air conditioner, refrigerator, chiller, or freezer, except as in compliance with the Code of Federal Regulations, 40 CFR 82.152-156. The SWACO Board of Trustees may waive any extra fees for the Processing and/or disposal of such appliances by during planned community collection events as part of the implementation of the SWACO Solid Waste Management Plan.

**RULE 10-2017: ACCESS AND USE OF SWACO FACILITIES**

No Person shall violate any term or condition relating to access and/or the use of Solid Waste Facilities owned or leased by SWACO, including any published safety policies or guidelines established for said Facilities.

**RULE 11-2017: ENFORCEMENT AUTHORITY – INSPECTIONS**

Every Solid Waste Facility located within the SWACO District shall operate in compliance with the SWACO District Rules. SWACO designated officials are authorized to make lawful inspection of the premises of any Person suspected of violating these District Rules or who owns and operates a Solid Waste Facility located within the SWACO District.

The Executive Director and/or SWACO designated officials, upon displaying proper identification and stating the purpose and necessity of an inspection, may enter at reasonable times upon any private or public property, real or personal, to inspect or investigate, obtain samples or photographs, and/or examine or copy any records to determine compliance with these District Rules or the SWACO Solid Waste Management Plan. If entry is refused or the inspection or investigation is refused, hindered, or

thwarted, the Executive Director or an authorized representative may apply for an appropriate search warrant.

**RULE 12-2017: PENALTIES FOR NON-COMPLIANCE**

In addition to any other sanction or remedial procedure which may be available, including pursuant to O.R.C. §343.99 and/or any civil injunction which may be obtained for enforcement, any Person violating or failing to comply with any of the District Rules shall be subject to the applicable provisions as established in the SWACO Enforcement Guidance and Penalty Policy. Each day on which any violations of these Rules occurs shall constitute a separate violation. The imposition of a fine or any other penalty shall not be construed to excuse or permit the continuation of any violation, and the violator may be subject to subsequent penalties for each day the violation continues. The determination as to whether an act or a failure to act is a continuing violation is solely within the discretion of SWACO enforcement personnel.

**RULE 13-2017: ADOPTION SAVINGS CLAUSE**

- A. Following the adoption of Section 1, Administrative Information, and District Rules 1-2017 through 13-2017, by the Board and upon the effective date of the District Rules, any and all versions of previous District Rules shall be repealed. The Board shall review these District Rules at least once during every five (5)-year period, or in conjunction with the Plan.
- B. Notwithstanding paragraph (A) above, this Rule shall have no effect on existing litigation or on any action or proceeding pending on the effective date of these District Rules, or any enforcement involving violations of previous Rules.
- C. If any Rule, or any part thereof, shall be adjudged or declared by any court of competent jurisdiction to be unconstitutional or invalid, such judgment shall not affect the validity of the remaining District Rules. Should any Rule, or any part thereof, be rendered invalid by reason of any existing or subsequently enacted legislation, such invalidation of any Rule, or part thereof, shall not affect the validity of the remaining District Rules.

**2. Definitions**

The following definitions shall apply in the interpretation and application of the SWACO District Rules, as well as to the operations of SWACO, including but not limited to the Solid Waste Management Plan and procedures/guidelines.



**ACCEPT OR ACCEPTANCE** in the context of material acceptance, handling, and disposal activities means to record material in the log of operations or to place material on the materials placement area at a Solid Waste Facility.

**APPLICANT** means a Person proposing to construct or Modify a Solid Waste Facility within the District that requires a determination by the Board that a proposal to construct or Modify a Solid Waste Facility complies with the Plan; or a Person requesting a waiver by the Board from application of a Rule adopted by the Board or from the obligation to deliver Solid Waste generated within the District to a Designated Solid Waste Facility.

**AUTHORITY OR SWACO** means the Solid Waste Authority of Central Ohio with its principal offices located at 4239 London Groveport Road, Grove City, Ohio 43123.

**BOARD** means the Board of Trustees of the Solid Waste Authority of Central Ohio.

**COMMINGLED RECYCLABLE MATERIALS** means Recyclable Materials of more than one type that are combined together and have been separated from all but residual Solid Waste at the point of generation.

**COMPOST** means the material or product which is developed under controlled conditions and which results from biological degradation processes by which Organic Wastes decompose.

**COMPOSTING** means a controlled process of biological decomposition which transforms Solid Wastes into products useful as soil amendments. Controlled conditions include but are not limited to grinding, shredding, piling, physical turning, aerating, adding moisture, or other processing of Solid Wastes.

**COMPOSTING FACILITY** means any building, portion of a building, or area in which Organic Waste, animal waste, and/or Yard Wastes are collected, stored, or processed which is permitted or required to be permitted by the Ohio EPA.

**DESIGNATED SOLID WASTE FACILITY** means those Solid Waste Facilities designated in the initial or amended SWACO Plan or as may hereafter become designated pursuant to Sections 343.013, 343.014, or 343.015 of the Revised Code.

**DISTRICT** means the SWACO Solid Waste Management District and includes the Territory of Franklin County and portions of Delaware, Fairfield, Licking, Pickaway, and Union counties. Section 3734.52(A) of the Revised Code requires that if a municipal corporation is located within more than one solid waste management district, the entire municipal corporation is included in the district where the majority of its population resides.

**ELECTRONIC WASTE OR E-WASTE** means unwanted electronic appliances and devices, including but not limited to: computers, monitors, tablets, e-readers, cell phones, fax machines, copy machines, televisions, stereo/audio equipment, phones, personal digital assistants (PDAs), game consoles, video recorders, and electronics from industrial sources.

**EXECUTIVE DIRECTOR** means that Person employed by the Board with the title of Executive Director.

**FOOD WASTES** means (i) waste material of plant or animal origin, or a combination thereof, that results from the preparation or Processing of food for animal or human consumption, (ii) that is separated by the Generator from the Municipal Solid Waste stream, and (iii) managed separately from other Solid Waste materials, including but not limited to materials not capable of decomposing to Compost. Food Wastes may also include packaging, utensils, and food containers composed of readily biodegradable material capable of decomposition in accordance with the ASTM D6400 standard required for use.

**FRANKLIN COUNTY SANITARY LANDFILL OR FC SL** means the sanitary landfill owned and operated by SWACO, located at 3851 London Groveport Road in Jackson Township, and includes any vertical or horizontal expansion of that landfill.

**GENERAL PLANS AND SPECIFICATIONS** means that information required to be submitted to the Board for review for the construction or Modification of any proposed Solid Waste Facility and includes, but is not limited to, a site plan for the proposed Solid Waste Facility and all other information required by the Siting Strategy contained in the SWACO Plan.

**GENERATION FEE** means a fee established pursuant to section 3734.573(A) of the Revised Code and assessed upon each ton of Solid Waste generated within the District.

**GENERATOR** means any Person, by site location, whose act or Process produces waste or first causes a waste to become subject to these regulations.

**HAZARDOUS WASTE** means a Solid Waste with properties that make it dangerous or potentially harmful to human health and/or the environment. In accordance with the Resource Conservation and Recovery Act, Hazardous Waste is a waste that appears on one, or more, of the four Hazardous Waste lists (F-list, K-list, P-list, or U-list) or exhibits at least one of the four characteristics (ignitability, corrosivity, reactivity, or toxicity).

**HOUSEHOLD HAZARDOUS WASTE** means hazardous products that are used and disposed of by residential, as opposed to industrial or commercial, consumers. Household Hazardous Wastes are exempted from Hazardous Waste regulations.

**ILLEGAL DUMPING** means causing Solid Waste to be placed, deposited, or dumped in or upon any street, alley, public highway, or road in common use, or upon any private property, public park, or other public property other than properly designated or set aside for such purpose by the government for proper land disposal. Illegal Dumping may be referred to as unlawful dumping.

**LANDFILL** means an area of land or an excavation in which wastes are placed for permanent disposal.

**LEGITIMATE RECYCLING FACILITY** means an engineered facility or site where Recycling of material other than scrap tires is the primary objective of the Facility, including: (a) Facilities that Accept only Source Separated Recyclable Materials, except scrap tires, and/or Commingled Recyclables which are currently recoverable utilizing existing technology; and (b) Facilities that: (i) Accept mixed or Source Separated Solid Waste; (ii) recover for beneficial use not less than sixty percent (60%) of the weight of Solid Waste brought to the Facility each month (as averaged monthly) for not less than eight (8) months in each calendar year, and (iii) dispose of not more than forty percent (40%) of the total weight of Solid Waste brought to the Facility each month (as averaged monthly) for not less than eight (8) months in each calendar year.

**MANIFEST** means the document for identifying the quantity, composition, origin, routing, and destination of Special Handling Wastes during its transportation from the point of generation to the point of storage, treatment, or disposal.

**MATERIALS RECOVERY FACILITY (MRF)** means a Solid Waste Management Facility that provides for the extraction from Solid Waste of Recyclable Materials, materials suitable for use as a fuel or soil amendment, or any combination of those materials. This term does not include facilities that recover less than sixty percent (60%) of Recyclable Material from the Solid Waste received on an annual average.

**MAXIMUM FEASIBLE UTILIZATION** means the use of a Designated Solid Waste Facility that operates at not less than ninety-five percent (95%) of its designed capacity and/or Ohio EPA-permitted allowable maximum daily waste receipts at the Board-approved rates and charges to be paid by any Person that delivers Solid Waste or Recyclable Materials to the Designated Solid Waste Facility.

**MODIFY OR MODIFICATION** means a change in the operation of an existing In-District Solid Waste Facility that requires the approval of the Director of the Ohio Environmental Protection Agency or that involves a change in the type of material, manner of operation, or activities conducted at a Solid Waste Facility.

**MUNICIPAL SOLID WASTE OR MSW** means Solid Waste from household, community, commercial, and agricultural, and/or industrial sources that does not contain Hazardous

Waste as defined in 40 CFR Part 261 unless it is Household Hazardous Waste as defined in 40 CFR §261.4(b)(1).

**NOTICE OF VIOLATION OR NOV** means a written notice that may be issued by SWACO if a Person, Owner, Operator, or responsible Person is alleged to be in violation of a condition or section of these regulations, presents a threat to human health, public safety or the environment.

**OPEN DUMP** means a site that is not licensed as a Solid Waste Facility where Solid Wastes, including scrap tires or infectious wastes, are deposited into a body or stream of water or onto the surface of the ground.

**OPERATOR** means the Person responsible for the overall operation of a disposal site, Solid Waste Facility, or any part of that site.

**ORGANIC WASTE** means Food Wastes, Yard Waste, uncontaminated wood waste, animal waste, crop residue, paper waste, or other non-hazardous carbonaceous waste, such as paper, corrugated paper or cardboard, that is collected and Processed separately from the rest of the Municipal Waste Stream.

**OWNER** means the Person who owns a disposal site, Solid Waste Facility, or any part of the site.

**PERSON** means an individual, partnership, firm, company, corporation, association, sole proprietorship, joint venture, Owner, Operator, Generator, government unit, or any other legal entity.

**PLAN** means the SWACO Solid Waste Management Plan initially approved by the Director of the Ohio Environmental Protection Agency on May 14, 1993, and as subsequently amended thereafter.

**PROCESS OR PROCESSED** means manual, mechanical, or automated separation of Recyclable Material from other materials; separation of Recyclable Materials from each other; cleaning, bundling, compacting, cutting, or packing of Recyclable Material. This shall not include melting, rendering, smelting, vulcanizing, or purification by application of heat or chemical process.

**RECYCLABLE MATERIALS OR RECYCLABLES** means Solid Waste that can be Processed and returned to the economic mainstream in the form of raw materials or products, which may include, but is not limited to, the following: newspaper, corrugated cardboard, aluminum, Yard Waste, office paper, glass, tin and steel cans, metal, motor oil, plastic, antifreeze, wood, and Food Waste.

**RECYCLING FACILITY** means a facility designed and operated to receive, store, or Process Recyclable Material which has been separated at the source from all but residual Solid Waste for the purpose of marketing the material for use as raw material in the manufacturing process of new, reused, or reconstituted products. A Recycling Facility shall not include Compost operations accumulating less than twenty-five (25) cubic yards of compostable material at any given time or a farm-based Compost operation where compostable material is used exclusively on the site where the material is composted.

**SCAVENGING** means the uncontrolled or unpermitted removal of material from the Solid Waste stream received at a Solid Waste Facility for disposal for any purpose in a manner which interferes with the safe, efficient operation of the system.

**SOLID WASTE** means such unwanted residual solid or semisolid material as results from industrial, commercial, agricultural, and community operations, excluding earth or material from construction, mining, or demolition operations, or other waste materials of the type that would normally be included in demolition debris, nontoxic fly ash, spent nontoxic foundry sand, and slag and other substances that are not harmful or inimical to public health, and includes, but is not limited to, garbage, tires, combustible and non-combustible material, street dirt, and debris. Solid Waste does not include any material that is an infectious waste or a Hazardous Waste.

**SOLID WASTE FACILITY** means a facility that collects, stores, transports, transfers, Processes, treats, and/or disposes of Solid Wastes or conducts resource recovery activities. A Solid Waste Facility shall include a Recycling facility, Yard Waste facility, or any facility which receives any Solid Waste material streams for Processing or disposal.

**SOLID WASTE MANAGEMENT AUTHORITY** means the Solid Waste Authority of Central Ohio (SWACO) and its agents.

**SOURCE SEPARATED** means materials, including Commingled Recyclables, that have been separated or kept separate from the Solid Waste stream at the point of generation for the purpose of additional sorting or Processing those materials for recycling or reuse in order to return them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace.

**SPECIAL WASTES** means a Solid Waste that requires special handling procedures or permitting and/or special disposal methods because of its physical characteristics, chemical makeup, or biological nature. This category includes, but is not limited to:

- Ash from fires, furnaces, boilers, or incinerators
- Automotive Shredder Residue, subject to testing by SWACO on a quarterly basis
- Chemical compounds or petroleum products – new or used

- Contaminated soils and USTs
- Debris and/or residue from spill cleanup work
- Drums and drum pads
- Demolition waste from industrial facilities
- Filter cakes
- Friable asbestos containing materials
- Industrial Process wastes
- Manufacturing residue
- Treated Infectious/pathological or biological waste
- Off-specification products or outdated products (i.e., food, consumer, or industrial products)
- Oil and grease
- PCB waste
- Pharmaceutical wastes Pollution control wastes
- Process wastes
- Railroad ties
- RCRA empty containers
- Resource exploration, mining, and production wastes
- Sandblast grit
- Sludge and/or paste type material
- Tank bottoms

**TRANSFER STATION OR SOLID WASTE TRANSFER FACILITY** means any site, location, tract of land, installation, or building that is used or intended to be used primarily for the purpose of transferring Solid Wastes that were generated off the premises of the facility from vehicles or containers into other vehicles for transportation to a Solid Waste disposal facility. This does not include any facility that consists solely of portable containers that have an aggregate volume of fifty cubic yards or less nor any facility where legitimate recycling activities are conducted.

**UNACCEPTABLE WASTES** are those materials prohibited from disposal at the Franklin County Sanitary Landfill pursuant to local, State, or federal regulations, or operational restrictions as determined by SWACO. This category includes, but is not limited to:

- Asbestos (friable and non-friable)
- Automotive Waste including any non-liquid, unwanted and discarded automobile parts weighing in excess of fifty (50) pounds, as well as Scrap Tires. This does not include Automobile Shredder Residue.
- Bevill Wastes
- Contaminated soils containing petroleum-based products
- Dedicated loads of Source Separated Recyclable Materials
- Dedicated loads of Yard Waste

- Drums, barrels, buckets, and other containers unless lids have been removed and interiors are cleaned and free of residue in accordance with applicable law and regulations
- Explosive and ordnance materials
- Gas cylinders, unless empty and delivered separate from other Solid Waste and vented to atmosphere
- Hazardous Waste
- Lead acid batteries
- Liquid wastes, including used motor oil
- Radioactive materials
- Untreated Chemotherapeutic waste
- Untreated Infectious/Pathological or Biological waste
- Whole and shredded tires – passenger and large vehicle

**YARD WASTE** means all garden residues, leaves, grass clippings, shrubbery, tree pruning, and similar material or debris commonly thrown away in the course of maintaining yards and gardens, including sod and rocks. Yard Waste does not include Food Wastes, plastics and synthetic fibers, lumber, or soils contaminated with hazardous substances. Yard Waste collected for residents by political subdivisions or their contractors is considered municipal Yard Waste. All other yard waste is non-municipal Yard Waste.

### 3. Proposed Rules

SWACO reserves the right to promulgate rules in accordance with 343.01(G) to assist in implementing any or all strategies necessary to achieve the waste management goals of this amended *Plan Update*.



# **APPENDIX R**

## **BLANK SURVEY FORMS AND RELATED INFORMATION**







4239 London Groveport  
Road Grove City, OH  
43123-9518 614.871.5100  
614.871.5103 (FAX)  
www.swaco.org • info@swaco.org

Transforming Today  
for Tomorrow:  
Disposal, Diversion  
and Development

Dear Recycling Processor/Broker:

At the Solid Waste Authority of Central Ohio (SWACO) we're committed to a healthier and safer environment through increasing recycling options for our communities and businesses. Central Ohio is fortunate to have a robust recycling industry and we're excited about the opportunity to expand collaboration with our private partners to increase the recovery of materials from our waste stream.

To help us track local recycling efforts, and to fulfill our state obligations, we are requesting your participation in a brief survey regarding the total pounds/tons recycled by your workplace in 2015. SWACO is responsible for providing local businesses, residents and governments with opportunities to reduce, reuse, and recycle materials. Each year, SWACO is required by law to collect recycling data from brokers, processors, and recyclers within its jurisdiction. This information is critical for state-mandated data reporting and solid waste management planning. The data you provide will be combined with other businesses' data to determine the total amount of material recycled in Franklin County in 2015. All survey responses are aggregated, so your individual company's information will not be identified.

Please complete the enclosed survey by submitting calendar year 2015 recycling data for your business by **Friday, April 15, 2016**. Completing this survey should only take a few minutes. Only materials generated within Franklin County, Ohio should be reported.

Please contact SWACO's consultant, Molly Kathleen with GT Environmental, with any questions regarding this survey. Molly can be reached at mkathleen@gtenvironmental.com or 740-212-3430.

Sincerely,

Ty Marsh, Executive Director  
Solid Waste Authority of Central Ohio



# 2015 SWACO RECYCLING SURVEY

Transforming Today  
for Tomorrow:  
Disposal, Diversion  
and Development

**Instructions:** Please complete the following survey to the best of your ability using **2015** tonnage information.

This survey is only in regard to solid waste materials (including recycling) generated by residential, commercial or industrial entities located in SWACO's jurisdiction (Franklin County, Ohio). **DO NOT** include tonnage data from entities located outside SWACO's jurisdiction. Please **DO NOT** include metals from auto bodies, train boxcars, or construction and demolition debris (C&DD) in the ferrous and/or non-ferrous categories. Please **DO NOT** include C&DD tonnage, which includes concrete, asphalt, wood, and scrap metals used in construction or demolition activities and in renovation of residential buildings, as well as gutters, siding, wiring, storm doors, plumbing, etc.

**Confidentiality:** The Solid Waste Authority of Central Ohio will use the information in this survey for summary purposes only to identify types of wastes that may be further reduced or recycled.

If you have any questions regarding the completion of this survey, please SWACO's consultant, Molly Kathleen with GT Environmental. Molly can be reached at [mkathleen@gtenvironmental.com](mailto:mkathleen@gtenvironmental.com) or 740-212-3430.

Part 1: Company Information		
Company Name:		
Address:	City:	Zip:
Contact Person:	Title:	
Phone:	Email:	
Hours Open to the Public:	Days Open to the Public:	

**Part 2: How do you define your facility and services? Please mark all that apply.**

- Material Processor
- Recycling Broker
- Drop-Off Facility
- Scrap Yard
- Hauler Collection/Pick-Up Service
- Buyback Recycling Center
- Licensed Auto Salvage Dealer

**Is your facility:**

- Publicly Available
- Private/Business-Use Only

**Part 3: 2015 Recycling Tonnage**

Please report the amount of materials **recycled in 2015 from Franklin County in Table 1. The data requested in the recycled columns is very important.** This information is used to calculate SWACO's progress in meeting state and local recycling goals. Please **DO NOT** include metals from auto bodies, train boxcars, or construction and demolition debris (C&DD) in the ferrous and/or non-ferrous categories. Please **DO NOT** include any C&DD tonnage, which also includes concrete, asphalt, wood and scrap metals used in construction activities and in renovation of residential buildings, as well as gutters, siding, wiring, storm doors, plumbing, etc.

Enter the data and circle **tons or pounds (lbs)**.

Please leave the row blank if you have nothing to report for a given waste type.

<b>Materials</b>	<b>Residential/ Commercial Sector Amount Recycled</b>	<b>Unit (please circle)</b>	<b>Industrial Sector Amount Recycled</b>	<b>Unit (please circle)</b>
Appliances/White Goods		tons lbs		tons lbs
Lead-Acid Batteries		tons lbs		tons lbs
Dry-Cell Batteries		tons lbs		tons lbs
Food		tons lbs		tons lbs
Glass		tons lbs		tons lbs
Household Hazardous Waste		tons lbs		tons lbs
Ferrous Metals (Steel)		tons lbs		tons lbs
Non-Ferrous Metal (Aluminum, Brass, copper)		tons lbs		tons lbs
Corrugated Cardboard		tons lbs		tons lbs
Paper (Office Paper, Newspaper, Magazines, etc.)		tons lbs		tons lbs
#1 and/or #2 Plastics		tons lbs		tons lbs
Other Plastics (#3-#7)		tons lbs		tons lbs
Scrap Tires		tons lbs		tons lbs
Textiles		tons lbs		tons lbs
Used Motor Oil		tons lbs		tons lbs
Wood		tons lbs		tons lbs
Yard Waste		tons lbs		tons lbs
Commingled Recyclables		tons lbs		tons lbs
Electronics		tons lbs		tons lbs
Ash (Recycled Ash Only)		tons lbs		tons lbs
Non-Excluded Foundry Sand)		tons lbs		tons lbs
Fluorescent Bulbs/Ballasts		tons lbs		tons lbs
Ink Cartridges/Tones		tons lbs		tons lbs
1. Other (Specify): _____		tons lbs		tons lbs
2. Other (Specify): _____		tons lbs		tons lbs
3. Other (Specify): _____		tons lbs		tons lbs
4. Other (Specify): _____		tons lbs		tons lbs

Thank you for completing this survey!

Please submit this completed survey by **April 15, 2016** in the enclosed postage-paid envelope or fax to 614-899-9255. You may also submit the survey via email to [mkathleen@qtenvironmental.com](mailto:mkathleen@qtenvironmental.com).



# APPENDIX S

## SITING STRATEGY



## **APPENDIX S SITING STRATEGY**

### **Process to Consider Solid Waste Proposals that Require Construction or Modification of In-District Solid Waste Facilities.**

#### **I. Purpose and Objective**

SWACO’s Siting Strategy for Solid Waste Facilities ensures that proposals to construct a new Solid Waste Facility within the District or modify an existing Solid Waste Facility within the District are in compliance with the Solid Waste Management Plan (“Plan”) and District Rules.

#### **II. Rule**

SWACO’s District Rule 7-2017 requires that the SWACO Board of Trustees review and approve all proposals to construct any new Solid Waste Facility within the District or modify any existing in-District Solid Waste Facility. A “Solid Waste Facility” as defined in District Rules Section 1-3, means any facility that collects, stores, transports, transfers, processes, treats and/or disposes of Solid Waste or conducts resource recovery activities. District Rule 7-2017 provides that:

No Person shall construct, enlarge, improve, Modify, or replace any Solid Waste Facility until General Plans and Specifications of the proposed improvement or Modification have been submitted to and approved by the Board as complying with the SWACO Solid Waste Management Plan. General Plans and Specifications for the proposed Facility shall be submitted to the Board, Attention: Executive Director, 4239 London-Groveport Road, Grove City, Ohio 43123. All such General Plans and Specifications shall be clearly marked as complying with the requirements of District Rule 7-2017 and Section 343.01(G)(2) of the Revised Code. No Applicant shall Modify, construct or operate a Solid Waste Facility unless the Board has determined that the proposed construction or Modification of a Solid Waste Facility assures the Maximum Feasible Utilization of any Designated Solid Waste Facility located within the District and said proposal complies with the District Solid Waste Management Plan. Rule 7-2017 does not apply to a Solid Waste Facility owned, operated, or to be owned or operated, by SWACO.

#### **III. Procedure Implementing Siting Strategy**

The Board shall not approve the construction or modification to a Solid Waste Facility in its District where the construction and/or operation will:

- (1) Have a significant adverse impact upon the Board’s ability to finance and implement the Plan;
- (2) Interfere with SWACO’s obligation to provide for the Maximum Feasible Utilization of existing in-District Solid Waste Facilities;
- (3) Materially and adversely affect the quality of life of residents within 300 feet of the proposed Facility; or
- (4) Materially and adversely affect the local community, including commercial businesses within 500 feet of the proposed Facility, and the adequacy of existing infrastructure to serve the proposed Facility.

The Board has implemented a three (3) step procedure for reviewing a request to construct or modify an In-District Solid Waste Facility.

**STEP 1: Submittal of General Plans and Specifications**

Any Person proposing to construct a new Solid Waste Facility or modify an existing In-District Solid Waste Facility (“Applicant”) shall:

- a. Provide General Plans and Specifications of the proposed facility to the Board. Such General Plans and Specifications shall include, but may not be limited to, the following documents and information:
  - i. A description of the type of processing (treatment, storage, disposal, transfer, recycling, processing, resource recovery, and legitimate recycling facility as defined by the Ohio Revised Code and Ohio Administrative Code), including the equipment and technology;
  - ii. A description of the types of materials accepted by the Solid Waste Facility;
  - iii. Anticipated processing capacity for the Solid Waste Facility, identified markets for sale of recycled or composted material, and the anticipated amount of residual waste generated;
  - iv. A detailed list of all regulatory approvals required for operation, including status of all permit/license applications;
  - v. A site plan for the proposed Solid Waste Facility showing the height and size of the Facility, all proposed means of vehicle ingress/egress to Facility, traffic plan and abutting public/arterial streets or County/Township roads;

- vi. Anticipated Source of Recyclable Materials to be received at the proposed Solid Waste Facility, including identification of the types of commercial, industrial, agricultural, residential and institutional generators that are expected to use the Solid Waste Facility;
  - vii. A description of the management and control procedures to minimize the potential for debris, odors and air quality at the Solid Waste Facility;
  - viii. Notification of the proposed construction or Modification to neighboring and surrounding property owners within 1,000 feet of the Solid Waste Facility;
  - ix. Applicant's written statement to the Board explaining why, in the Applicant's opinion, the proposal complies with the Plan; and
  - x. Any other information necessary for the Board to evaluate whether the proposed Solid Waste Facility complies with each of the criteria listed below.
- b. Adequately demonstrate to the Board that the construction or Modification and subsequent operation of the proposed Solid Waste Facility will:
- i. Be consistent with the goals, objectives, projections and strategies contained in the Plan;
  - ii. Not adversely affect financing for the implementation of the Plan;
  - iii. Not adversely affect the Board's obligation to provide for the Maximum Feasible Utilization of existing in-District Solid Waste Facilities;
  - iv. Be adequately served by essential public facilities and services;
  - v. Not create excessive additional requirements at public cost for public facilities or services; and
  - vi. Be in the best interest of the District, its residents and businesses.
- c. The Applicant shall submit any additional information that the Board requests in order to establish, to the reasonable satisfaction of the Board, that the construction or Modification and subsequent operation of the proposed Solid Waste Facility or proposed Modification of an existing in-District Solid Waste Facility will comply with the Plan.

**STEP 2: Board Review**

The Board shall conduct a review of the information submitted for the proposed Solid Waste Facility to determine whether the Applicant has adequately demonstrated that the proposed Solid Waste Facility will be constructed or modified and subsequently operated in compliance with the Plan and demonstrated that the potential consequences or repercussions listed in Step 1 do not adversely affect the District, its residents and businesses.

Within 60 (sixty) days of receiving the complete General Plans and Specifications from an Applicant, the Board shall make a determination as to whether the General Plans and Specifications submitted by the Applicant contain sufficient information for the Board to complete its review of the proposal. In the event the Board determines that more information is necessary to complete its review of the proposal, the Board shall notify the Applicant of such request in writing within 10 (ten) days of its determination for additional information.

Within 90 (ninety) days of determining that the Applicant has submitted a complete set of General Plans and Specifications, the Board shall determine whether the proposal complies with the Plan and the criteria identified in Step 1 herein. The Board shall notify the Applicant of its decision in writing. While the Board has broad discretion regarding the approval of General Plans and Specifications for a proposed Solid Waste Facility or the Modification of an existing in-District Solid Waste Facility, it is the intent of this Siting Strategy that the Board shall not approve General Plans and Specifications for a proposed Solid Waste Facility unless the Board determines that the proposed Solid Waste Facility or Modification of an existing in-District Solid Waste Facility complies with the Plan and the criteria identified in Step 1 herein.

**STEP 3: Development Agreement**

In the event the Board determines that the proposed construction or Modification and subsequent operation of a Solid Waste Facility complies with the Plan, the Applicant shall enter into a Development Agreement with SWACO, which memorializes the obligations that are the basis of the Board’s conclusion that the General Plans and Specifications demonstrate that the proposed facility or its Modification complies with the Plan, and any other terms and conditions required for the Board’s approval. The Applicant shall have an ongoing obligation to comply with the Plan and the Development Agreement and shall construct and commence the operation of the Solid Waste Facility within 365 days of the Board’s determination or the date specified in the Development Agreement, whichever is later. Any Solid Waste Facility that fails to commence the operation of said Facility within the required time period may be required by the Board to apply for a waiver.



**IV. Exemption/Waivers from Siting Strategy**

- a. Exemption – District Rule 7-2017 shall not apply to a Solid Waste Facility owned, operated, or to be owned or operated, by SWACO.
- b. Waiver – the Board may waive the requirement for submission and Board approval of General Plans and Specifications or otherwise grant exceptions to these rules, if the Board concludes, in its sole and complete discretion that such waiver is in the best interest of the District.



# APPENDIX T

## MISCELLANEOUS PLAN DOCUMENTS





**Certifying SWACO's draft Solid Waste Management Plan update to be submitted to the Ohio Environmental Protection Agency for review.**

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**Committee of the Whole**

**CERTIFICATION STATEMENT  
FOR SUBMISSION OF THE DRAFT SOLID WASTE MANAGEMENT PLAN**

For the Solid Waste Authority of Central Ohio ("SWACO"), comprised of Franklin County.

We, as representatives of the SWACO Board of Trustees, do hereby certify that to the best of our knowledge and belief, the statements, demonstrations, and all accompanying materials that comprise the SWACO Solid Waste Management Plan are accurate and in compliance with the requirements in the *District Solid Waste Management Plan Format*, revision 4.0, the *2009 State Solid Waste Management Plan*, and the Ohio Revised Code. The SWACO Solid Waste Management Plan will be submitted to the Ohio Environmental Protection Agency on November 22, 2016, for review.

*Presented by:* Kyle O'Keefe, Director of Innovation and Programs

---

**BE IT RESOLVED by the Board of Trustees of the Solid Waste Authority of Central Ohio that:**


1. The SWACO Board of Trustees authorize the submission of draft Solid Waste Management Plan update to the Ohio Environmental Protection Agency for review.
2. This resolution shall be in full force and effect from and immediately upon its adoption.

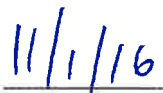
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**Kenneth N. Wilson, Chair of the SWACO Board of Trustees**  
*Appointed by the Franklin County Board of Commissioners*

  
**Date Signed**

---

  
**Tracie Davies, Vice-Chair of the SWACO Board of Trustees**  
*Mayor of the City of Columbus Designee*

  
**Date Signed**

---

  
**Stephen Bowshier**  
*Appointed by the Franklin County Townships*

  
**Date Signed**

*Mike Frank*

**Mike Frank**  
*Representing the General Interests of Citizens*

*11/15/16*

**Date Signed**

*Patrick King*

**Patrick King**  
*Representing the Public*

*11.1.16*

**Date Signed**

**Joe Lombardi**  
*Appointed by the Mayor of Columbus*

**Date Signed**

*Erik Janas*

**Erik Janas (for Hon. John O'Grady)**  
*Representing the President of the Franklin County Board of Commissioners*

*11/11/16*

**Date Signed**

*Susan A. Tilgner*  
**Susan Tilgner**  
*Franklin County Health Commissioner*

*11/15/16*

**Date Signed**

*Brian Will*

**Brian Will**  
*Representing the Industrial, Commercial, or Institutional Generators of Solid Wastes within the District*

*11/15/16*

**Date Signed**

Date Adopted: November 1, 2016

Vote:  
For: 7 Against: 0 Abs: 0

*Kenneth N. Wilson*

**Kenneth N. Wilson**  
Chairman, Board of Trustees

*Katherine M. Schwartz*

**Katherine M. Schwartz, Secretary**

*Rebecca Egelhoff*

Approved as to Form:

**Rebecca Egelhoff, Managing Counsel**



# APPENDIX U

## RATIFICATION RESULTS





# APPENDIX V

## RULE DEFINITIONS



## APPENDIX V DEFINITIONS

For the purposes of this Plan, all capitalized and **bolded** terms listed below shall have the meaning provided in this Appendix, unless an alternative definition is provided elsewhere in the text of the Plan.

All capitalized and **bolded** terms used in the Rules adopted by SWACO shall have the meanings established herein:

**“ACCEPT OR ACCEPTANCE”** in the context of material acceptance, handling, and disposal activities means to record material in the log of operations or to place material on the materials placement area at a Solid Waste Facility.

**“APPLICANT”** means a Person proposing to construct or Modify a Solid Waste Facility within the District that requires a determination by the Board that a proposal to construct or Modify a Solid Waste Facility complies with the Plan; or a Person requesting a waiver by the Board from application of a Rule adopted by the Board or from the obligation to deliver Solid Waste generated within the District to a Designated Solid Waste Facility.

**“AUTHORITY” or “SWACO”** means the Solid Waste Authority of Central Ohio with its principal offices located at 4239 London Groveport Road, Grove City, Ohio 43123.

**“BOARD”** means the Board of Trustees of the Solid Waste Authority of Central Ohio.

**“COMMINGLED RECYCLABLE MATERIALS”** means Recyclable Materials of more than one type that are combined together and have been separated from all but residual Solid Waste at the point of generation.

**“COMPOST”** means the material or product which is developed under controlled conditions and which results from biological degradation processes by which Organic Wastes decompose.

**“COMPOSTING”** means a controlled process of biological decomposition which transforms Solid Wastes into products useful as soil amendments. Controlled conditions include but are not limited to grinding, shredding, piling, physical turning, aerating, adding moisture, or other processing of Solid Wastes.

**“COMPOSTING FACILITY”** means any building, portion of a building, or area in which Organic Waste, animal waste, and/or Yard Wastes are collected, stored, or processed which is permitted or required to be permitted by the Ohio EPA.

**“DESIGNATED SOLID WASTE FACILITY”** means those Solid Waste Facilities designated in the initial or amended SWACO Plan or as may hereafter become designated pursuant to Sections 343.013, 343.014, or 343.015 of the Revised Code.

**“DISTRICT”** means the SWACO Solid Waste Management District and includes the Territory of Franklin County and portions of Delaware, Fairfield, Licking, Pickaway, and Union counties. Section 3734.52(A) of the Revised Code requires that if a municipal corporation is located within more than one solid waste management district, the entire municipal corporation is included in the district where the majority of its population resides.

**“ELECTRONIC WASTE OR E-WASTE”** means unwanted electronic appliances and devices, including but not limited to: computers, monitors, tablets, e-readers, cell phones, fax machines, copy machines, televisions, stereo/audio equipment, phones, personal digital assistants (PDAs), game consoles, video recorders, and electronics from industrial sources.

**“EXECUTIVE DIRECTOR”** means that Person employed by the Board with the title of Executive Director.

**“FOOD WASTES”** means (i) waste material of plant or animal origin, or a combination thereof, that results from the preparation or Processing of food for animal or human consumption, (ii) that is separated by the Generator from the Municipal Solid Waste stream, and (iii) managed separately from other Solid Waste materials, including but not limited to materials not capable of decomposing to Compost. Food Wastes may also include packaging, utensils, and food containers composed of readily biodegradable material capable of decomposition in accordance with the ASTM D6400 standard required for use.

**“FRANKLIN COUNTY SANITARY LANDFILL” or “FCSL”** means the sanitary landfill owned and operated by SWACO, located at 3851 London Groveport Road in Jackson Township, and includes any vertical or horizontal expansion of that landfill.

**“GENERAL PLANS AND SPECIFICATIONS”** means that information required to be submitted to the Board for review for the construction or Modification of any proposed Solid Waste Facility and includes, but is not limited to, a site plan for the proposed Solid Waste Facility and all other information required by the Siting Strategy contained in the SWACO Plan.

**“GENERATION FEE”** means a fee established pursuant to section 3734.573(A) of the Revised Code and assessed upon each ton of Solid Waste generated within the District.

**“GENERATOR”** means any Person, by site location, whose act or Process produces waste or first causes a waste to become subject to these regulations.

**“HAZARDOUS WASTE”** means a Solid Waste with properties that make it dangerous or potentially harmful to human health and/or the environment. In accordance with the Resource Conservation and Recovery Act, Hazardous Waste is a waste that appears on one, or more, of the four Hazardous Waste lists (F-list, K-list, P-list, or U-list) or exhibits at least one of the four characteristics (ignitability, corrosivity, reactivity, or toxicity).



**“HOUSEHOLD HAZARDOUS WASTE”** means hazardous products that are used and disposed of by residential, as opposed to industrial or commercial, consumers. Household Hazardous Wastes are exempted from Hazardous Waste regulations.

**“ILLEGAL DUMPING”** means causing Solid Waste to be placed, deposited, or dumped in or upon any street, alley, public highway, or road in common use, or upon any private property, public park, or other public property other than properly designated or set aside for such purpose by the government for proper land disposal. Illegal Dumping may be referred to as unlawful dumping.

**“LANDFILL”** means an area of land or an excavation in which wastes are placed for permanent disposal.

**“LEGITIMATE RECYCLING FACILITY”** means an engineered facility or site where Recycling of material other than scrap tires is the primary objective of the Facility, including: (a) Facilities that Accept only Source Separated Recyclable Materials, except scrap tires, and/or Commingled Recyclables which are currently recoverable utilizing existing technology; and (b) Facilities that: (i) Accept mixed or Source Separated Solid Waste; (ii) recover for beneficial use not less than sixty percent (60%) of the weight of Solid Waste brought to the Facility each month (as averaged monthly) for not less than eight (8) months in each calendar year, and (iii) dispose of not more than forty percent (40%) of the total weight of Solid Waste brought to the Facility each month (as averaged monthly) for not less than eight (8) months in each calendar year.

**“MANIFEST”** means the document for identifying the quantity, composition, origin, routing, and destination of Special Handling Wastes during its transportation from the point of generation to the point of storage, treatment, or disposal.

**“MATERIALS RECOVERY FACILITY (MRF)”** means a Solid Waste Management Facility that provides for the extraction from Solid Waste of Recyclable Materials, materials suitable for use as a fuel or soil amendment, or any combination of those materials. This term does not include facilities that recover less than sixty percent (60%) of Recyclable Material from the Solid Waste received on an annual average.

**“MAXIMUM FEASIBLE UTILIZATION”** means the use of a Designated Solid Waste Facility that operates at not less than ninety-five percent (95%) of its designed capacity and/or Ohio EPA-permitted allowable maximum daily waste receipts at the Board-approved rates and charges to be paid by any Person that delivers Solid Waste or Recyclable Materials to the Designated Solid Waste Facility.

**“MODIFY” or “MODIFICATION”** means a change in the operation of an existing In-District Solid Waste Facility that requires the approval of the Director of the Ohio Environmental Protection Agency or that involves a change in the type of material, manner of operation, or activities conducted at a Solid Waste Facility.

**“MUNICIPAL SOLID WASTE” or “MSW”** means Solid Waste from household, community, commercial, and agricultural, and/or industrial sources that does not contain Hazardous Waste as defined in 40 CFR Part 261 unless it is Household Hazardous Waste as defined in 40 CFR §261.4(b)(1).

**“NOTICE OF VIOLATION” or “NOV”** means a written notice that may be issued by SWACO if a Person, Owner, Operator, or responsible Person is alleged to be in violation of a condition or section of these regulations, presents a threat to human health, public safety or the environment.

**“OPEN DUMP”** means a site that is not licensed as a Solid Waste Facility where Solid Wastes, including scrap tires or infectious wastes, are deposited into a body or stream of water or onto the surface of the ground.

**“OPERATOR”** means the Person responsible for the overall operation of a disposal site, Solid Waste Facility, or any part of that site.

**“ORGANIC WASTE”** means Food Wastes, Yard Waste, uncontaminated wood waste, animal waste, crop residue, paper waste, or other non-hazardous carbonaceous waste, such as paper, corrugated paper or cardboard, that is collected and Processed separately from the rest of the Municipal Waste Stream.

**“OWNER”** means the Person who owns a disposal site, Solid Waste Facility, or any part of the site.

**“PERSON”** means an individual, partnership, firm, company, corporation, association, sole proprietorship, joint venture, Owner, Operator, Generator, government unit, or any other legal entity.

**“PLAN”** means the SWACO Solid Waste Management Plan initially approved by the Director of the Ohio Environmental Protection Agency on May 14, 1993, and as subsequently amended thereafter.

**“PROCESS” or “PROCESSED”** means manual, mechanical, or automated separation of Recyclable Material from other materials; separation of Recyclable Materials from each other; cleaning, bundling, compacting, cutting, or packing of Recyclable Material. This shall not include melting, rendering, smelting, vulcanizing, or purification by application of heat or chemical process.

**“RECYCLABLE MATERIALS” or “RECYCLABLES”** means Solid Waste that can be Processed and returned to the economic mainstream in the form of raw materials or products, which may include, but is not limited to, the following: newspaper, corrugated cardboard, aluminum, Yard Waste, office paper, glass, tin and steel cans, metal, motor oil, plastic, antifreeze, wood, and Food Waste.

**“RECYCLING FACILITY”** means a facility designed and operated to receive, store, or Process Recyclable Material which has been separated at the source from all but residual Solid Waste for

the purpose of marketing the material for use as raw material in the manufacturing process of new, reused, or reconstituted products. A Recycling Facility shall not include Compost operations accumulating less than twenty-five (25) cubic yards of compostable material at any given time or a farm-based Compost operation where compostable material is used exclusively on the site where the material is composted.

**“SCAVENGING”** means the uncontrolled or unpermitted removal of material from the Solid Waste stream received at a Solid Waste Facility for disposal for any purpose in a manner which interferes with the safe, efficient operation of the system.

**“SOLID WASTE”** means such unwanted residual solid or semisolid material as results from industrial, commercial, agricultural, and community operations, excluding earth or material from construction, mining, or demolition operations, or other waste materials of the type that would normally be included in demolition debris, nontoxic fly ash, spent nontoxic foundry sand, and slag and other substances that are not harmful or inimical to public health, and includes, but is not limited to, garbage, tires, combustible and non-combustible material, street dirt, and debris. Solid Waste does not include any material that is an infectious waste or a Hazardous Waste.

**“SOLID WASTE FACILITY”** means a facility that collects, stores, transports, transfers, Processes, treats, and/or disposes of Solid Wastes or conducts resource recovery activities. A Solid Waste Facility shall include a Recycling facility, Yard Waste facility, or any facility which receives any Solid Waste material streams for Processing or disposal.

**“SOLID WASTE MANAGEMENT AUTHORITY”** means the Solid Waste Authority of Central Ohio (SWACO) and its agents.

**“SOURCE SEPARATED”** means materials, including Commingled Recyclables, that have been separated or kept separate from the Solid Waste stream at the point of generation for the purpose of additional sorting or Processing those materials for recycling or reuse in order to return them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace.

**“SPECIAL WASTES”** means a Solid Waste that requires special handling procedures or permitting and/or special disposal methods because of its physical characteristics, chemical makeup, or biological nature. This category includes, but is not limited to:

- Ash from fires, furnaces, boilers, or incinerators
- Automotive Shredder Residue, subject to testing by SWACO on a quarterly basis
- Chemical compounds or petroleum products – new or used
- Contaminated soils and USTs
- Debris and/or residue from spill cleanup work
- Drums and drum pads
- Demolition waste from industrial facilities
- Filter cakes
- Friable asbestos containing materials

- Industrial Process wastes
- Manufacturing residue
- Treated Infectious/pathological or biological waste
- Off-specification products or outdated products (i.e., food, consumer, or industrial products)
- Oil and grease
- PCB waste
- Pharmaceutical wastes Pollution control wastes
- Process wastes
- Railroad ties
- RCRA empty containers
- Resource exploration, mining, and production wastes
- Sandblast grit
- Sludge and/or paste type material
- Tank bottoms

**“TRANSFER STATION” or “SOLID WASTE TRANSFER FACILITY”** means any site, location, tract of land, installation, or building that is used or intended to be used primarily for the purpose of transferring Solid Wastes that were generated off the premises of the facility from vehicles or containers into other vehicles for transportation to a Solid Waste disposal facility. This does not include any facility that consists solely of portable containers that have an aggregate volume of fifty cubic yards or less nor any facility where legitimate recycling activities are conducted.

**“UNACCEPTABLE WASTES”** are those materials prohibited from disposal at the Franklin County Sanitary Landfill pursuant to local, State, or federal regulations, or operational restrictions as determined by SWACO. This category includes, but is not limited to:

- Asbestos (friable and non-friable)
- Automotive Waste including any non-liquid, unwanted and discarded automobile parts weighing in excess of fifty (50) pounds, as well as Scrap Tires. This does not include Automobile Shredder Residue.
- Bevill Wastes
- Contaminated soils containing petroleum-based products
- Dedicated loads of Source Separated Recyclable Materials
- Dedicated loads of Yard Waste
- Drums, barrels, buckets, and other containers unless lids have been removed and interiors are cleaned and free of residue in accordance with applicable law and regulations
- Explosive and ordnance materials
- Gas cylinders, unless empty and delivered separate from other Solid Waste and vented to atmosphere
- Hazardous Waste
- Lead acid batteries
- Liquid wastes, including used motor oil
- Radioactive materials
- Untreated Chemotherapeutic waste

- Untreated Infectious/Pathological or Biological waste
- Whole and shredded tires – passenger and large vehicle

**“YARD WASTE”** means all garden residues, leaves, grass clippings, shrubbery, tree pruning, and similar material or debris commonly thrown away in the course of maintaining yards and gardens, including sod and rocks. Yard Waste does not include Food Wastes, plastics and synthetic fibers, lumber, or soils contaminated with hazardous substances. Yard Waste collected for residents by political subdivisions or their contractors is considered municipal Yard Waste. All other yard waste is non-municipal Yard Waste.



# **APPENDIX W**

## **MISCELLANEOUS REQUIRED INFORMATION**



## **APPENDIX W MISCELLANEOUS REQUIRED INFORMATION**

Ohio EPA notified solid waste districts that Format 4.0 did not include several items that are required by Ohio law to be included in solid waste plans. Appendix W has been developed to meet the following miscellaneous requirements:

### **A. Solid Waste Management and Recycling Inventories Requirement**

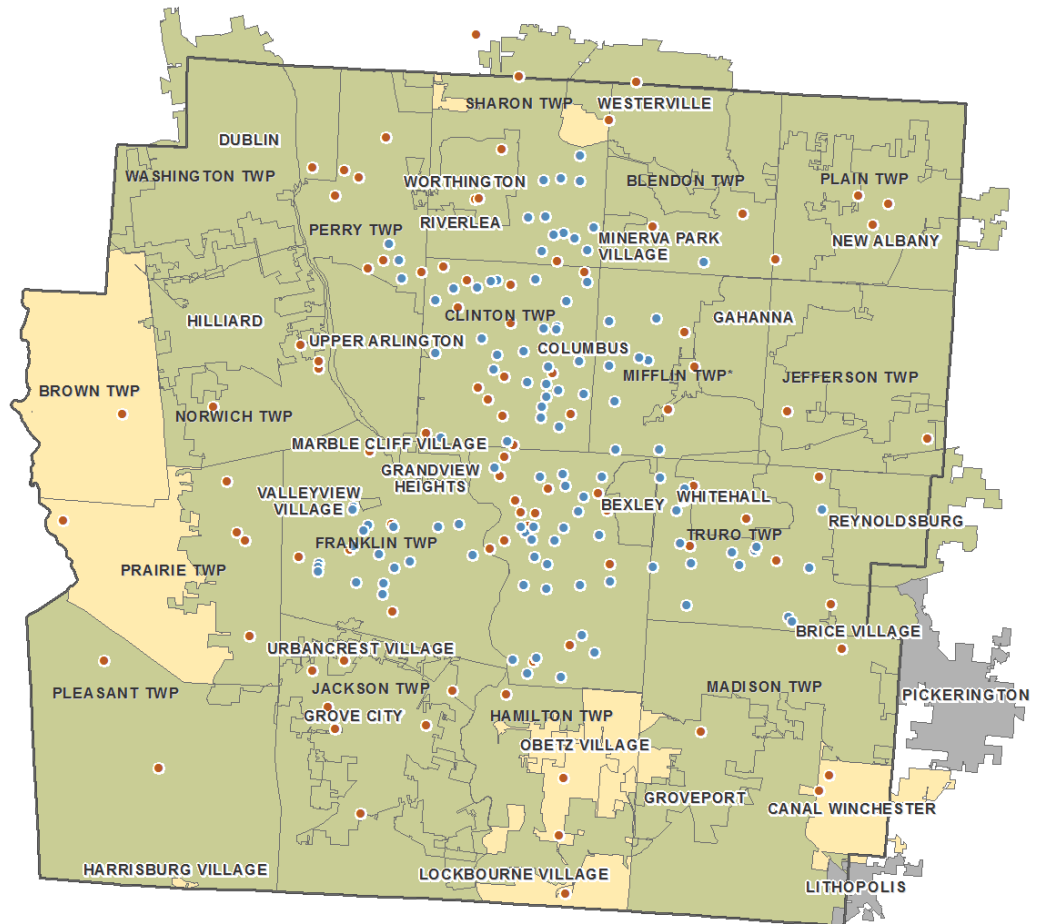
Ohio Revised Code Section 3734.53 (A)(2) requires “...an inventory of all existing facilities where solid wastes are being disposed of, all resource recovery facilities, and all recycling activities within the district. The inventory shall identify each such facility or activity and, for each disposal shall estimate the remaining disposal capacity available at the facility. The inventory shall be accompanied by a map that shows the location of each such existing facility or activity.”

#### **1. Solid Waste Management and Recycling Inventories Response**

Appendix B of the Plan Update includes a comprehensive recycling infrastructure providing data and information on curbside recycling non-subscription services, recycling drop-offs and composting facilities operating in the District. Appendix D includes an inventory of in-district and out-of-district landfills and transfer facilities managing waste in and outside the district. Appendix M, “Waste Management Capacity Analysis,” provides remaining disposal capacity for landfills.

The following series of maps shows the location of each existing facility or activity in the District during the 2014 reference year.

Figure W-1. 2014 SWACO Access to Drop-Off and Curbside Recycling

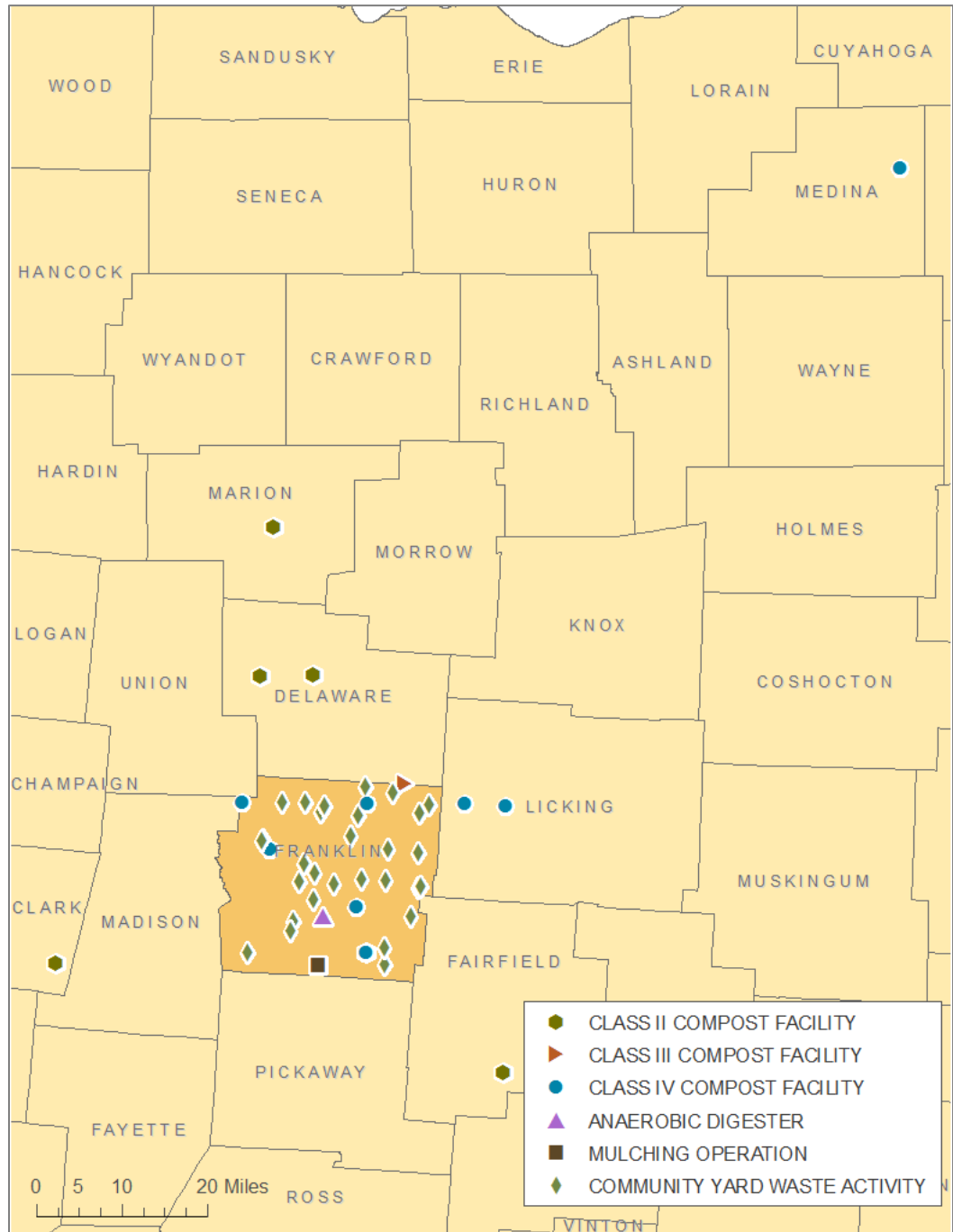


- FULL-TIME DROP-OFF
- PART-TIME DROP-OFF
- NON-SUBSCRIPTION CURBSIDE RECYCLING
- NO CURBSIDE RECYCLING
- FRANKLIN CO. BOUNDARY
- EXCLUDED (<50% POPULATION IN FRANKLIN CO.)

\*NON-SUBSCRIPTION CURBSIDE RECYCLING DID NOT BEGIN IN MIFFLIN TOWNSHIP UNTIL 2015.



Figure W-2. 2014 SWACO Yard Waste Composting Facilities and Activities



**Figure W-3. 2014 Landfills and Transfer Stations Used to Manage District Waste**



**Note:** In 2014, approximately 25 tons of waste generated in the District were sent to one or more landfills in Kentucky and 1,054 tons of waste generated in the District were sent to landfills in Indiana. These facilities were not identified on SWACO’s 2014 Annual District Review Forms and are therefore excluded from the map.

**B. Open Dumping Sites Inventory Requirement**

Ohio Revised Code Section 3734.53 (A)(4) requires “...an inventory of open dumping sites for solid wastes, including solid wastes consisting of scrap tires and facilities for the disposal of fly ash and bottom ash, foundry sand, and slag within the district. The

inventory shall identify each such site or facility and shall be accompanied by a map that shows the location of each of them.”

**1. Open Dumping Sites Inventory Response**

In 2014, two sites were identified by the Environmental Crimes Task Force. Both sites were abated within less than one year from the date they were reported. The following table presents information about the known open dumps located in Franklin County during the reference year.

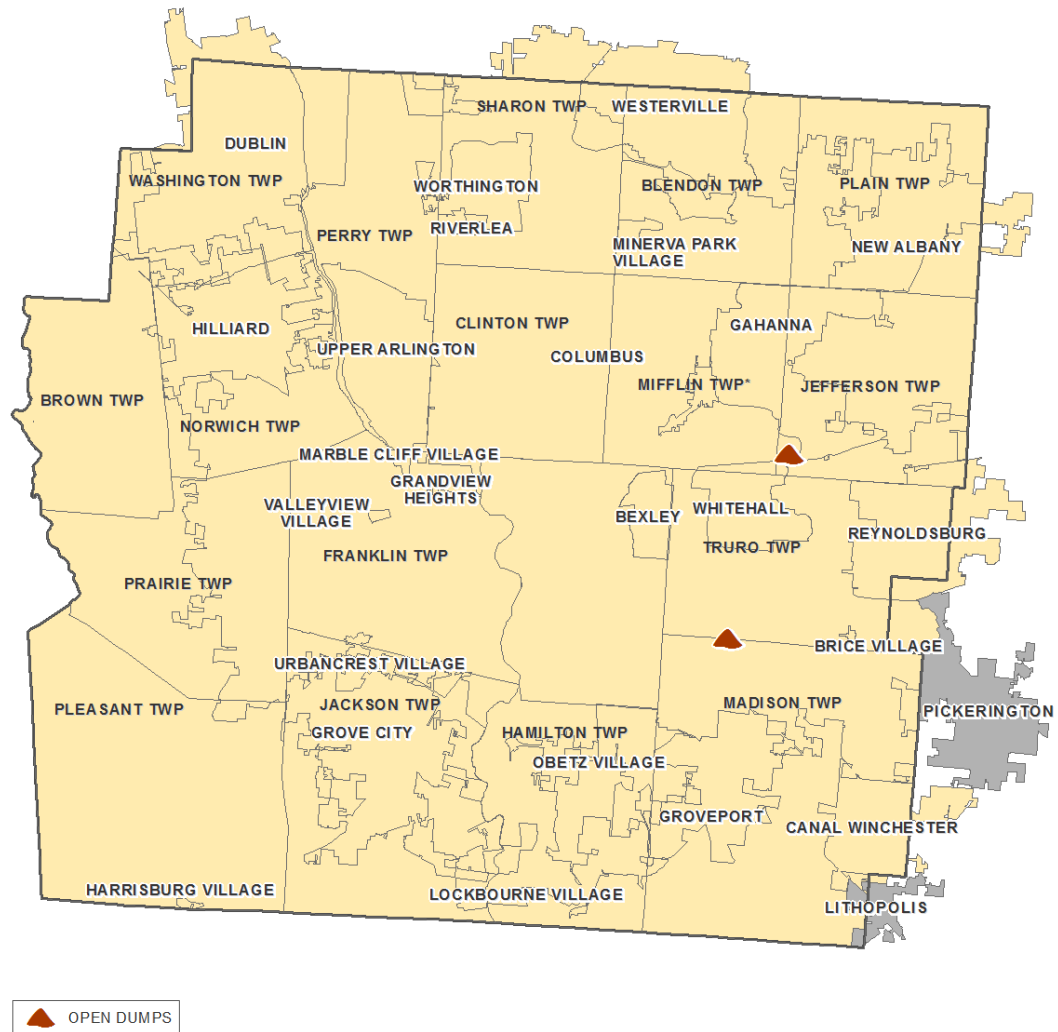
**Table W-1. Open Dumps and Waste Tire Dumps Located in the District**

Site Location (description)	Owner Contact	Description of Materials Dumped	Parcel Size (acres)	Time Period Site has Existed	Update
<i>Open Dump Sites</i>					
Anchor Recycling 453 Claycraft Rd. Gahanna, OH 43068	Anchor Recycling PO Box 635 Columbus, OH 43216	Construction and Demolition Debris, Aggregate	47.7	<1 Year	Abated
Anchor Car Wash Systems 2755 Old Courtright Rd. Columbus, OH 43223	3850 Refugee LLC 35 E. Central Ave. Delaware, OH 43015	Mixed Debris	0.4	<1 Year	Abated
<i>Waste Tire Dump Sites</i>					
None.	N/A	N/A	N/A	N/A	N/A

**Source:** Franklin County Health Department, Environmental Crimes Task Force (ECTF)

The following maps shows the location of each existing open dump in the District during the 2014 reference year.

Figure W-4. 2014 Open Dumps



**C. Out-of-District Waste to be Disposed in District and Effect of Newly Regulated Waste Streams Requirement**

Ohio Revised Code Section 3734.53 (A)(6) requires “...for each year of the forecast period, projections of the amounts and composition of solid wastes that will be generated within the district, the amounts of solid wastes originating outside the district that will be brought into the district for disposal or resource recovery, the nature of industrial activities within the district, and the effect of newly regulated waste streams, solid waste minimization activities and solid waste recycling and reuse activities on solid waste generation rates. For each year of the forecast period, projections of waste quantities shall be compiled as an aggregate quantity of wastes.”

**1. Out-of-District Waste to be Disposed in District and Effect of Newly Regulated Waste Streams Response**

Appendix M includes information regarding approximately 1,000 tons of material that was generated and sent to incinerators or medical waste treatment outside the District. Appendix M also evaluates landfill capacity and has determined that the District has ample capacity for landfilling based on current conditions throughout the planning period. Appendix K-1a includes the amount of solid waste generated, recycled and the amount of solid waste disposed.

A negligible quantity of waste generated outside SWACO’s jurisdiction is disposed at SWACO’s landfill. The following table presents the historic total tons of out-of-district waste accepted at SWACO’s disposal facilities.

**Total W-2. Out-of-District Tons Disposed at SWACO’s Landfill**

Year	Tons
2011	4,725.0
2012	10,696.4
2013	9,639.3
2014	5,427.3
2015	6,025.8
<b>2011 - 2015 Average</b>	<b>7,302.8</b>

The out-of-district tons disposed at SWACO’s Landfill averaged 7,303 tons annually from 2011 to 2015. This quantity of waste represents less than one percent of the total waste disposed at the landfill annually. All out-of-district waste disposed at SWACO’s Franklin County Sanitary Landfill was directly hauled. No out-of-state waste was accepted at the landfill during the period analyzed. SWACO does not anticipate any major changes in the quantity of waste received from outside the Authority.

A flat quantity of 7,303 tons of out-of-district waste is projected to be disposed in SWACO’s landfill each year for the duration of the planning period.

**D. Expense Analysis Requirement**

Ohio Revised Code Section 3734.53 (A)(10) requires “...an analysis of expenses for which the district is liable under section 3734.35 of the Revised Code.”

**1. Expense Analysis Response**

The District does not provide funding under 3734.35 to any political subdivision.

**E. Facility Identification Requirement and Facility Closure, Expansion, Establishment Schedule Requirement**

Ohio Revised Code Section 3734.53 (A)(13) requires "...a schedule for implementation of the plan that, when applicable contains all of the following:

- (a) An identification of the solid waste disposal, transfer, and resource recovery facilities and recycling activities contained in the plan where solid wastes generated within or transported into the district will be taken for disposal, transfer, resource recovery or recycling.
- (b) A schedule for closure of existing solid waste facilities, expansion of existing facilities and establishment of new facilities. The schedule for expansion of existing facilities or establishment of new facilities shall include, without limitation, the approximate dates for filing applications for appropriate permits to install or modify those facilities under section 3734.05 of the Revised Code...."

**1. Facility Identification Response**

Appendix P presents the table regarding designation and flow control for disposal of solid waste and transfer of solid waste. The following rules have been adopted by the SWACO Board and are also subject to change:

**RULE 2-2008: DELIVERY OF SOURCE SEPARATED RECYCLABLE MATERIALS TO DESIGNATED FACILITIES**

All Source Separated Recyclable Materials shall be delivered for Recycling to a Designated Solid Waste Recycling Facility, Designated Legitimate Recycling Facility or Designated Resource Recovery Facility.

**RULE 3-2008: PROHIBITION ON COMBINING SOURCE SEPARATED RECYCLABLE MATERIALS WITH OTHER SOLID WASTE**

No Person shall combine Source Separated Recyclable Materials with other Solid Waste intended for disposal without the prior written consent of the Board.

**RULE 4-2008: ACCEPTANCE OF SOURCE SEPARATED RECYCLABLE MATERIALS**

No Person, other than a Person operating a Solid Waste Recycling Facility, Legitimate Recycling Facility or Resource Recovery Facility, may accept Source Separated Recyclable Materials from a Generator unless such Solid Waste Recycling Facility, Legitimate Recycling Facility or Resource Recovery Facility is Designated by the Board. This Rule shall not apply to a Charitable Organization.

**RULE 5-2008: PROHIBITION ON DISPOSAL OF SOURCE SEPARATED SOLID WASTE RECYCLABLE MATERIAL**

No Person shall deliver Source Separated Recyclable Materials for disposal at a Solid Waste Disposal Facility without the prior written consent of the Board.

**RULE 6-2008: PROHIBITION ON DISPOSAL OF PROCESSED SOLID WASTE RECYCLABLE MATERIAL**

No Person, without the prior written consent of the Board, shall deliver for disposal at a Solid Waste Disposal Facility, Solid Waste Recyclable Material that has been separated, processed or Recycled at a Solid Waste Recycling Facility, Legitimate Recycling Facility or Resource Recovery Facility.

**2. Facility Closure, Expansion, Establishment Schedule Response**

In 2017, SWACO will submit an application for a new permit-to-install (PTI) to expand the landfill. The new PTI will add fifty-five acres to the foot print and will have 3:5 to 1 side slopes. This expansion will give an additional twenty-eight years of life to the landfill within the current planning boundaries.

**F. Source Reduction Program Requirement**

Ohio Revised Code Section 3734.53 (A)(14) requires "...a program for providing informational or technical assistance regarding source reduction to solid waste generators or particular categories of solid waste generators, within the District. The plan shall set forth the types of assistance to be provided by the district and the specific categories of generators that are to be served. The district has the sole discretion to determine the types of assistance that are to be provided under the program and the categories of generators to be serviced by it."

**1. Source Reduction Program Response**

Appendix L includes plans for outreach and marketing and covering the topic of source reduction for solid waste generators for different categories of generators. Plans for the industrial sector also include technical assistance for source and waste reduction.